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School of Medicine and Department of Anatomy History

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School of Medicine & Department of Anatomy

HISTORY

SCHOOL

OF

MEDICINE

HISTORY

INDEX

INTRODUCTION

The enclosed history of the Department of Anatomy has a very close association with the history of the entire School of Medicine. The author, D.L. Matthies, Ph.D., has ably interwoven many aspects of the medical school history with that of the Department of Anatomy. For this reason the title of this document has been combined to indicate both the history of Anatomy together with many details of the history of the School of Medicine.

This history and those of all Basic and Clinical Science Departments are on file at the Harley E. French Medical School Library and the E.B. Robinson special collections section of the Chester Fritz Library.

Robert G. Fischer, Ph.D.

PREFACE

This historical overview of the Department of Anatomy and the School of Medicine, of the University of North Dakota is being written as part of a commemoration of the 100th Anniversary of the University. The cornerstone of the University's first building was placed October 2, 1883 while the region was still called the Dakota Territory and six years before North Dakota was to become a state. In anticipation of the subdivision of the Territory into states, however, the University was named University of North Dakota. Nineteen eighty-three is not the centennial of the School of Medicine or College of Medicine as it was called at its founding, however. The founding occurred in 1905, making 1983 the 78th Anniversary of this division of the University. It would be not quite correct to assert that the 78th Anniversary of the School of Medicine was also the 78th Anniversary of the Department of Anatomy. It is evident that there were no separate departments when the School was founded in 1905 and, in fact, there was only one full-time faculty member and he was an Anatomist. The courses other than Anatomy were taught either by members of other non-medical departments of the University or by part-time instructors who were also practicing physicians in the Grand Forks area. The term "department" is first encountered in the School of Medicine Bulletin for 1907 but it is not known whether this represented an actual administrative subdivision or not. Probably not, because there was still only one full-time faculty member, Archibald L. McDonald the Anatomist in the School of Medicine. Whatever the administrative organization of the new College of Medicine, 1905 was the first year of the teaching of Human Anatomy at UND and so we will call it the year of founding

of the Department of Anatomy anyway.

The history of an academic department in a university is, of course, the history of its personnel, faculty and support staff. It is the history of the people who manned the department and the mission of the department and how that mission was achieved by its personnel. The mission of the Department of Anatomy, we shall describe how the students trained and the vehicle of that training; the courses taught. Accordingly, this history of the Department of Anatomy will recount the names of as many as have been recorded of the faculty, staff, and students who have passed through its portals over the past 78 years. The courses taught, with a brief description of each, have been recorded to the extent possible. An interested reader will be able to trace the changes which occurred in course offerings in response to advances in technology and changes of interests in the national research and medical communities.

Simply recording catalogue descriptions of courses taught has not been a very fascinating occupation, however desirable the recording of this information. In the process of doing so, however, this author has had many occasions to wish that he could go back in time and sit in the furthest, darkest corner of the many lecture rooms and laboratories in which these courses were taught. Only then could one convert these dry, factually oriented course announcements into a perception of what knowledge was presented, in what way, in those times, by the teachers of long ago. Only then, could one develop an accurate picture of the types of students who took up studies of medicine in North Dakota in those years and their interactions with course material and with the teachers who taught it.

A rather thorough immersion for some months in such records as are available has

suggested to this author that these past years must have been very colorful in terms of events surrounding the establishment of the "Prairie University" and its College of Medicine. The personalities involved, faculty, staff, students, and administrators must also have been relatively colorful as were many of the regents and legislators who were involved in those events. One can derive this sense from the Geiger History and one does not always have to read between the lines to do so. It is a pity that so much of this color has been lost for lack of contemporary recording of it and for the fact that University historians of the past had to make of their descriptions an academic exercise rather than a popular one. If it had to be one way or the other, however, then we can be grateful for their painstaking gathering of important factual material which will be of immense value in the future as the days about which they wrote recede into the misty horizons of history. For the lighter side of the story, we do not have to try very hard to imagine the political posturing and gesturing which must have occurred at each biennial meeting of the legislature as the subject of funding higher education in North Dakota was brought up; each of the political factions trying to appear more frugal and responsive to the frugality of the electorate than the other. Such scenes do not require much imagination for the custom persists to the present and may be appreciated at each biennial meeting of the legislature when the Board of Higher Education submits its budget for the following two years. One could guess that the legislative debates of earlier years were even more chromatic than now because they occurred with less scrutiny and reportage by news media than is the case at present. Various histories of North Dakota suggest that the participants in these debates were more personally colorful also. There are still a few similar people left in North Dakota politics but, alas, only a few.

In whatever manners and styles the University and the legislatures managed over the years, they have built an institution of which the citizens of the state can be proud. There is an excellent liberal arts education available here at UND for those who will work to achieve it. And there are excellent resources in the graduate and professional schools also, for those who wish to take that route. As with all universities, however, it is still possible to spend four years here and come away four years older and little wiser. But this probably happens as an exception rather than the rule.

The Department of Anatomy is only a small cog on a large university wheel but I will attempt to record as much information as possible considering sources available, in order that the functions of that small Anatomical cog can be placed in a perspective of the functions of the University as a whole. As one reads through the following, it is hoped that he will be able to sense the stresses to which the University and its departments have been subjected over the years. Enrollment and, hence, faculty rosters and course offerings have varied in response to an unusually large variety of circumstances, almost none of which were under the direct control of the University or the State of North Dakota. These stresses include those of the "growing pains" associated with its early days of founding at and just before the turn of the century. Such, of course, would be characteristic of any institution in the process of formation. Strongly affecting the floods and ebbs of UND fortunes were also the following influences:

Factors affecting tax support and enrollment at the University:

> The price of wheat--always the price of wheat. The price of other crops to be sure, but always the price of wheat.

Weather--good weather for agriculture meant high yields and therefore low prices. Bad weather meant high prices but not much to sell, e.g., the "drought" of the 1930's.

Crop surpluses and Federal Government policy toward same, e.g., price supports, "soil bank" programs, foreign policy including embargoes, etc.

Economic Depression--usually nationwide.

War and preparation for war including conscription laws--UND has passed through four major wars whose impacts were strongly felt in a variety of ways: World Wars I and II, the Korean War, and the Vietnam War. Directly and indirectly related to the influences resulting from wars are, of course, government programs which subsidized education expenses, e.g., the "G.I. Bill". Post-"Sputnik" science training programs, student education loans, proximity of the University to Strategic Air Command bases at Grand Forks and Minot; "baby booms" resulting from prolonged fielding of conscript armies and navies in foreign countries. (We have been told that the wave of young people who were the "baby boom" has passed and that enrollment at the University must therefore drop, but it continues to increase well into the 1980's).

Problems peculiar to North Dakota:

Superimposed on the above list of problems are:

1) Regional rivalries which involve the fact that the two universities in the state are at the furthest eastern reaches of it,

leaving only the state college system and the junior college system to service the needs of the rest of the geographic state.

2) Institutional rivalries--this, by itself, is not so peculiar to this state, but the fact that both NDSU and UND compete for funding from the same statewide budget and all of such funding goes to the fertile and already relatively well-off Red River Valley aggravates the problem.

3) What can only be interpreted as some misgivings about the value of higher education on the whole, in an agricultural state. This attitude is probably held by only a minority of North Dakotans, but a minority large enough to command the attention of legislative representatives and other politicians.

Some of the above cited influences have had negative impact on the University and its School of Medicine and some have had and are still having positive impact. It is well as we try to understand events over the years, to make note of the steps which the institution has taken in a forward direction, as well as the steps in retreat and the steps never made in either direction. We can determine an algebraic sum of these steps and "no steps" by recalling that in 1883 the University was a single building, on a treeless prairie, two miles from a small town which was apparently established only because it was on the confluence of the Red River and the Red Lake River on the railroad line. The new University had a very limited number of offerings for 9 students. In 1983 the University has dozens of buildings of consistent and pleasing architecture on one of the most scenic and well-kept urban campus

settings on the continent. It teaches many hundreds of courses from more than 70 departments and divisions to more than 11,000 students. How the University got from where it was in 1883 to where it is in 1983 would be a long and complex story, a good deal of which has probably been lost with the papers and memories of the men and women responsible. Most of what has been salvaged is recorded in the histories of Geiger at the 75th year and Chandler at the 50th.

Detailed histories of other departments and divisions of the University, including those of the School of Medicine, are being written and may be consulted in those departments, the University Library, or the Medical Library. The subject of this paper, of course, is the history of the Department of Anatomy, but in an attempt to enable it to stand as an independent history of that department, some other events and divisions of the University would also have to be cited, however briefly. Events which affected the University inevitably affected the School of Medicine and the Department of Anatomy.

Indeed, even events which affected other departments in the School of Medicine were usually not without some effect on Anatomy, especially in the earlier years. For an understanding of the context in which Anatomy flourished, therefore, we will have to digress occasionally to try to sense those currents of change which were to be elements of the milieu in which the Department found itself. By doing so, the reader should be able to see how University resources varied from time to time, how these resources were distributed, and how this distribution affected faculty and the interactions between faculties of the several disciplines of the basic Medical Sciences. The reader should also be able to develop a "sense" for the perennial problem of high faculty turnover rates and their effects on the

teaching programs. Also to appreciate some of the unique devices used to "fill out" the faculty rosters in response to some of the economic and other stresses imposed over the years.

In furtherance of these ends, I have spent considerably more time in describing certain years of the Department and much less time with other years. It will be found, for example, that considerable detail is recorded for certain phases of the history which involve significant development, such as the earliest several years of the new College of Medicine in which policies are being formulated, entrance requirements established, and curriculum developed. The late 1940's and early 1950's are also examined in some detail because these were times of great changes in the School of Medicine faculty, policies, and curriculum in keeping with the School's attempts to gain full accreditation. Contemporary with these attempts, of course, was the establishment of the new Medical Center, the moving of the Basic Science Departments to the new Medical Science Building from Old Science Building in 1949 and the establishment of a new source of funding for the School from the then recently enacted mill levy. By contrast, some years during the teens, 1920's and 1930's are given only brief attention for the reason that little change was in progress during those times. In more recent years, the 1970's and 1980's are reported in some depth for two reasons; they represent the period of expansion of the School to a full four years degree-granting curriculum and, further, that this author was present on the scene during most of this time and can report more from personal experience instead of relying on catalogues and histories written by other non-Department historians describing the University as a whole. Citation of individual faculty and staff of departments other than that of Anatomy is phased out in

reports of the later years as departments became more independent. Changes in chairmanships and deans became of more concern as the faculty rosters were greatly expanded. Only faculty and staff of long term engagement are cited on the occasions of their retirements. The names of some students are cited either because they returned to teach at the School of Medicine or because their fathers taught here or both. Exercising the traditional rights of authors' privilege, I have also cited the names and dates of students, staff, faculty, and administrators who stand out in my memory for one reason or another. The other more general University histories have contributed much to an understanding of the School of Medicine in the historical context of the University as a whole, but they obviously could not deal with citations of each and every faculty member and each and every course in all of the departments. This duty is the function of the departmental histories being written during this centennial year. As recreational reading, the following account of the Department of Anatomy will not win any literary awards, but it is hoped that it will serve as a device for the accumulation of available relevant information on the topic of the UND School of Medicine's Department of Anatomy on a single document which might serve for future reference, so that the research, sometimes tedious and sometimes intriguing, which produced it might not have to be repeated in the future.

There is no end, of course, to such a narrative as the history of the Department continues to accrete during the time of this writing. Each change in role and policy of the University and the School of Medicine, as well as the Department writes another paragraph or chapter in their histories and should be recorded for the benefit of future generations who might wish to know "how it was then". It is to be hoped that this history will be kept current at least every 10 years so that the material in it will possess the freshness of having

been written by contemporaries rather than by dredging dry data out of old University Announcements, Bulletins, catalogues, and unlabeled photographic files.

DEDICATION

Over the years, to be described below, there are recorded the names of many of the practicing physicians in the Grand Forks area who have contributed to the teaching program at the School of medicine in the form of lectures, laboratory assistance, demonstrations, clerkships, etc. in both basic sciences and clinical courses. Most of these names are listed in this volume in the annual faculty rosters. The School of Medicine and the Anatomy Department wish to express their gratitude to those clinicians as well as to all others who have contributed to the success of medical training in North Dakota.

The author wishes to single out for special thanks Dr. Phillip Woutat who for many years contributed to the program in radiological anatomy which is known from personal experience to have placed UND students well ahead of most other medical students in this subject as they enter their clinical training.

Dr. Woutat follows in the footsteps of his father Henry in his contributions to the Anatomy Department, which began in 1907.

In expressing our thanks to both father and son it is to Dr. Phil that this history of the Anatomy Department is dedicated as a symbol of all of the clinicians who have contributed to the medical training program over the years.

D. L. Matthies, Ph.D.

UNIVERSITY OF NORTH DAKOTA

MEDICAL SCHOOL

Sixty Year History
1883-1943

Material Compiled by E.F. Chandler

THE COLLEGE OF MEDICINE

The University of North Dakota has never tried to arrange its teaching so as to give complete medical course leading through entirely to the medical degree. Because the last two years of any really creditable medical course ought to include much observational and clinical work in good variety, such as obtainable only in the hospitals of fairly large cities.

Therefore the plan made here when the School of Medicine here first began, and carried consistently through the following years to the present, is this.

Students who wish ultimately to obtain the regular medical degree from a full medical college can equally well, and perhaps with greater convenience and economy do this. If they carry through in first-class manner the regular four-year curriculum scheduled by the Medical School of the University of North Dakota, they receive at its conclusion a Bachelor of Arts or Bachelor of Science Degree with an attached certificate from the University of North Dakota stating that this has included class-room, laboratory, and dissecting room work equivalent to the regular work of the first two years of the course in any standard regular medical college. This certificate accredits them for entrance half through the regular course of any regular standard complete medical college of this country, which they can then attend and obtain the final regular medical degree in two year more.

The thought of this possible plan at the University of North Dakota arose first in connection with possible expansions here of the department of biology, of which Melvin Amos Brannon was then the head, and the beginning of this plan was finally authorized in 1905: and announcement was then made of the establishment here of a College of Medicine (called however afterwards more often the Division of Medicine or the School of Medicine.)

In the fall of 1905 it opened thus; it was under the immediate direction of Dean Brannon, and with the instruction in most subjects given by those already members of the university faculty. Although for such of the subjects as had not been given here before there was necessary a slight increase in the staff of the biology department, and the addition of one full-time instructor in anatomy and physiology (Archibald L. McDonald, B.A. from this university in 1901, M.D. from Johns Hopkins in 1905) who with successive promotions remained in charge of that part of the work here for five years. And also several Grand Forks experienced practicing physicians were engaged as lecturers a few hours per month or per week on appropriate topics.

In the first years very few of the students working toward such degree were above the freshman--sophomore years, nearly every hour of which would have been taught here in any case, for the other colleges. Therefore those who completed the requirements for final graduation from this new pre-medical curriculum were given their regular B.A. degree from the College of Arts, with an additional certificate (for use if afterwards entering a full medical college) stating that they had completed in the division of Medicine here the first two years of standard medical-college course.

In 1915 this was changed to the plan used ever since, and the degrees of Bachelor of Arts of Bachelor of Science, with the special attached Medical Course certificate, are issued

by the College of Medicine of this university.

The first nominal enrollment in College of Medicine here, for year 1905-1906, lists only three students, though there were numerous freshmen and sophomores with intentions turned in that direction and following the advice of the medical school head in their enrollment, but whose work did not year differentiate them positively from the other College of Arts students.

The next years there were a dozen, then twenty, then thirty, and the first certificate for completion of the special medical two years included in the B.A. course was given in 1910 (only one that year.)

For the next half-dozen years the total enrollment was about thirty, and about four per year completed that special curriculum, to receive in addition to the B.A. degree the special part-medical-course certificate.

In 1915 the College (or School) of Medicine was put officially on its own responsibility to give the degrees, and its enrollment had become about sixty, which has continued the usual enrollment up to 1943--although of course under the conditions of some special single years it may have been much more or much less than sixty. And after 1915 the number of graduates has been about ten per year, and since 1925 has usually been twenty or twenty-five per year.

The faculty has been increased as or when needful, so that in most years there have been three, four, or five full-time men teaching chiefly or exclusively the school of medicine subjects, besides laboratory assistants, and the local Grand Forks physicians giving series of lectures on some topics.

Also, during some years of the time, instruction in nursing has been offered, the

attendants on which were not working for a college degree. and through nearly its whole period the division of Medicine has had a great amount of force, operating Public Health Laboratory for the university campus, or several indifferent parts of the state continuously operated by our men or under our advice. But this has usually kept one or several laboratory chiefs and assistants here on the campus.

Through this whole thirty-eight years the quarters of the Division of Medicine have been in Science Hall. At first it had had a share of the biology department space which was the third floor of Science Hall. but in February, 1908, (on the removal of chemistry and mining to Babcock Hall just completed) biology and the Division of Medicine obtained most of the second floor also, and the rest of the second floor in 1910. Since 1910 the two upper floors of Science Hall have been almost exclusively occupied by the offices, lecture rooms and dissecting rooms of the Division of Medicine and its Public Health Laboratories, etc., except that Biology and Botany were not transferred away (to the Chemistry building) until 1919. Also in many years more or less space in some other building has been used for laboratories, nursing work, and dispensary.

Dean M.A. Brannon was on the force of this university to April 15, 1914, when he resigned to become president of the University of Idaho. But he was on leave-of-absence for a year in 1911-1912, and accordingly transferred the personal responsibility for the Division of Medicine to H.E. French in 1911.

Doctor Harley Ellsworth French is a native of Indiana, and M.D. from Northwestern. He had been professor of anatomy and physiology for four years at the University of South Dakota, and in 1911, at age thirty-eight, was appointed as professor of anatomy here and Dean of our Division of Medicine, and has continued as such for the thirty-two years since.

THE HISTORY OF THE DEPARTMENT OF ANATOMY

AND THE

SCHOOL OF MEDICINE

AT THE

UNIVERSITY OF NORTH DAKOTA

(Written in 1983, the 100th Anniversary of the University
and the 78th year of the School of Medicine)

Detailed information on the founding of the University of North Dakota in 1883, and Departments of its Medical College in 1905 are available from other histories being prepared at this time. In order that the history of the Department of Anatomy might stand as an independent unit, however, it seems desirable to provide a few paragraphs touching on the conditions and circumstances which prevailed at the time of the founding of the College of Medicine when there were no departmental subdivisions.

The Medical College was opened on September 26, 1905, by the trustees of the University "in the belief that many young men and young women of North Dakota would prefer to do as much of their medical work as possible at home." In a statement accompanying this announcement, the resources of the new Medical College were described as follows: "The University is equipped for giving thorough instruction in all of the subjects offered in the first two years of the best medical colleges. It is not the intention of the University to offer the full four year course in medicine until the clinical facilities of the institution are adequate to the demands of the advanced professional work given during the last two years of medical work."

UND was to become one of nine such two-year schools or "half schools" in the country. It is apparent that it was intended at a very early point to enlarge the program eventually to the full four years of a standard American school of medicine. This increase in curriculum has been in a phasing-in process only since 1973 and will have been fully achieved, finally, in 1984.

The new college was to share the top floor of the science building with the Biology department and with the museum until a Medical Science Building was built in 1949. The faculty of the Medical College, when it first opened its doors on September 26, 1905 was listed as follows:

Webster Merrifield, M.A., President of the University

Melvin A. Brannon, M.A., Dean of Medicine, Bacteriology and Embryology

John Macnie, M.A., French

Earle J. Babcock, B.S., Chemistry

Joseph Kennedy, M.A., Philosophy

Vernon P. Squires, M.A., English

John Tingelstad, M.A., German

Elwyn F. Chandler, M.A., Mathematics

George W. Stewart, Ph.D., Physics

H.M. Wheeler, M.D., Surgery

John Duncan Taylor, M.D. Pathology

August Eggers, M.D., Medicine

Archie Leete McDonald, M.D., Anatomy and Physiology

N. Johanna Kildahl, M.A. Histology

J.G. Sweetland, Jr., M.D., Hygiene

Several points of interest are raised by an examination of this faculty roster:

1) Faculty are listed who taught courses which did not usually form part of the curriculum of a school of medicine, e.g., languages, philosophy, etc. The reason for this is that the Medical College of UND offered a four year program for the B.A. degree. The first two years were, in effect, preparatory for the second two years. These second two years were the equivalent of what we now call the basic science years, or what would be the first two years of a standard 4-year medical school. Although the students had been accepted in the Medical College upon matriculation to their first year, they were essentially pre-medical students with an assigned curriculum which was preparatory for the 3rd and 4th years. College of Medicine faculty roster therefore included pre-med" faculty as well as the President of the University. This organization of the Medical College was explained by the trustees of the University as follows: "It is the policy of the best medical schools to base the professional work on thorough academic training. All agree that it is desirable for prospective medical students to complete the four years collegiate course before entering the professional school. However, this plan seems to require an undue amount of time from many undergraduates, hence the favor shown a compromise curriculum which permits a portion of the professional course to count on the B.A. degree. The University has adopted this latter plan. Upon those who complete the following college course, the University will confer the B.A. degree and also give a certificate stating that two

years of the the medical course have been completed. This certificate will admit students of the University to the junior year of those medical colleges with which the University is articulated."

2) A second point of interest in the faculty roster is the presence of members who hold the M.D. degree. Most of these members were probably local practicing physicians who taught part time, a custom which was to be condemned 5 years later by Abraham Flexner in his Carnegie Report, but which seems to have come back full circle as this is written. Indeed, 'Community' physicians form a very important component of the UND School of Medicine training program in clinical medicine at present and have participated in Basic Science and Clinical teaching throughout the history of the school. Wheeler, Taylor, and Eggers, who held the M.D. degree, had appointments as Lecturers, in 1905, a title which is often conferred upon part-time faculty. Sweetland, incidentally, another M.D., was also the Director of Athletics for the University.

McDonald, however, was probably a full-time faculty member teaching anatomy and physiology. He was appointed Instructor in both disciplines from 1906 to 1909 and Assistant Professor in 1910 and 1911. He was a native North Dakotan (born in Grand Forks), and took his B.A. from UND in 1901. He earned his M.D. at Johns Hopkins in 1905. The last record of him which is available was that of private medical practice in Duluth, Minnesota from 1911.

Brannon was Professor of Biology at the time of founding of the Medical College and had been on the liberal arts faculty since 1894. With the founding of the school he became Dean of Medicine (1906-1911), then Dean of Liberal Arts

(1912-1914). He then went to the University of Idaho as President of that institution.

3) McDonald's assignment to teach both anatomy and physiology suggests that at this early stage of development of the school there were no separate departments as there are now.

4) If the Histology teacher N. Johanna Kildahl, M.A., was a female, she may have enjoyed the position of a very first female faculty member at UND College of Medicine.

So now we have our new UND Basic Science Medical College consisting of the President of the University, a full-time Dean who also taught Bacteriology and Embryology, an apparently full-time medically qualified anatomist-physiologist and four part-time (probably) physicians who were in private practice in the community. The remainder of the listed faculty were teaching undergraduate "pre-med" courses to students who had been accepted into the Medical College, contingent upon the successful completion of the first two years.

It might be appropriate at this time to stop and look also at the requirements for admission to the UND Medical College. We have managed to catch a glimpse of the faculty which was being provided for the first class and so it might be well to try to get an equally brief glimpse of the student "material" with which they proposed to work. Any individual personal study would be quite impossible at this late date, but we do have on record the courses which were recommended to have been taken by the student applying to the College of Medicine:

ADMISSION OF STUDENTS

Students who desire to enroll in the medical college, without conditions, must present

certificates showing completion of a year course in each of the following subjects:

Rhetoric

Outlines of English

Algebra

Geometry, Plane

History, Ancient or General Latin 1, Latin Lessons

Latin 2, Selections from Viri Romae, Nepos and Caesar's Gallic War
Reading and Prose Composition

Latin 3, Cicero, Orations in Catilinam, De Imperio Pompei and Pro Archia
Sight Reading and Prose Composition

German 1, Schmitz's Elements, Pts. I and 2, and "Gluck Auf," A First
German Reader

Greek 1, White's First Greek Book, Xenophon (Anabasis), Pt. of Book 1
Prose Composition

Botany (apparently this was considered Biology I) University courses start
with Biology II

Physics

The reader is reminded that these courses were to have been taken before matriculation in College of Medicine. The first year of the four year program in the College was the first year of collegiate work so that the above described courses were to have been completed in Secondary School.

The admission requirements for the Medical College should be contrasted with those of the School of Law which had been established in 1899. In 1906, School of Law decided to upgrade its admission standards by requiring two years of high school preparation. It should be noted, however, that Geiger (the UND historian) indicated that in the "first couple

of years," the Medical College admitted some applicants directly to the two year medical program from high school. It is true, in any case, that the University of North Dakota was one of 7 of the first medical schools in the country to require two years of college work for admission.

Having established a faculty and admission requirements we may now examine the proposed unique curriculum for the UND Medical College in September of 1905.

Provision was made for application to advanced standing provided that the applicants show that they have "completed the work which prepares them for successfully pursuing courses in which they wish to be enrolled." The University did not specifically prohibit admission directly into the first year of the medical course, but it "urges every prospective student of medicine to take two years at least of academic training before he begins the first year of the medical course." Again, "The University does not encourage students in the policy of beginning the first year of medical work before they have completed the first and second years of the B.A. curriculum with which the medical work is associated." Reasons:

1) "The University of North Dakota wishes every student who enters her departments to win the highest possible rank in his subsequent professional work. The person who is best prepared, all things being equal, will win the highest position in his profession.
2) The physician is often charged with the great responsibility of protecting and saving human life. He ought, therefore, to be fully trained, and cultured before he enters his professional career."

The University apparently did not wish to make a strict requirement of the first and second year curriculum as established for students taking the complete 4 years B.A. course at

UND College of Medicine. The following statement appears 9 times in the Bulletin and provides for a possible exception to the recommendations above:

"In view of the fact that some medical colleges accept first year students without previous academic training, the University of North Dakota will permit students to enter the first year of the medical course upon presentation of satisfactory evidence that they have completed the required preparatory subjects."

It should be recalled that 1905 was a "pre-Flexner" time and the University may have been concerned with its competitive position with the many "proprietary" medical schools which existed in the U.S. at that time. It is, of course, not possible now to know whether any students tried to use this option for admission to the Medical College.

After having listed the courses required to be taken in the Medical College, it might be appropriate now to take a brief look at each of these courses so that we can better understand the uniqueness of the curriculum at UND. The first thing that struck this author in examining the proposed curriculum for 1905 was the scheduling and the terminology used for it. It appears that in the first and second year, the pre-basic science years, the school year was divided into what we now call quarters, but which was then called the Fall, Winter, and Spring "Terms." In the second two years, the Basic Medical science years of the College, the academic year was divided into a first and second "semester." A further distinction between the first two years and the second two years is the fact that in the former, classes seem to have been taught on only 5 days per week, Tuesday through Saturday. In the second two years, however, classes seem to have been taught on 6 days of each week, Monday through Saturday. There is no record of what happened to the Mondays of the first two years. Apparently, the Roman Numerals on the schedule represent hours of the academic

day and if this is the case, it can be seen that during the first of the four years, seven hours per day seems to be de rigueur, while in the second year, 8 hours was assigned on most days of the week. In the second and third years the Roman numeral IX occurs frequently suggesting that students were in class 9 hours per day (less, perhaps, the VI period which seems not assigned and might have been available for lunch).

Course Work - Chemistry

In examining the Bulletin's description of the course work I think that one should start with chemistry. Judging by the course description the chemistry curriculum for medicine was formed into a continuum, starting with general chemistry and ending in the last of the four years with toxicology. Some brief abstracted excerpts from the catalogue descriptions of the various components of the chemistry continuum follow:

Course I appeared to be General Chemistry and consisted of 4 hours per week in the first year. The course consisted of experiments, recitations, and talks on general chemistry with practical laboratory work.

Course II in the second year consisted of qualitative analysis in the first third of the year and quantitative analysis in the last two thirds. Eight hours per week were spent on Course II, mostly in laboratory.

Course III was in the third year of the program which was the first year of the Medical Course. Eight hours per week were divided between organic and analytical chemistry. The work was mostly in the laboratory.

Course IV was in the fourth and final year of the program and consisted of 8 hours per week devoted to Physiological Chemistry, Urine Analysis, and Toxicology.

English

To return to the first year, the course in English, which used 5 hours per week was described as follows:

lst term: Advanced rhetoric, exposition and argument

2nd term: Description and narration

3rd term: Studies in literary form and interpretation

Biology

Courses under the heading of Biology were taken during the first and second years. Apparently Biology I was considered the Secondary School course in Botany. Biology II, 8 hours per week, is described as follows: First Semester - Fungi, Second Semester, Algae, mosses, and ferns. Biology III and IV are not listed, nor is there a topic assigned to the third term of the first year. Biology V, 8 hours per week is assigned to the second year under the heading Zoology:

First term - Protoplasm, cells, and tissues

Second term - Invertebrate Zoology

Third term - Vertebrate Zoology - The course consisted of lectures and laboratory work throughout the year.

French

French I, assigned to the first year was described as an Elementary course with grammar and easy sight reading. Five hours per week were spent in this course. French II, Middle French, consisted of a study of the subjunctive mood, composition and sight reading. This portion of the course was taught in the second year, four hours per week. French was, of course, the "Language of Diplomacy" at this time and many wished it to be the "universal

language" of science as well. That designation ultimately fell to English, however.

German

German II, four hours per week was scheduled during the first year. Nothing is said of German I in the schedule, but in the course descriptions it is described as Elements of the German Language, parts I and II, with easy sight reading and practice in conversation. Apparently it, also, was taught in the first year. German II, Middle German, consisted of written exercises and sight reading. It is important to realize that a great quantity of Biological and Medical literature was emanating from Germany at this time and most of it was in German Journals in the German Language. The Japanese were also to begin scientific publications in German.

Philosophy

Philosophy I was taught for 4 hours per week during the second year. It was described as:

First term: Logic, Inductive and Deductive

Second term: Psychology

Third term: Ethics

Mathematics

Mathematics was also taught in the second year for four hours per week. The course was described as:

First term - Higher Algebra

Second term - Trigonometry

Third term - Analytical Geometry

Anatomy

Since Histology is described separately, it is apparent that the term "Anatomy" refers to Gross Anatomy, although the course is broken down into the following sub-headings:

1) Osteology - Lectures and demonstrations

2) Joints and ligaments - Lectures and demonstrations

3) Gross Anatomy - "After completing courses I and 2, the student is given a subject for dissection. This is done under the supervision of his instructor, though he must depend on himself for the results required. In this work, the muscles, blood supply, and nerves of the whole body are studied in separate and related parts. Throughout this work, special attention is given to relationship of various structures and their surgical importance.

Textbooks assigned for the course in Anatomy were:

1) Gray's Revised Textbook of Anatomy

2) Morris' Textbook of Anatomy

3) Quain's Textbook of Anatomy

Reference books assigned:

1) Van Bardeleben's Handbuch der Anatomie

2) Henle's Anatomie des Menschen 2

3) Edinger's Anatomy

Under the course description the following statement is made: "The Anatomical Law of North Dakota furnishes abundance of material for the work of this department in the

College of Medicine. Each student makes a complete and careful dissection of every part of the body during his course."

"The laboratory is well lighted and ventilated. When there are mixed classes in dissection, provision is made for separate laboratory hours for the men and the woman. The laboratory work is made the basis for the study of anatomy. This study continues for two years, and has the most exacting attention of instructors and students in order that the foundation of a medical education may be established. Following thorough and careful dissections of every portion of the body are lectures, reference readings and searching quizzes at frequent intervals. It is believed that the combination of the student's individual work in the laboratory, the dissection of the different texts and the instructors' discussions of the special points of the subject will secure a thorough presentation of this fundamental subject."

Students will have free access to the museum of osteological and other material and the free use of the reference library of this department. They are encouraged to do as much extra work as possible." The Anatomy Course was taught over all four semesters of the two years of the Medical Course as follows: Semester 1, 15 hours, Semester 2, 10 hours, Semester 3, 15 hours, Semester 4, 15 hours.

In addition, a course in "Morbid Anatomy" was taught in the fourth semester for 3 hours per week, but there is no description for it.

Histology

This course was introduced with "a series of exercises in killing, hardening, imbedding, sectioning, and staining various animal tissues and noting their relationships. Following this, the histogenesis and structure of organs is carefully considered." An important

statement is found in the description of the Histology course: "In this course a thorough and exacting study of the gross and microscopical structure of the central nervous system is made." Apparently, what later became the subdiscipline of Neuroanatomy was contained within the Histology course when the Medical College first opened.

The course description promises demonstrations from models and gross material and the use of charts and figures to make the various portions of the work clear. Sample material was to be provided for dissection and section so that each student has opportunity to familiarize himself with "both the gross and minute phases of tissues and organs."

Textbooks:

1) Bohm-Davidoff-Huber's.Histology

2) Piersol's Histology

3) Szymonowicz-MacCullum's Histology

4) Quain's Splanchnology

5) Barker's Nervous System

6) Van Gehuchten's System Nerveux

Histology was taught for 12 hours per week in the first semester of the first year of the medical course. There is no breakdown of time and subject matter distribution available.

Physics

Physics I was taught for 4 hours per week in the first semester of the 3rd year. The course description states that this topic, "as taught in high schools and academies, does not furnish a working knowledge of electricity --- while the present development in electrotherapeutics, and the necessity of various kinds of electrical machinery in the fully

equipped office or hospital, demands that the physician have a thorough training in the fundamental laws of electricity." The subject was taught by "textbook, by lecture room demonstration, and by laboratory experiments. The work is planned so as to emphasize the applications of electricity in medicine."

Embryology

This course was apparently taught by Brannon, who also taught Bacteriology, and consisted of lectures, recitations, and laboratory work comprising an examination of spermatozoa, ova, blastula, and gastrula of lower and higher animals. "The gastrula theory and the differentiation of tissues in mammalian embryos are considered in detail. Each student follows the development of the frog and chick embryos --- and --- from there and human embryos he makes dissections, sections, and permanent microscopical preparations."

Textbooks:

1) McMurrich, The Development of the Human Body

2) Heisler, Textbook of Embryology

3) Minot, Human Embryology

The course was taught during 12 hours per week during the second semester of the first Medical Course year.

Physiology

Physiology was taught during 12 hours per week in the second semester of the first Medical Course year or year number 3 of the total curriculum, and for 14 hours per week in semester three. It was apparently taught by McDonald since he was listed in the faculty roster as teaching both anatomy and physiology. The experimental work was described as

being based upon vertebrate animals and, when permissible, upon man. The course was subdivided into:

1) General Physiology consisting of "Lectures, textbooks, demonstrations, and quizzes upon the physiology of muscle, nerve, organs of circulation, respiration, secretion and digestion."

2) Laboratory work in Physiology consisting of "experiments in circulation of blood, contraction of muscles, secretion of various glands, elimination of wastes, growth, response to stimuli, and coordination of bodily action."

Frequent quizzes were to follow all of this work.

Bacteriology

This course was taught for 7 hours per week in the first semester of the last year of the program. It was described as "a careful study of the biology of the bacterial cell, noting its relation to fermentation, putrefaction, and production of disease. Infection, prevention of contagious disease, natural and acquired immunity are investigated and discussed. The methods and principals of sterilization, and the value of various germicides are considered. The work is concluded by making a bacteriological study of various drinking waters, their filtration and other means of purification, and a study of sanitation in connection with dwellings, hospitals, foods, and clothing.

Hygiene

Hygiene was taught for three hours a week during the first semester of the

final year. It was described as a "study of ventilation, securing pure water and food, and the proper disposal of waste matter and sewage." The transmission and prevention of disease, quarantine and public sanitation" were also studied as were the benefits of proper clothing, bathing, and exercise.

Pathology

Pathology was also taught for 15 hours per week in the last semester of the program by the use of lectures, recitations, and laboratory work. It was described as a course in general pathology consisting of "fixing, hardening, and making microscopical preparations of pathological tissues of the body, and in the minute study of various forms of tumors and other pathological tissues."

Surgery

This subject was taught for 7 hours per week in the last semester of the program. It was described as including " a study of the Principles of Surgery, and it is based upon demonstrations in hospital practice, lectures, textbooks, and quizzes."

Physical Diagnosis

This course is listed, under the title "Medicine" in the catalogue and was taught for three hours per week in the last semester of the program. The work consisted of "demonstrations and practical exercises in taking the history of diseases of the chest, abdomen, and nervous system. The hospital work is associated with lectures and reference studies from assigned authors."

Grading and Credits

Students at the opening of the Medical College in 1905 were graded by the letters A, B,

C, and D. The student was to receive credit for all work completed with the rank of D or better provided that his credits of D do not exceed an average of three per term during the first two years and two per term during the last two years.

The College of Medicine's final statement on credits:

"The University will confer the B.A. degree upon those who complete the four years' curriculum detailed above. It will also give a certificate showing that the holder has completed the first and second years work of the medical course. This certificate will be accepted by the medical colleges with which the University is articulated, and the candidate for further medical work will be permitted to enter their junior year."

Library

According to Geiger, the medical library was started with a hundred volumes donated by a Judge Cochrane and three hundred books and magazines on medical subjects contributed by Orin Libby, professor of history.

Societies

As a resource for the fledgling Medical College the University Bulletin of 1905 cites the presence in Grand Forks of able men "who have enjoyed exceptional training in the best American and European schools" and that "these gentlemen have organized a strong medical society" where "there are presented papers containing results of personal work and a review of similar work by other members of the medical profession."

Fees

The last entry in the Medical College division of the University Bulletin for 1905 relates to

fees. It states that "no tuition is charged in the College of Medicine," An annual fee of $50.00 is charged. This is payable in installments of $25.00 at the beginning of the first and second semesters of the third and fourth years. This annual fee is charged for incidental library, laboratory, and dissection expenses. No other charge is made by the University during the last two years of this curriculum. During the first two years of this curriculum a student's total annual fees do not exceed $15.00. He is charged the usual fees only of students in any of the other colleges taking the work prescribed in the two years of this department."

"UND College of Med - In Progress"

Now we have provided a brief description of the following components of the new College of Medicine at the University of North Dakota:

1) The physical facilities

2) The faculty

3) The curriculum

4) The medical library

5) The entering students insofar as we can determine by entry requirements

It would surely be of interest to see how the school managed in its pioneer years. In 1943, on the 60th anniversary of UND, a history of the University was written by one E.F. Chandler of the College of Engineering in which he states that "the first nominal enrollment in college of medicine for the year 1905 and 06 lists only three students, though there were numerous freshmen and sophomores with intentions turned in that direction and following the advice of the medical school head in their enrollment, but whose work did not yet differentiate them periodically from other College of Arts students."

"The next year there were a dozen; then twenty; then thirty; and the first certificate for completion of the special medical two years included in the B.A. Course was given in 1910." It was the only one given that year. According to the 1910 catalogue, the name of this student was Sverre Oftedal, although Geiger states that this award was made in June 1909. In 1911, another single certificate was presented to one Harry G. Knapp. In 1912, four certificates were awarded, four again in 1913 and four in 1914.

In 1915 the Medical College began to award degrees, either Bachelor of Arts of Bachelor of Science, along with its Certificate. In 1917, the name of the certificate was changed from "Special Certificate for the Completion of Two Years of Medical Work" to "Special Certificate in Medicine." Two Bachelor of Arts degrees were awarded in 1915; one to Charles Ray Tompkins and the other to Solveig S. Thordarson. The given name of the latter graduate indicates that she was probably the first female graduate of the Medical College.

The year 1916 saw the award of four more degrees, and in 1917 there were eight, and 13 in 1918, but only 6 in 1919, perhaps reflecting the effects of World War I. In 1920, the graduate roster was up to eight, nine in 1921 including the first Bachelor of Science degree and a Bachelor of Arts to a Ruth Marion Mahon, perhaps the second female graduate, and to a Min Hin Li, perhaps the first graduate of oriental ancestry. In 1922 there were 15 degrees awarded including one to a Wilhelmina Smith Scott. The following table will indicate the growth trends in the School of Medicine (as it was now called) over some of its early years:

Degrees Awarded

1923 - 18

1924 - 19

1925 - 12

1926 - 15

1927 - 17

1928 - 21

1929 - 22

1930 - 30

By 1930 there was a total of 61 men and 2 women enrolled in the School of Medicine in a total of 2,679 students enrolled in the entire University. The total roster of students enrolled in the School of Medicine only doubled from 1930 to recent years while the total enrollment of the university quadrupled to over 10,000.

During the early years of the Medical College in which the degrees and certificates cited above were awarded, many changes were occurring; changes in administration, faculty, physical plant, size of student rosters, etc., and indeed changes are occurring at a rapid pace even while this is written and the School of Medicine is in the final stages of its transition to a full four year curriculum. Only a brief mention of these changes will be possible here. Further information on them can be found in other histories being prepared at this time.

North Dakota Anatomy Law

First, in point of time was the enactment of a law by the legislature called the North Dakota Anatomy Law which made human cadavers available for dissection. This law was enacted almost simultaneously with the founding of the College of Medicine, although provision for such a law had already been written into the state constitution. This law and its later amendments have been responsible for enabling the citizens of North Dakota to make their

remains available to the School of Medicine for purposes of physician training.

North Dakota Public Health Laboratory

The next event of importance after founding the Medical Curriculum in 1905 was the establishment in 1907 of the Public Health Laboratory which was affiliated with the Medical College. Its effects on the College were probably numerous, but a very important one was to strengthen the medical faculty since the Director of the new laboratory, Gustav Ruediger, M.D., Ph.D., was to become not only the State Bacteriologist but also Professor of Bacteriology and Pathology at the College. He remained with the College until 1914 and was its second full time faculty member, although Brannon became third, also in 1907.

Accreditation of the School of Medicine

The next important event occurred in 1907 also, when the Association of American Medical Schools accredited the new College, making it the first division of the University to win formal accreditation. It is of interest to note that in May of 1909 the College successfully passed the inspection of Dr. Abraham Flexner who was at that time generating his famous Flexner report of 1910 after surveying Medical Education in the U.S. for the Carnegie Foundation for the Advancement of Teaching. Geiger cites some interesting data when he points out that of the 150 medical schools in the U.S. at the time, UND was one of only 16 requiring as much as two years of college work for entrance. Geiger's quotation of the Flexner Report indicates that its author was very favorably impressed with the requirement of college work for admission. Very quickly UND moved to establish a firm affiliation with a school having clinical training facilities and this was with the Rush Medical College in Chicago. Indeed, the first graduate of the UND program, Sverre Oftedal cited above, finished his medical

training at Rush, and returned to North Dakota where he practiced for many years in Fargo. Other affiliations were established in timely fashion so that graduates of the UND College were readily accepted at other institutions.

The Graduate School

The Graduate School was to come to have more and more effect on the School of Medicine over the years as medical faculty increased in numbers and began to undertake research programs. The history of this division of the University cites the year 1895 as that in which the first Master's degree was awarded, the first Ph.D. in 1914. In 1980, 250 Master's degrees and 52 doctorates were awarded. The faculty in the Basic Medical Science Departments of the School of Medicine began to accept students for the Master's and Doctoral degrees in Anatomy, Physiology, Biochemistry, and Microbiology (formerly Bacteriology) in 1948. The participation of the Department of Anatomy in this program will be described below, but for now, it can be reported that Anatomy awarded its first Master of Science Degree to Walter B. Eidbo in 1953.

School of Nursing

The University offered a Course for Nurses in 1909 and continued it "sporadically" for 6 years. The Baccalaureate program was started in a new Division of Nursing in 1949 with the first degrees awarded in 1951. In 1959, the Division of Nursing became the College of Nursing, and at this writing a Master's program is being inaugurated. The establishment of the College of Nursing rounded out the "Medical Center" program and its effect on the Anatomy Department was largely one of using this Department as a teaching resource.

Other events which had either a direct or indirect effect on the Anatomy Department

over the years were:

Ireland Research Laboratory established in 1953

Laboratory Services Division of the State Health Dept.

Medical Center Rehabilitation Hospital

Medical Science Building in 1949

USDA Human Nutrition Research Center

Library expansion

Rationale for Listing Faculty of Other Departments

The College of Medicine and later, School of Medicine, consisted of its faculty and students located in a physical facility which was called the School of Medicine. Individual students come through such an institution in a more or less steady stream and their names often get lost over time and so the student component of an educational institution takes on the designation of "the student body." Faculty members are usually more permanent and so their names become recorded in documents which survive the occasional space-making, house-cleaning operations to which Universities, as other institutions, are subject. Further, faculty members often leave long-lasting marks on an academic institution by nature of their influence on policies, teaching ability, research contributions, etc.

Where possible, medical students' names have been included in this document either in the text by nature of some especially noteworthy characteristic or in one of the appendices where available student rosters have been recorded. The graduate program in medical basic science departments is more recent and so a fairly complete list of graduate students in Anatomy has been provided both in the text and in the appendices. Also included are the titles

of their Theses or Dissertations as well as their faculty committees.

Faculty names are recorded in University Bulletins and Catalogues and are reported in this document as well as could be. Study of such faculty lists occasionally stumbled on problems created by high faculty turnover rates, absence of designation of teaching responsibilities, and the use of student names on faculty rosters but, in so far as possible, an accurate account is presented.

During preparation of this document, it occurred to this author that inclusion of only Anatomy Department faculty would present a rather incomplete view of the department and its role in School of Medicine for the following reasons:

1) If such an approach were used for all individual departments, some faculty would have to be left out because the teaching of subjects which are now identified by department was often done by members of another department. This was true from the first when McDonald, the Anatomist, taught Physiology also.

2) The inclusion of faculty rosters of other departments in this document places Anatomy in a more accurate perspective with relation to size of School of Medicine faculty as well as diversity of course offerings for the entire School over its history.

3) The existence of high faculty turnover rates concurrently with another long-term stable faculty group is an interesting phenomenon and might be peculiar to this School only in a quantitative way rather than qualitatively. The reasons for these phenomena cannot be known at this point and the reader is free

to speculate on their causes. In doing so, however, consideration should be given to such unique characteristics as the remoteness of the region, the agricultural base of the economy, world wars, economic depressions, and North Dakota politics.

In any case, for these and other reasons and to the extent possible, faculty rosters and changes therein are included for all Basic Science Departments up until very recent years.

1905

Faculty and Courses Taught by the Anatomy Department

Titles for Faculty at the founding of the College of Medicine:

1) Dean of Medicine

2) Professor

3) Assistant Professor

4) Lecturer

5) Demonstrator

1905 - The first year of the new College of Medicine

Melvin A. Brannon, M.A., Dean, taught Embryology and Bacteriology Archie Leete McDonald, M.D., taught Anatomy and Physiology

N. Johanna Kildahl, M.A., taught Histology

The time allotted to these courses was described above. It should be recalled that several clinical lecturers were functioning in the Medical curriculum, but it is not known to what extent they contributed to the Anatomy courses. It is apparent that there was no subdivision of the medical faculty into departments as is the case today. It is known that

McDonald was the only full time anatomist. It has not been possible to determine the title of Kildahl; who apparently stayed only one year.

1906

Brannon - Embryology

McDonald - Anatomy and Physiology

--- Histology
There was apparently no change in the curriculum this year, but there is a blank place for the histologist.

1907

McDonald - Anatomy and Physiology

Robert T. Young, Ph.D. - Histology and Embryology

H.G. Woutat - Lecturer - Probably not yet Radiology

Young was appointed this year to the department of biology and apparently assumed the-teaching of Medical Histology, replacing Kildahl, and Embryology, relieving Brannon of this duty. Brannon apparently became a full time Professor in the Medical College as well as Dean of Medicine. Woutat appears on the scene this year and probably lectured in Medical disciplines other than radiology since this medical procedure had not yet arrived in North Dakota. A few years later he started to lecture in Radiology as he did for many years after and as did his son Phillip Woutat for many more years until he retired from his lectureship and full time practice in 1978.

This year, the Anatomy course was described in the Bulletin as broken down into seven units (3 lecture courses and 4 laboratory courses), three of General Anatomy, then Course IV treated Osteology and Syndesmology, Course V, Myology, Angiology and Splanchnology, Course

VI was Neurology (this year being taught in the equivalent of the Gross Anatomy course instead of Histology) and Course VII Review. Thus Gross Anatomy was originally taught by systems, as was the custom in European Schools of Medicine. Total time allotted to the Anatomy course in 1907 was 968 hours.

The word "Department" is first encountered in the Bulletin for this year: The description for the Anatomy course explains that "the work is under the direct supervision of the head of the department . . ." who was presumably McDonald. On the next page, however, under the heading Physiology, A.L. McDonald, A.B., M.D., is the statement: "This department takes up a systematic study of the functions of the human body, its tissues and organs." There is no evidence of any administrative separation of any of the teaching programs in the Medical College at this stage.

Histology and Embryology were grouped together in the Bulletin, both courses being taught by the newly appointed Young. The grouping of these two courses has survived to this writing. Histology was divided into Course I, Histology which utilized 2 hours of quiz and 10 hours of laboratory for one-half year "and Course II, Histological Technique which consumed" 4 hours of laboratory work for one-half year.

Course III was titled Embryology and was scheduled as "2 hours of quiz, 10 hours laboratory for one half-year." Course IV Embryological Technique was described as a continuation of Course III and used 4 hours of laboratory for 36 one-half year.

A note of interest, 1907 was the year that the course in Pharmacology and Materia Medica was inaugurated by Taylor, the M.D. lecturer who had taught Pathology the year before. The course would later be joined by Caldwell and then become part of a joint

Physiology-Pharmacology department, which continued until recent years.

An examination of the course descriptions and time allotments in the Bulletin for this year suggests that a well-planned curriculum was beginning to emerge, although full time faculty were limited to McDonald in the Medical College and Young in the Biology department until Brannon and Ruediger received full-time appointments. This year announced the formation of the "von Haller Society" which was "organized under the auspices of the Department of Anatomy and Physiology." In the description of this group it is stated that "Bi-weekly meetings are held at which papers are read discussing the practical and experimental sides of Anatomy and Physiology as well as allied fields of science. The object of the Society is to promote an intimate acquaintance with research work, its practical application, and its literature. Membership is open to all students enrolled in the Medical Department who are taking up work in either Anatomy or Physiology." Apparently the Society was named for Albrecht von Haller, the Swiss physiologist who lived from 1708 to 1777 and seems to have been an anatomist as well.

A series of special lectures were announced in this year's Bulletin described as follows: "Believing it would have cultural, educational, and professional value, arrangements have been made with a number of physicians of Grand Forks for a series of special lectures on various Medical subjects, such as the History of Medicine, Ethics of Medicine, Economics of Medicine, some Specialties of Medicine and various other important subjects. Suitable hours will be arranged subject to the convenience of the lecturers and the students." The student roster lists 8 of the University's 320 students enrolled in the medical curriculum but it is not possible to determine how many were enrolled outside the Medical College but doing

work preparatory for such enrollment. One student was enrolled as doing preparatory work for the Medical College. A curious notation is pencilled into the student roster on page 197 of the library copy of The Bulletin indicating that one Milton J. Smith from Chicago, Illinois was the first (only) black student enrolled in the Medical College.

1908

Very little was changed in this year with the exception of a designated instructor for Physiology. This space was left blank in the faculty roster and although the announcement of the Anatomy course stands under the heading of McDonald, no instructor heads the announcement of the Physiology course. It is not known who taught the physiology course that year or if it was taught. It may be that the College was attempting to find a physiologist.

1909

This year saw the announcement of George H. Caldwell, M.D., installed as the instructor in Physiology so that apparently McDonald was now able to concentrate on Anatomy. Caldwell also announced a course in physiological chemistry for this year. There is an announcement also of formation of "The Medical Club," and "organization of medical students and members of the Medical College Faculty. Monthly evening meetings are held at which special lectures are given. Opportunity for general discussion is given at the close of the lecture. A social hour follows the literary program. This feature has great value because it gives an opportunity for developing comradeship among the students and teachers." No mention is made this year of the von Haller Society.

1910

The Faculty Roster was the same as last year except for some changes in the Chemistry Department. Caldwell joined Taylor's Course in Pharmacology and Materia Media and also established a course in Experimental Physiology while continuing his course in physiological chemistry.

The University Bulletin for this year announces the award of The Special Two Year's Medical Certificate to Sverre Oftedal, the first graduate of the new College of Medicine.

1911

There are no changes in the faculty roster or curriculum for this year. McDonald, Young, and Woutat taught the anatomical courses. Melvin Brannon, Dean of Medicine, went on leave of absence this academic year, 1911-12 and transferred the Dean's responsibility to Harley E. French, M.D. at some point during this year.

1912

This is the Academic year that McDonald left and the year following the arrival of Harley E. French, M.D., as Professor of Anatomy and as Dean of Medicine, replacing Brannon in the latter post. French had a 1902 B.A. from Washington State College, and M.D. from Northwestern in 1907, and an M.S. from Chicago in 1911. French had been at the University of South Dakota from 1907 until 1911 and the years until 1912 and his arrival at UND were pretty well filled so that he probably never practiced medicine beyond his training years. French had considerable influence on the UND School of Medicine as it was now called and information on this will be available from the history of the School. His influence on the Department of Anatomy will be discussed. It appears that one of French's first acts was to reorganize the Anatomy and Histology courses. McDonald had gone to Duluth leaving a free

hand for French who, in addition to teaching the gross anatomy course and its neuroanatomy component, handled the histology course also. Young, the Assistant Professor of Zoology, with his appointment in the Biology Department, was left with the Embryology course. The courses taught by French were titled:

1.	Histology	7 credits
2.	Microscopic Neurology	2 credits
3.	Gross Anatomy	10 credits
4.	Gross Anatomy (cont.)	5 credits
5.	Applied Anatomy	4 credits

6. and 7. advanced courses, credit to be arranged.

In addition to the M.D. Lecturers Eggers, Taylor, and Wheeler, the 1912 Bulletin lists the following physicians as having given "special lectures before the classes of the School of Medicine in the year 1911-12":

R.D. Campbell, M.D., Grand Forks

C.S. Crane, M.D., Grand Forks

J. Grassick, M.D., Grand Forks, Secretary of the State Board of Health H.H. Healy, M.D., Grand Forks

Vincent Swale, Ph.D., M.D., F.R.S.S., Winnipeg, Professor of Physiology, University of Minnesota

H.G. Woutat, M.D., Grand Forks

This year, Assistant Professor Henry LeDaum offered two special courses to the School of Medicine: Scientific French, two credits, "Introduction to the French of current scientific periodicals and technical works," and French Scientists, two credits, "Technical works of

scientists and philosophers; selected articles from magazines and journals." A note at the bottom of the page indicates that the latter course was not given in 1912-13. Neither course is listed for 1913, and the faculty roster for that year states that Professor le Daum died on March 10, 1913. The French language was, of course, frequently used in science in those days and the abortive attempt to familiarize students of Medicine with scientific French may have been an idea of the New Professor of Anatomy Harley French. Professor French was known to be a "classical scholar" who could use the Greek language also.

French apparently rewrote the Anatomy department course descriptions which preceded the course outlines. He describes histology as being "conducted in a large well-lighted laboratory equipped with Leitz, and Bausch and Lomb microscopes, Abbe camera lucidas, Lillie paraffin bath, Minot rotary and Bausch and Lomb perfection sliding microtomes, and the requisite glassware, reagents, etc." Gross anatomy is described as being done in "a large room on the top floor of Science Hall, well lighted, cheerful, and exclusive. Anatomical material is abundant. The department is well-supplied with models, and bony specimens. A museum of dissections, cross sections, and joint specimens has been started. The library contains many valuable atlases, monographs, texts, and current magazines. In this year French reduced the number of textbooks from the long list of required and recommended texts of the year 1911 to only two, Bailey's Textbook of Histology and either Cunningham's, Peirsol's, or Gray's Textbook of Anatomy.

This year, a separate course in Pharmacology was announced for the first time and taught by Caldwell. The medical student course in Materia Medica and prescription writing was taught by the M.D. lecturer, Taylor. There was a description of the library this year also: "The library of the School of Medicine is on the second floor of Science Hall, sharing room

and attendant with the library of the Department of Biology. It is open from 11 A.M. to 6 P.M. daily. The several hundred volumes represent carefully selected recent treatises only, and the twenty-eight current magazines are among the best."

1913

A new name appears on the faculty roster of the School of Medicine this year, Hjorleifur T. Kristjansen, B.S., M.D., Assistant Professor of Bacteriology and Pathology but his name is not listed with any of the course announcements. All Bacteriology, Pathology, Public Health and Sanitation, and Laboratory Diagnosis courses are still listed as being taught by Professor Ruediger of the Public Health Laboratory. A Demonstrator in Anatomy, Alfred Dean, M.D., was appointed this year, but the level of his participation in the Anatomy courses is not known. Harley French is listed as teaching all courses in Anatomy. Melvin Brannon, Professor of Biology and former Dean of Medicine, is listed as having the Ph.D. degree this year.

In this year 1913, the following statement appears in the Bulletin: "Students who are able to spend the additional time to take three or even four years of work in the College of Liberal Arts before beginning their work in medicine are urged to do so, but attention is called in such case to the required courses in science."

1914

Melvin A. Brannon, Ph.D., Professor of Biology and former Dean of Medicine resigned this year to assume the presidency of University of Ohio. Gustav F. Ruediger, M.D., Ph.D., Professor of Bacteriology and Pathology and Director of the Public Health Laboratory also

resigned this year to take what was said to be a better position. His teaching was taken up by Leverett Dale Bristol, A.B., M.D., the new Professor of Bacteriology and Pathology, as was the Directorship of the Public Health Laboratory. Kristjansen's name is missing from the roster and the space for the Assistant Professor of Pathology left blank. A Norma E. Pfeiffer, B.S., appears as an Instructor in Biology. She is listed in the course announcements as Dr. Pfeiffer and is listed as a Ph.D. in the 1915 Bulletin and she may have been the second female member of the College of Medicine Faculty. Charles E. King, Ph.D., M.S., appears as Assistant Professor of Physiology, teaching the Physiology and Pharmacology Courses. Caldwell's name is missing from the roster. Robert T. Young was apparently promoted to Professor of Zoology this year.

1915

The faculty this year lists John W. Cox, M.D., as Assistant Professor of Pathology teaching Pathology and leaving Bacteriology and Hygiene to Bristol. No other significant changes from 1914 are noted.

1916

Norma Pfeiffer is now Assistant Professor of Botany. This year among the M.D. Lecturers, two, A.F. Bratrud and Alfred Dean are designated as "Lecturer in Course in Embalming." There is an announcement at the end of the School of Medicine division of the Bulletin that: "At the request of the North Dakota Funeral Directors Association and in cooperation with that body, a short course in embalming is offered at the University. The part conducted by the School of Medicine consists of lectures, demonstrations, and laboratory exercises in anatomy, bacteriology, hygiene, and vital statistics; and chemistry and physiology. Circulars of information may be had upon application."

Prizes are announced this year for the first time as follows: "In addition to the prizes of

a more general nature set forth on page 57 there is a special prize of 25 dollars available in the School of Medicine. The Grand Forks District Medical Society offers a yearly prize of twenty-five dollars to the student who maintains the highest scholarship in the two years of medical work offered at the University.

In this year, we find the first use of the word research as part of a course. Physiology 9 and 10 supervised by "Mr. King" is described thus: "Advanced work and research. The department encourages original investigation 50 in physiology, biochemistry and pharmacology on the part of those properly qualified. The credit given will depend upon the amount and quality of work accomplished." No research opportunities are announced for any other "department."

In this year (1916) also we see for the first time the title of Associate Professor in the case of Bartholemew J. Spence, Ph.D. of Physics.

1917

Faculty Roster is missing from the Medical College Bulletin for this year. The xerox copy places page 343 opposite page 334 with evidence of removed pages in between. Apparently, however, John W. Cox, M.D., Assistant Professor of Pathology, has replaced Bristol as Director of the State Public Health Laboratory and assumed his teaching duties also with the help of George E. Richardson, B.A. as Instructor in Bacteriology. It appears that the remainder of the faculty was the same as in 1916.

The course in embalming was offered again in 1917 but not in 1918 or beyond.

1918

This year sees a new appointment as Associate Professor to John W. Todd, Ph.D. of "Psychology: Physiological Psychology." A George E. Richardson, B.A., is also listed this year as an instructor in Bacteriology and Pathology although a footnote indicates that he was in war service this year. George Edward Richardson was listed as a 1917 graduate of the School of Medicine. He was apparently replaced by Edward J. Johnson, B.A., Instructor in Bacteriology and Pathology. Edward Julius Johnson is listed as a graduate of School of Medicine this year. There is a blank spot before the title: "Instructor in Anatomy and Physiology" suggesting that Dean French was seeking some help. Perhaps the idea was abandoned since the next year saw neither the blank spot filled nor even the blank spot. The name of Clarence B. Larson, however, is listed as Student Assistant in Anatomy. He was to graduate from School of Medicine the next year, 1919.

Laboratory animal quarters are first mentioned this year, although it is possible that they were described in the missing part of the 1917 Bulletin. In 1918 animals are described as being "well housed in rooms in the attic and in a detached building."

Appearing this year also is a statement that "In general it may be said that while neither room nor equipment is extensive, the means are at hand for thorough instruction in all of the laboratory medical sciences."

An elective course in Evolution and Heredity for four credits is being taught for the the first time by Young of Biology.

Perhaps for the first time, in 1918 there is an indication of a graduate program in the School of Medicine. It is stated that: "Graduate students may secure the Master's degree by

specializing in the medical sciences and fulfilling the requirements of the University for this degree." No record could be found of any such students, however.

1919

In this year both Cox and Johnson (the former student) of the Bacteriology and Pathology programs are missing from the roster. Alfred G. Long, M.D., was appointed Assistant Professor of Bacteriology and Pathology and Acting Director of the Public Health Laboratories. Long apparently taught the Pathology Course but the Bacteriology course announcements have a blank space where the instructor's name should be. Richardson (another recent graduate) is also gone as is the student assistant in anatomy, Larson, who graduated this year.

The library is described as now having 1,600 bound volumes and 60 current scientific magazines this year.

1920

This year King is no longer listed under Physiology, nor are there any course descriptions for physiology. The new Professor of Physiology and Pharmacology was Arthur D. Bush, B.S., M.D., and he may have arrived too late to write the course descriptions. It appears that French got a little help, at least in Anatomy, in the form of a co-instructor Benjamin J. Clawson, Ph.D., M.D., "Professor of Pathology: Bacteriology and Pathology." ~sic Clawson was appointed full professor but Long, the assistant professor, retained his Acting Directorship of the Public Health Lab. Clawson was to co-instruct in the course in Histology and Organology which the histology course came to be called this year.

The Anatomy and Physiology teaching time was distributed as follows over

this year:

	Lecture	Laboratory	Total
Anatomy			
Gross	85	350	435
Microscopic	34	150	184
Neurology	30	70	100
Topographic	20	50	70
TOTAL			789

	Lecture	Laboratory	Total
Physiology			
Physiology	100	200	300
Physiological Psychology	17	50	67
Physiological Chemistry	34	150	184
TOTAL			551

Embryology was still a separate course taught by Young. Its total hours are not listed but it was scheduled for five credits in the first semester of the third year (first medical year).

Students in the first year had Saturday and Sunday free except in the second semester when they had "Anat." at 0800, 0900, and 1000 hours in the first semester and pharmacology at 1100 in the second semester.

Fees were $25/year for the medical curriculum for residents of the state, and $37.50 for

non-residents.

Pathology and Bacteriology have no course descriptions this year, but apparently Clawson taught them because he is listed as having taught them in the following year, 1921.

1921

Clawson was still helping French in histology and organology and brief course descriptions had been written for Physiology, Pharmacology, Bacteriology and Pathology. Two more courses in Research in Physiology and Research in Pharmacology were lead by Bush for "students who have shown special aptitude in the subject."

Fees were raised this year in the form of "special laboratory fees" amounting to one dollar for each credit hour. The total fees in the medical years amount to about $85 for residents and $97.50 for non-residents.

An additional annual prize of $25.00 was commenced this year by Dr. John H. Moore of Grand Forks. The prize is for "the best dissection of the human head."

1922

In this year, French got an anatomist to help. Clawson's name is missing from the roster. John G. Sinclair, S.B. was appointed Assistant Professor of Anatomy and Physiology. (It is assumed that his degree was a Baccalaureate in Science). He taught the Histology and Organology Course and acted as co-instructor with French in the Neurology and Topographical Anatomy Courses. He also is listed with Bush in one of the physiology courses and in the course in Pharmacology. He seems not to have been a graduate of UND School of Medicine.

Aldo Massaglia, M.D., was appointed Professor of Pathology, teaching several courses in Bacteriology and Pathology. Edward J. Scannell, M.D., C.P.H., was appointed Professor of

Bacteriology and Director of the Public Health Laboratory, but an asterisk by his name indicates that he resigned this same year and there is no record of his having taught any courses. Long's name has disappeared and nothing is noted of a Director for the Public Health Laboratory.

1923

The faculty remained rather stable this year with the exception of Raymond McCradie, B.S., who was appointed as a Graduate Assistant in Physiology, Bacteriology, and Pathology. McCradie was a graduate of School of Medicine this year and he is not listed on the roster for 1924.

Anfin Egdahl, B.S., M.D., was appointed Professor of Bacteriology and Director of the Public Health Laboratory. He taught Public Hygiene and Sanitation, but Massaglia taught Pathogenic Bacteriology.

This year, Grand Forks' Dr. John H. Moore, having apparently accumulated enough dissected human heads changed the nature of his $25.00 annual prize to an award "for excellence of scholarship in one of the departments to be named each year. In 1922-23 this prize will be offered in Pathology."

The Medical Club is still thriving and under the heading "Standing of the School," the reader is informed that "graduates of 1921-22 are continuing their studies at Minnesota, the four Class-A schools of Chicago, Columbia, Pennsylvania, Harvard, Cincinnati, and George Washington University."

Among the notable events which occurred during the year 1923 was the building of the residence at 411 Hamline Street, one block North of the current edge of the University

Campus, by Professor and Mrs. William G. Bek. The house is being restored at present and is owned by the author of this Departmental History and his family. Bek was to become Dean of the College of Liberal Arts in 1930, having developed a reputation as both Linguist and Historian. There are still people in the Community who can remember reciting Goethe in that part of the home which is now used as a music room.

1924

Anatomy faculty remained the same this year, French and Sinclair, but French assumed Directorship of the Public Health Laboratory on Egdahl's departure. Bush apparently left Physiology-Pharmacology and was replaced by two men, Joseph Moss, M.A., M.D., Associate Professor of Physiology and Pharmacology, and Frederick C. Hill, B.A., Instructor, Physiology and Pharmacology. Hill is listed in the 1922 catalogue as a graduate that year of the medical curriculum. Young, the Zoologist, left the roster and Sinclair took over the Embryology course and listed it with the Department of Anatomy courses.

Horace M. Banks, A.B., M.D., was appointed Professor of Bacteriology and Pathology, replacing Massaglia whose name is gone from the list this year. Hill, the new Instructor in Physiology and Pharmacology is listed as assisting Banks in teaching Bacteriology and Pathology. French and Sinclair were team teaching now in nearly all the anatomy courses except embryology. Sinclair apparently was relieved of his teaching responsibilities in Physiology-Pharmacology.

Dr. Moore appears to have withdrawn his annual prize of $25 this year. However, the Grand Forks District Medical Society prize of $25 remained available.

1925

Anatomy faculty roster is the same and French is still listed as Director of the Public Health Laboratory. Moss and Hill left Physiology and Pharmacology and were replaced by George A. Talbert, Ph.D., as Professor of Physiology and Pharmacology and Frank Jenkins, B.S., B.A., as Instructor in Physiology and Pharmacology. Jenkins is listed as a 1925 graduate of UND School of Medicine. Elwin E. Harris, M.S., was appointed Instructor in Physiological Chemistry. Banks stayed as Professor of Bacteriology and Pathology and was joined by Eunice F. Fraizier, M.A., as an Assistant in Bacteriology. She was apparently the third female faculty member outside the School of Nursing since Norma Pfeiffer in 1914 and N. Johanna Kildahl in 1905.

The turnover in Physiology-Pharmacology left intact the course offerings of research in these fields and they are still offered in 1925 by the new Professor, Talbert. They are still the only research courses offered in School of Medicine.

The non-resident fee was raised to $100 per year, but the resident fee remained at $50.

1926

The only faculty changes this year were the replacement of Jenkins in Physiology-Pharmacology by Ralph Finkle, B.A. as Instructor, and the addition of Rudolph Kouchy, B.A. as Instructor of Anatomy and Pathology. Finkle is a 1926 graduate, Kouchy in 1924. French was on leave this year and so Kouchy and Sinclair team-taught most of the anatomy courses. Sinclair taught embryology. Banks was appointed Acting Director of the Public Health Laboratory and Acting Dean.

1927

This year, Sinclair, the Assistant Professor of Anatomy, left on leave and French (who

returned from leave) and Kouchy team-taught most of the anatomy courses. Kouchy taught embryology. Physiology-Pharmacology lost Finkle who was replaced by James W. Duncan, B.S., Instructor. Duncan was listed by Chandler as being a 1924 graduate of North Dakota Agricultural College. The rest of the faculty remained the same. This was the year that Arthur Kazu Saiki graduated from the School of Medicine. He was later to receive high praise for his teaching in Pathology over many years. Ruth Mahon, M.D. appears this year as a Lecturer in Bandaging.

1928

Sinclair apparently did not return to Anatomy from his leave. Gudmund G. Thorgrimsen, B.A., M.D., was appointed Acting Assistant Professor of Anatomy. Also John P. Gaardsmoe, B.A., was appointed Instructor in Anatomy. Chandler described him as a 1925 graduate of St. Olaf College. These new appointees team-taught Embryology and Histology and Organology while French taught the rest of the Anatomy program. It is of interest to note that for the next few years the Anatomy Department courses in Neurology and Topographical Anatomy have been brought under the same heading, "Anat. 5a, Neurology; Topographical Anatomy."

Duncan left Physiology-Pharmacology and was replaced by Reinhold O. Goehl, B.A., Instructor. Goehl was a 1928 graduate of School of Medicine. Fraizier left Bacteriology-Pathology and was replaced by Biarne Houkom, M.A., M.D. as Instructor in Pathology.

R.O. Wilson, B.S. was appointed this year as Registrar and Secretary of the Faculties and his name appears this year with the Dean of Medicine and the President of the University on the School of Medicine Faculty Roster. Fees were raised again this year to $65/year for

residents in the two years Professional Course and $135/year for non-residents. The name of John H. Moore, M.D., appears again this year, but as a lecturer in Obstetrics rather than as a donor of a prize.

1929

Anatomy faculty was stable this year with the exception that Jerome T. Syvertson, B.S., was newly appointed as Instructor in Pathology and Anatomy and helped French in Gross Anatomy and in the course; Neurology; Topographical Anatomy. Syvertson is a 1929 graduate of the medical curriculum. The Anatomy Department Roster now lists:

H.E. French, M.S., M.D., Professor

G.G. Thorgrimsen, B.A., M.D., Assistant Professor

J.P. Gaardsmoe, B.A., Instructor

J.T. Syvertson, B.S., Instructor

Arthur K. Saiki, who was listed as a graduate in the 1927 student roster, returns now with his B.S. and M.D. degrees as an Instructor in Physiology and Pharmacology.

Both Lewis and Houkom left Bacteriology and Pathology and were replaced by Charles B. McGlumphy, Ph.D., M.D., as Professor of Bacteriology and Pathology and, as noted above, Jerome T. Syvertson, B.S., as Instructor in Pathology and Anatomy. French was still listed as Director of the Public Health Laboratory and McGlumphy as Pathologist.

This year saw two new University positions of the School of Medicine faculty roster:

Beatrice M. Olson, M.A., Dean of Women and Kenneth E. Smiley, B.A., Dean of Men.

The School of Medicine graduated 22 students this year.

1930

Anatomy faculty is now French, Thorgrimson, a new man, Leonard Asmundson, B.A.,

B.S., Instructor in Pathology and Anatomy, and another new appointment, Alden W. Squires, B.A., Instructor in Anatomy. Gaardsmoe and Syvertson are not on the roster this year. Squires taught Embryology and Histology and Organology with Thorgrimson while French and Asmundson taught the rest of the courses in the department. There is a note this year that Thorgrimson is now Assistant Professor of Anatomy instead of Acting Assistant Professor but only part time. Asmondson was a 1929 graduate of the School of Medicine and Squires graduated in 1931.

Talbert and Saiki taught Physiology and Pharmacology again that year and Harris taught Physiological Chemistry. Bacteriology and Pathology were taught by McGlumphy and Asmundson. The latter taught both in Anatomy and Pathology.

The library lists 2,500 bound volumes now and sixty "current scientific magazines."

This year Neurology was separated from Topographical Anatomy as Anatomy 401 and 403, respectively.

A note of curiosity: this is the first year that the Bulletin used the spelling "Advanced" to describe a course topic rather than "Advanst."

1931

This year both Asmundson and Squires are missing from the faculty roster as is Thorgrimson. His part time status last year might have reflected his setting up private practice. New names on the Anatomy roster this year are: Clifford 0. Haugen, M.S., M.D., as Assistant Professor of Anatomy and E. Goodwin Olmanson, B.S., Instructor in Anatomy and Pathology. Olmanson was a 1931 graduate of the School of Medicine. Haugen taught Histology and Embryology which are listed together for the first time this year. Gross Anatomy was taught

by French and Olmanson as was Neurology. No name is associated with the Topographical Anatomy Course. French and Staff are listed for the Advanced Anatomy Course. Gross and Topographic Anatomy utilized 495 hours this year.

Talbert taught Physiology-Pharmacology with a new aide this year, Clarence W. Moberg, B.S., Instructor in Physiology and Pharmacology. Moberg is a 1931 graduate of School of Medicine. Saiki moved to Bacteriology and Pathology where he taught as Assistant Professor with Olmanson, who also taught in Anatomy. Harris is gone this year from Physiological Chemistry and replaced by Walter H. Moran, Ph.D., as Associate Professor, Physiological Chemistry. Moran, like Harris before him, was a member of the Chemistry Department.

This year Smiley, Dean of Men became also Dean of the Junior Division.

The library now lists 4,000 bound volumes.

1932

French, Haugen, and Heringer taught Anatomy this year. Weston Heringer, B.S., Instructor in Pathology and Anatomy, Talbert and Moberg taught Physiology-Pharmacology, Moran taught Physiological Chemistry. Saiki taught Bacteriology and Pathology with Heringer who also taught in Anatomy. Moberg was a 1931 graduate of the medical class and Heringer was a 1932 graduate.

Fees for residents remained at $65/year but for non-residents, the fee was raised this year to $165.

Twenty-five students were graduated from School of Medicine this year.

1933

Anatomy was taught by French and Haugen this year. Talbert and Heringer taught Physiology-Pharmacology again, and Saiki and Heringer taught Bacteriology and Pathology. Physiological Chemistry was taught by Moran.

Fees for residents were raised to $75 this year. The catalogue states that recent graduates are completing their work at: "Rush, Northwestern, Pennsylvania, Jefferson, Harvard, Johns Hopkins, Nebraska, Louisville and other schools."

1934

Faculty Roster

Anatomy - French and Haugen

Physiology-Pharmacology - Talbert and Heringer

Bacteriology and Pathology - Saiki and Heringer

Physiological Chemistry - Moran

No changes in policy or faculty are noteworthy this year.

1935

Faculty Roster

Anatomy - French and Haugen

Physiology-Pharmacology - Talbert and Monserud N. Ordell Monserud, B.A., B.S., Instructor in Physiology and Pharmacology graduated in 1934 from School of Medicine.

Bacteriology and Pathology - Saiki and Simonson, Donald B. Simonson, B.A., B.S., Instructor in Bacteriology and Pathology, a 1933 graduate of School of Medicine.

Physiological Chemistry - Moran

Saiki became Associate Professor this year.

In the list of Degrees Conferred for 1935 is the name of Louis Silverman who is still practicing in Grand Forks as an Allergist at this writing.

1936

Faculty Roster

Anatomy - French and Haugen

Physiology-Pharmacology - Talbert and Monserud

No other changes of note this year.

1937

The name of Clifford 0. Haugen, M.D., is missing from the Anatomy Faculty Roster this year. He is replaced by Lenier Arthur Lodmell, B.S., M.D. as Assistant Professor. Lodmell is listed as a 1931 graduate of UND School of Medicine. Lodmell was to teach Histology and Embryology and to share teaching of Neurology and Topographical Anatomy with Harley French. Monserud's name is missing from Physiology-Pharmacology this year and is replaced by Harold S. Pond, B.A., B.S. as Instructor. Pond is listed as a 1936 graduate of UND School of Medicine. Talbert also taught these subjects. Simonson is replaced by M. Jordan Thorstad, B.A., B.S. as Instructor in Bacteriology and Pathology with Saiki. Thorstad is listed as a 1935 graduate of School of Medicine. Moran taught Physiological Chemistry. The name of H.G. Woutat is missing from this and subsequent years. This was apparently the year he retired.

In past years the University Bulletin, under the heading of "Equipment and Standing" has always announced that "No one who has completed the curriculum has failed to have an opportunity to go on." This year, however, the statement is "Only two who have completed the

curriculum have failed to find an opportunity to go on." There is no record available of the identities of these two men or of their fate.

Saiki is listed as Professor of Bacteriology and Pathology this year and the School of Medicine graduated 25 students.

1938

The Faculty Roster is the same this year as in 1937. No changes are noted in the Bulletin for this year. School of Medicine graduated 23 students this year.

1939

There are significant changes in the Faculty Roster this year. Apparently funds were provided for several new faculty appointments. French and Ludmell remained the only listed teachers of Anatomy. Pond has left Physiology and Pharmacology to be replaced by another former student, Richard J. Maginn, B.A., B.S., who is listed as a 1938 graduate of the School. Apparently a new full time faculty member was made available to Physiology-Pharmacology in the form of the appointment of Harold W. Werner, Ph.D., as Assistant Professor providing a total of three teaching members (including Talbert) for this combined department. Werner apparently taught Pharmacology because his name replaced Talbert's this year in a Research in Pharmacology Course. Thorstad's name is gone from the roster this year to be replaced by Elizabeth Smith, B.A. as Instructor. This latter name is not listed as a graduate of School of Medicine.

Melbourne G. Westmoreland, M.S., M.D. is listed as Assistant Professor of Bacteriology and Physiology, teaching with Saiki and Smith. Another new appointment this year was that of Charles L. Nutzman, B.S., M.D., as Assistant Professor of Medicine. Moran remained with

Physiological Chemistry.

No other significant changes were noted for this year.

1940

No changes in staff or courses are noted for this year.

1941

The name of Herman L. Finsten, M.S., appears on the Anatomy Roster this year. His appointment is as a Student Assistant and he assisted French with Gross Anatomy. Maginn, the former student is gone this year from Physiology-Pharmacology and is replaced by Duncan M. Thomson, M.S. as Instructor. The names of both Westmoreland and Smith are missing from the Faculty Roster for Bacteriology and Pathology this year, replaced by George T. Rich, M.S., M.D. as Assistant Professor and Edward L. Simmons, B.S. as Instructor. Simmons is listed as 1941 graduate of UND School of Medicine. Nutzman taught Medicine and Moran taught Physiological Chemistry this year.

Two scholarships were announced for the first time this year: The Dr. and Mrs. Robert Mercer Evans Scholarship and the Moses Starr Titus Scholarship. These "two scholarships paying the incidental fee are available each year to students in need of financial assistance and at the same time deserving because of character, aptitude, and intellectual promise of success in medicine." These scholarships are both still available at this writing. The Grand Forks District Medical Society was continuing to offer a yearly prize of twenty five dollars "to the student who maintains the highest scholarship in the two years of medical work offered at the University."

1942

No changes are noted in Faculty Roster or Course Schedules for this year. Twenty-seven students were graduated from School of Medicine in 1942.

1943

Many new names appear on the School of Medicine Faculty Roster this year. Lodmell and Finsten are both gone from Anatomy, replaced by Kenneth M. Richter, Ph.D. as Assistant Professor, and Chester R. Fietz. B.S. as Assistant in Anatomy and Pathology. Fietz is described as Student Assistant in the Anatomy Course announcement and is listed as a 1941 graduate of School of Medicine. Richter taught Histology and Embryology and French taught Gross Anatomy and Neurology. Topographical Anatomy was not taught this year. Dietz's teaching assignment in Anatomy is not listed.

Both Werner and Thompson are gone from Physiology-Pharmacology this year and replaced by Robert V. Brown, Ph.D. as Professor of Physiology and Pharmacology, and Walter W. Kelly, B.S. as Assistant in Physiology and Pharmacology. Kelly is listed as a 1941 graduate of UND School of Medicine.

Rich and Simmons are gone from Bacteriology and Pathology and replaced by Francis C. Lawler, Sc.D. as Professor of Bacteriology (only) and Helen Wilson, B.S. as Assistant in Bacteriology (only).

Lawler, (and staff) taught Bacteriology and Immunology, Saiki (and staff) taught Pathology and both Professors taught Clinical Pathology and Parasitology with their staffs. Dietz assisted in Pathology as described above. This year Nutzman's name does not appear as Assistant Professor of Medicine.

A note on admissions: In previous years, 90 semester hours of college work were required for admission to School of Medicine. The following is quoted from the new admission standards: "For the duration (World War II) the requirements for admission amount quantitatively to a minimum of two years, 60 semester hours, of academic premedical college training in addition to satisfactory high school work or college entrance. The premedical college work must contain a minimum as follows: English Rhetoric, 6 semester hours (down from 10 hours of English in 1942) French or German 12 semester hours (down from 12-18 hours). Biology requirements, 8 hours, remained the same as did Physics, 8 hours. Chemistry requirements were reduced to 13 hours from 16 hours.

It is evident that World War II was affecting medical education at UND but what influence it had on the rate of faculty turnover is difficult to determine at this point since it is not known what happened to the faculty members who left.

Fees were raised this year from $75.00 to $113.00 for residents and from $198.00 to $265.00 for non-residents.

1944

Still in the middle of the war years faculty turnover continued high. This year Richter and Dietz are no longer listed in Anatomy by the University Bulletin. In their places are listed Neal A. Weber, Ph.D. as Associate Professor and Stanley M. Saiki, B.S. as Assistant in Pathology and Anatomy. French was still, of course, heading the Anatomy department as well as serving as Dean. Weber taught Microscopic Anatomy which included Embryology.

The former student Kelly was replaced by another former student, Robert C. Heen, B.S., a 1944 graduate of the School to assist Talbert and Brown in Physiology-Pharmacology. In

Bacteriology and Pathology, Stanley M. Saiki, B.S., a 1944 graduate was appointed Assistant in Pathology to work with his father and Lawler and Wilson. The younger Saiki also assisted in Anatomy. Moran continued with Physiological Chemistry.

A note under "Admission" this year indicates that for the duration, the school will accept as a minimum requirement, the completion of the ASTP premedical or the Navy V12 premedical on the part of students assigned by the Army or Navy. However, "civilian students looking forward to medicine would do well to keep in mind not only the requirements in the specific premedical sciences but the suggestions of the prewar medical curriculum."

Another note of interest relates to the academic calendar. "For the duration the school is in operation 48 weeks of the calendar year. It is on the twelve weeks term plan three such terms constituting an academic year. Since there are four such terms in the calendar year, an academic year closes and another begins approximately every nine months. The present academic year began March 27, 1944. The next is scheduled to begin January 2, 1945." This year the School graduated 27 students including Edwin G. Olmstead who still practices in Grand Forks and is Clinical Professor of Medicine at UND as well as Adjunct Professor of Humanities.

1945

This year the school was still on the war schedule with respect to admissions policies and the academic calendar.

French and Weber taught the Anatomy courses. Talbert retired and became Professor Emeritus of Physiology-Pharmacology. Brown is listed as the only staff member in this department but the Physiology courses still list Talbert and staff as teaching Physiology and

Brown with Pharmacology. Albert L. Carlin, B.A. is listed as an Assistant in this department. He is listed as a 1945 graduate of School of Medicine. The younger Saiki left Bacteriology and Pathology this year. Helen E. Mero, B.S., M.T., is listed as Assistant in Bacteriology, (the M.T. designation apparently means Medical Technician) and William A. True, B.A. also assumed the position of Assistant in Bacteriology. Moran was still teaching physiological chemistry.

This year the school graduated 21 students including Richard H. Leigh who still practices Obstetrics-Gynecology in Grand Forks at this writing and is Clinical Associate Professor of Obstetrics-Gynecology at UND.

1946

In terms of Bulletin publishing, this was the first post war year at UND. It saw the announcement of new admission standards including the requirement of three years premedical college work which still stands at this writing, although the 1981-83 School of Medicine Bulletin states that "Preference is given to students who have earned an undergraduate degree." Back to 1946: the new admission requirements specify:

10 semester hours of English

12 to 18 semester hours French or German 8 semester hours Biology, Zoology 15-20 semester hours Chemistry 8 semester hours Physics

Other desirable fields are Mathematics, Social Sciences, Psychology, "Latin words in English," and "Greek words in English."

The minimum GPA for admission remained at 1.5. For promotion, the student still was required to "have the C or graduating average in at least two thirds of the first year's work."

French and Weber remained with Anatomy. Talbert apparently left the campus to be replaced by Emerson A. Reed, Ph.D. as Assistant Professor. Carlin's name is gone, replaced by Edward L. Simmins, B.S. as Assistant in Physiology.

Saiki, Lawler, and Mero remained at Bacteriology and Pathology. True is gone and the name of Daniel Ziev, B.A., B.S., appears as Assistant in Pathology.

A new announcement of Loan Funds is present this year in the Bulletin. The School had received a grant from the W.K. Kellog Foundation in 1941 to be used as a loan fund to medical students under certain cited scholarship conditions.

The School of Medicine graduated 23 students this year.

1947

This year Weber is listed as on leave of absence from Anatomy during second semester 1946-47, although his name is still listed with the course descriptions for both 1946 and 1947. Robert R. Kling, B.A., M.D. appears on the roster this year as Assistant Professor of Anatomy. He is listed as teaching "Microscopic Anatomy, Embryology and Histology" with Weber and Neurology with French. Kling was a 1942 Graduate of UND School of Medicine.

Brown is gone from Physiology-Pharmacology this year as is Simmons. Reed remains and the name of Edward T. Ruud, B.A., M.D. appears as Assistant Professor of Physiology and Pharmacology.

In Bacteriology and Pathology, Saiki and Lawler remain and Mero and Ziev are gone replaced by John Foley Vaughan, B.A., M.D. as Assistant in Pathology, and Harriet L. Johnson, B.A., M.S. as Assistant in Bacteriology.

Moran is now Professor of Chemistry and continues to teach Physiological Chemistry.

Fees were raised this year from $113 to $120. per year for residents. The $198 fee remained the same for non-residents.

The School graduated 23 students this year and former Dean of Medicine Brannon received an Honorary Doctor of Science Degree.

1948

This year saw the beginning of a mathematics requirement for admission in the form of 3 hours of College Algebra. Social Sciences is now listed as a requirement instead of under the heading "Other Desirable Fields" as for previous years. The following is stated under the requirement of Social Sciences: "No definite recommendation is made of the 24 remaining hours not definitely assigned. It is felt that Psychology is perhaps the most important and should be stressed more than Sociology, History, or Political Science."

Another announcement on admissions appears for the first time this year: "Premedical majors in Chemistry, Physics, Biology, or Social Sciences are equally valuable for entrance to medical school. Combination majors in any two or more of the above fields may be worked out for the B.S. degree in the combined Arts-Medical curriculum."

The "Professional Aptitude Test" as given by the Graduate Record Office, 437 West 59th Street, New York 19, New York became a requirement for admission this year.

Harley French resigned as Dean in 1947, and became Dean Emeritus after 36 years in that post, (1911-1947). As is evident from these notes, French presided over a prolonged period of development of the School and establishment of its high academic standards. He was replaced by Alfred Lawton, M.D., Ph.D. and Professor of Physiology-Pharmacology. Lawton was to remain only one year. He had returned from military service in World War II and taught for a while at Northwestern. In addition to his duties as Dean, Lawton also served

as Chairman of Physiology-Pharmacology.

The Faculty Roster does not list Weber this year. Apparently he did not return from his leave of absence. Kling remains with French and the name of Leslie C. Lundsten, B.S., M.D. appears as Instructor with his name assigned to all four of the Anatomy courses offered.

Reed and Ruud are both gone from Physiology and Pharmacology this year.

O.P. Erickson, B.A., B.S., M.D. is Assistant Professor of Physiology and Pharmacology, Charles M. Graham, B.S., M.D. is also Assistant Professor and John Pence, B.A. is Assistant in Physiology and Pharmacology.

Saiki is still at Bacteriology and Pathology but all other faculty names have changed.

Lloyd S. Ralston, Melvin Koons, M.S., M.S.P.H. became Assistant Professor of Bacteriology. Harriet Johnson Kling, B.A., M.S., became Assistant in Bacteriology as did Herbert Winge. Kling was related to the Kling in Anatomy (wife.)

Apparently Moran got some help in Physiological Chemistry in the form of H.V. Peterson as Instructor in Chemistry.

Donna Peterson Hayes is now listed as Secretary to the Dean.

Fees were raised to $150 per year for residents and $228 for non-residents. The local Beta Lambda Chapter of Phi Beta Pi Fraternity was founded this year "to further understanding among its members of the various aspects of medicine and to promote the principles of public service, integrity, and fidelity."

1949

Lawton's name is missing from the faculty roster this year as both Professor and Dean.

He had accepted an appointment at Veteran's Administration Headquarters. A new appointment as Dean was W.F. Potter, M.D., Ph.D., Professor of Physiology and Pharmacology. He has been Head of Department of Physiology at University of Mississippi for 15 years before coming to UND.

French and Kling handled the Anatomy teaching this year and Kling has been promoted to Associate Professor. Lundsten's name does not appear in Anatomy this year.

Physiology and Pharmacology was taught by the new Professor and Dean, W.F. Potter and another new Associate Professor Alta Ray Gault, B.A., M.S. E.L. Billing was listed as Student Instructor in Physiology and Pharmacology.

Perhaps the first indication of separation of Bacteriology from Pathology occurred this year as Saiki's title was changed from Professor of Bacteriology and Pathology to Professor of Pathology. Richard M. Marwin, B.A., M.S., Ph.D. arrives as Associate Professor of Bacteriology and Robert G. Fischer, B.A., M.S., Ph.D. as Assistant Professor of Bacteriology. Aletha Markusen, R.N. was described as Assistant in Bacteriology and Pathology. Peterson's name left Physiological Chemistry and is replaced by Harry J.
Christoffers, B.S., M.S., as Instructor in Chemistry.

The four year training program for Medical Technologists was instituted this year. The Occupational Therapy Program is also announced in this year's catalogue.

No other changes of interest were noted this year in the Bulletin. What is of interest, however, is the fact that no mention is made of the new "Science Building" in the Bulletin. It was authorized by the legislature in 1945, funded in 1947, finished in 1948 and occupied by 1949, but none of these events were noted in this publication. Under the heading "Equipment

and Standing", the same statement appears: "The School possesses the necessary laboratory and library facilities to enable it to offer thorough instruction in all of the laboratory medical sciences."

The Medical Library was named the Harley E. French Medical Library this year. It was to be a separate unit of the University Library, housed on the first floor of the new Medical Science building.

The School of Medicine graduated 21 students this year.

1950

Announcement of completion and occupation of the new Medical Sciences Building was made in this year's catalogue: "The School of Medicine has been located in the new Medical Sciences Building since September, 1949. The most modern scientific equipment is available for instructional purposes as well as for research activities. Each department has the facilities necessary to offer the basic material for the first two years of medicine."

This was the year that Christopher J. Hamre is first listed as Professor and Chairman of Anatomy. He was to remain until his retirement in 1972 when he became Emeritus Professor until he died in 1976. He was Dean of the Graduate Division from 1957 to 1967. French became Professor Emeritus as well as Dean Emeritus but is listed as continuing to teach Gross Anatomy with Hamre. Kling continued to teach Histology and Embryology, six and three credits respectively as separate courses. No instructors were listed for the 4 credit Neurology Course and so it is not known who instructed in that subject. Course numbers "503 and 504 Research in Anatomy" appeared this year for the first time with the following description: "Credits and hours arranged. First and second semester. Open to those students who have

shown special aptitude in Anatomy or correlated work, and members of the medical profession." This work was to be supervised by 97 "Staff". Hamre came to UND from University of Hawaii and was to continue as the third known Chairman of Anatomy (after McDonald and French) until his retirement from this post in 1967.

A course titled Seminar in Anatomy, No. 505 and 506 for two credits was offered for the first time this year "open to advanced students and members of the medical profession."

Sigwin B. Raska, M.A., Ph.D. is listed this year as Associate Professor of Pharmacology. A Ruth H. Raska, M.S., is listed as a Lecturer in Psychiatry.

Potter, the Dean, Gault and Billing are listed on the Physiology-Pharmacology faculty again this year. Thomas P. Webb is listed as a Technician in Physiology-Pharmacology.

In Pathology this year Saiki is listed again as Professor. James D. Cardy, M.D. appears as Professor of Pathology and Director of the Medical Technology training program. An announcement appeared in the Grand Forks Herald newspaper obituary column of January 20, 1983 of the death of Cardy on (date) in (city). He had retired in (69) Margaret Jean Holland, M.S. appears this year as Instructor in Pathology and Lois Anne Stein as Medical Technologist. In Bacteriology Marwin and Fischer are again listed while Markusen is listed as Instructor in Bacteriology. Christoffers and Moran taught Chemistry.

A new division of the School of Medicine seems to have been formed this year by the appointment of Melvin E. Koons, M.S., M.P.H. as Associate Professor of Public Health. A number of Lecturers with the M.D. degree served as in most years covering such subjects as Medicine, Surgery, Obstetrics, Gynecology, Psychiatry, and Preventive Medicine. It is thought

that these duties were performed by physicians practicing in the Grand Forks area. It has not been possible to determine whether they were compensated or, rather, donated their efforts.

There is an announcement of Graduate work available in School of Medicine this year in each department under the rules and regulations of the Graduate Division. The announcement is separate from the departmental course announcements indicating that a School of Medicine Graduate Program was getting underway. In the announcement is found the statement "Only the degree of Master of Science is planned at present".

Clinical Courses listed this year are:

First Aid and Bandaging - one credit

Medicine - one credit

Physical Diagnosis - two credits

Surgery - one credit

Laboratory Technique - two to four credits

Obstetrics - one credit

Psychobiology - one credit

Psychopathology - one credit

John A. Page is listed this year as Director of the Medical Center and Loretta W. Swift is listed as Medical Librarian. A Medical Librarian had not been listed before.

An announcement was made in the 1950 School of Medicine Bulletin about a new method of financing the Medical Center as follows:

PLAN AND SCOPE

"In the fall of 1948, a constitutional amendment was voted and passed by popular assent

to establish a state Medical Center which places a one-mill levy on the taxable property in North Dakota. Formation of this Medical Center established this program at the University of North Dakota as provided in Chapter 172 of the North Dakota Session Laws of 1945. The School of Medicine will serve as the pivot point of projects outlined by the Medical Center.

The purposes of the Medical Center will be to train an adequate number of physicians and surgeons, nurses, medical technologists, sanitary engineers, public health administrators, and all other personnel concerned with the proper function of a Medical Center. This program will be coordinated with state agencies, both public and private, including hospitals, clinics, et cetera.

The facilities of the Medical Center may be used by all agencies of the state, county, and municipalities in any way concerned with health, medical care, or public welfare, and by private physicians and surgeons. Such services will include assistance from the various departments of the School of Medicine, psychiatric consultation, accessibility to materials of the Medical Library, and the instruction of post-graduate and refresher courses for physicians, surgeons, and other medical personnel. It is desired to promote the plans of the Medical Center on a sound basis and these services will be made available as opportunities present themselves."

The fee for non-residents was raised from $228 per year to $235 this year but the $150 fee for residents remained unchanged.

The Harley E. French Medical Library this year announces "over 5,000 volumes of medical books, sets of journals, charts, current periodicals and pamphlets. At present the library receives 105 medical journals.

1951

This year School of Medicine started to publish its own, separate catalogue and appointed a Catalogue and Publications Committee. The School was in its own building and the full time faculty roster appears to have stabilized somewhat. From this point I will describe only changes in Anatomy faculty with an occasional note describing arrivals and departures of some members of other departments who were to stay for some significant period. Faculty of other departments are listed in the bound volume of reproductions of School of Medicine Catalogues which accompanies this narrative form of Department of Anatomy History.

Anatomy Department lost Kling this year and gained the following staff as listed over the course announcements: Elbert B. Ruth, M.A., Ph.D., as Associate Professor, Harold Brody, B.S., Assistant Professor, Ruth E. Shrader, Ph.D., Instructor and Philip E. Woutat, M.D., as Clinical Associate. Woutat was to take up where his father had left off at retirement in 1937 in teaching radiological anatomy to first year students until his own retirement in 1978.

Course listings for Anatomy include the following:

Anat. 201. Anatomy for Nurses, three or four credits, taught by Mr. Brody and "Miss Shrader".

Anat. 302. Human Histology. Four credits, a course for Medical Technology students and taught by "Dr. Shrader".

Anat. 3Q,. Histologic Technique. Three credits, first semester for Medical Technology students and taught by "Miss Shrader".

Anat. 311-312. Gross Anatomy. Eleven credits, both semesters, open only to medical

and graduate students, taught by Hamre, French, Woutat, and "Assistants".

Anat. 315. Histology and Organology. Six credits, first semester, open only to medical and graduate students, and taught by Ruth, Shrader, and Assistants.

Anat. 318. Human Embryology - (This course title is crossed out in the catalogue and replaced by the designation "Developmental Anatomy" in pencil). Four credits, second semester, open only to medical and graduate students and taught by Ruth and Shrader.

Anat. 322. Neuroanatomy, four credits, second semester, open only to medical and graduate students and taught by Brody, French, and Assistants.

Anat. 325-326. Prosection of Cadavers for Demonstration to Freshman Class, two to four credits, first and second semester, open only to advanced medical students, graduate students and members of the medical profession. Taught by Hamre and French.

Anat. 501-502. Advanced Anatomy, TBA, first and second semester. The same prerequisite conditions as Anat. 325-326 above. This course was taught by Hamre, Ruth, Brody, and Shrader with French's name crossed out in the ~library file] catalogue.

Anat. 503-504. Research in Anatomy. Credits and hours TBA, first and second semester. Research is offered in the fields of gross morphology, histology, hematology, embryology, endocrinology, neuroanatomy and neuropathology. Taught by "Staff".

Anat. 505-506. Seminar in Anatomy - two credits, first and second semesters. Aspects of anatomical research of the various staff members, and pertinent subjects by guest speakers are designed to acquaint those interested with current developments in the field. Open to advanced students and members of the medical profession. "Staff".

A school of medicine Sophomore Class List for 1951-1952 was published in the catalogue this year. Among the names in this list is that of Walter A. Wasdahl who was later to become Chairman of the Pathology Department. Cardy is listed this year as Chairman of Pathology.

This was the year in which the Biochemistry Department was established. The name of

William E. Cornatzer, M.S., Ph.D., M.D. appears as Professor and Chairman. He was to remain in this post until his retirement in 1983. He was unassisted apparently in teaching the first (and for this year) the only course, "Biochemistry 333. Seven credits. First semester. Four lectures, nine laboratory hours a week. A study of the normal chemical composition and reactions of carbohydrates, proteins, and fats and their pathological variations involving the human organism; analysis of body fluids and tissues; study of metabolism; and the application of these chemical experiments to the field of medicine. Required of students of medicine during freshmen year.

"Dr. Cornatzer." A blank space is left under Cornatzer's name with a title Assistant Professor. There was apparently an intention to get another teacher for the new department.

The name of Moran who taught Physiological Chemistry last year still appears on the general faculty roster but not under Biochemistry. Nor is he listed as teaching any courses. Christoffers, who also taught physiological chemistry last year, is not listed this year. The name of John A. Page, B.A., M.S., which appeared as Director of the Medical Center is listed as "Deceased July 5, 1951". No replacement is listed.

The name of Benjamin DeBoer appears this year as Professor of Physiology. He was to remain at UND until his retirement in 1975.

In the section of the General Statement, under the heading "History and Purpose" is found the following: "Since passage of the one-mill levy in 1948 which places a taxation on all property in the State for the support of the Medical Center, the various departments of the School of Medicine have undergone revision and reorganization. The staff has been augmented

and strengthened. The amount of equipment necessary for competent teaching and research has greatly increased. This trend indicates that the School of Medicine is undergoing a healthy and vigorous transformation and signifies that the interests of the people of the State of North Dakota will be served by their Medical Center." This was the year that the School of Medicine was "restored to good grace" from its year to year "temporary accreditation".

In an apparent attempt to assure the legislature and taxpayers that the new expansions in the School were under watchful restriction, the following statement is appended to the above: "The essential purpose of this School of Medicine is to provide the best preclinical training to its students at a minimum cost."

There is a separate heading for a description of graduate instruction again this year as follows: "The School of Medicine offers graduate instruction in the following departments: Anatomy, Bacteriology, Pathology, Physiology, Pharmacology, and Biochemistry." Some notes penned into the catalogue indicate that the stipend for graduate fellowships and assistantships was $1200/year and that for residencies (in Pathology only) was $3,000 to $3,600/year.

All applicants for the various graduate programs had to be acceptable to the Graduate Division as is still the case at this writing.

Under the heading of "Research Facilities and Research Grants" this year, we are informed that each department in School of Medicine has sufficient laboratory space to provide facilities for scientific investigations by members of the staff, graduate students, and qualified undergraduate students. It is announced also that $97,000 in research grants were received in the past year from the following agencies:

North Dakota Cancer Society

United States Public Health Service North Dakota State Medical Center Damon Runyon Cancer Fund

American Cancer Society

Veterans Administration

Under the heading Clinical and Special Facilities it is stated that School of Medicine maintains close affiliation between the Deaconess and Saint Michael's Hospitals in Grand Forks. Saint Michael's was under construction immediately adjacent to the UND campus at the time at a cost of $3,000,000. This relatively new and modern building was to be closed barely 25 years later as was the older Deaconess Hospital in the city centrum and the two consolidated into what is now known as the United Hospital on the South end of the city. In any case, the catalogue announces a close affiliation with the local and statewide clinical resources.

With the expansion of the rejuvenated School of Medicine, additional prizes and sources of student support were announced and were listed in the new School of Medicine catalogue for 1951, which is bound separately.

The Harley E. French Medical Library now boasts 10,000 medical books, monographs, and bound journals. A new announcement states that "The Medical Center, with the School of Medicine, in addition, intends that the Harley E. French Medical Library will serve as a research and lending library for the doctors and other affiliated personnel of the state. Over 250 current journals, domestic and foreign were now being received. In addition, a collection of books and journals illustrating the history of medicine is being started from gifts to the library. A separate Nursing Library was also established and housed in the Medical Library.

Apparently fees were reduced this year to $125 from $150 for resident students and to

$120 from $235 for non-resident students.

Faculty Committees for School of Medicine are announced this year and are listed as follows:

Admissions

Catalogue and Publications Curriculum

Honors and Promotions Library

Medical School Policy Research and Teaching Grants Scholastic Standards

Student Loans and Grants Student Affairs

Membership on these committees can be seen in the reproduction of the catalogue for this year, bound separately.

A note for contrast with policies at the time of this writing. The catalogue for 1951 states under the heading: "Attendance - Attendance is expected of each student at all lectures, recitations, laboratory periods, clinics, and other assignments before examination and credit will be given in any course."

A Sophomore Transfer List is published this year indicating that 29 students succeeded in gaining acceptance for their third year at the following schools:

Albany Medical College

Baylor University University of Buffalo University of Colorado Creighton University

University of Illinois University of Iowa University of Louisville Marquette University

University of Nebraska Northwestern University University of Oklahoma Stanford

University

Vanderbilt University

A "Directory of Non-Teaching Personnel" was published with this year's catalogue and entries of interest to Department of Anatomy are as follows: Fernando Campos, Janitor. His services to the School of Medicine were so much appreciated that the students of the class of 1959 presented him with a photographic portrait which was hung in the corridor of the Medical Science Building. Upon his death in 1972 he bequeathed his remains to the School of Medicine which were subsequently utilized in the dissection program in Gross Anatomy as an anonymous contribution.

Stanley J. Davidson is listed as Anatomy Department Diener this year, the first recorded appointee with this title.

Kathleen Dyre is listed as Secretary, Department of Anatomy. Secretaries are listed for all departments this year as well as one for the Dean and one for School of Medicine.

Rachel Ruth, Research Assistant, Department of Anatomy. Elbert E. Ruth, M.A., Ph.D., Associate Professor Anatomy as listed on the faculty roster for this year was her husband.

Loretta Swift, Librarian, School of Medicine.

John Vennes, Laboratory Assistant, Department of Bacteriology. Vennes was to return to UND after obtaining a Ph.D. at University of Michigan. He was to become Professor, Acting Dean and then Chairman of Microbiology on the retirement of Robert Fischer.

Vernon Yeager, Graduate Assistant, Department of Anatomy. Yeager was to remain as Assistant Professor of Anatomy after receiving a doctorate from the department in 1955.

Several other titles such as Stockroom Clerk, Laboratory Attendant, and Technician appear for the first time this year.

1952

The name Elbert Ruth is missing from the Anatomy Department faculty roster this year without replacement as was that of Rachel Ruth. The courses which he taught, Histology-

Organology, and Embryology ~officially called Developmental Anatomy for the first time this year] are listed as having been taught by "Miss Shrader and Assistants". These assistants apparently were Jerrold Corbett, appointed as Teaching Assistant, Department of Anatomy and Walter Eidbo, Graduate Assistant, Department of Anatomy. The last entry in the list of Non-Teaching Personnel was: "Graduate Assistant to be appointed, Department of Anatomy. Corbett and Eidbo were both to be listed as Graduates from School of Medicine in 1954.

This was the year that Helge Ederstrom came to Physiology-Pharmacology as Associate Professor. He was to remain at UND until his retirement and appointment as Professor Emeritus in 1978. A Paul H. Potter, M.D. also joined Physiology-Pharmacology as Assistant Professor. He was the son of the Chairman of that Department and Dean of Medicine, Wilbur F. Potter. His name was on the roster for only the one year.
Cornatzer got some help in Biochemistry this year in the form of the appointment of John P. Davison, M.S., Ph.D. as Assistant Professor of Biochemistry.

A note at the end of the faculty roster states that the list "does not include those staff members associated with the sophomore, clinical clerkships. These appointments are pending." Apparently the clinical clerkship program was just getting underway in 1952. Vennes was named Instructor in Bacteriology this year and Wasdahl transferred to McGill University. The name of Melba Larson appears this year as Secretary to the Medical Librarian. She was to remain to the mid- 1970's as Secretary and Librarian under the name of Youngren. Under the list of Faculty Committees this year, Glenn L. Hoffman, Ph.D., Assistant Professor Bacteriology was named Secretary of the Faculty.

The University of North Dakota Chapter of the Student American Medical Association

was organized this year "for the purpose of furthering academic and social interests of the students and to establish professional relations with other schools of the United States through the national organization."

Thirty-seven students were graduated this year.

1953

Theodore H. Harwood, M.D., 1936, University of Vermont, replaced Potter as Dean this year. He had been Associate Professor of Internal Medicine and Assistant Dean at Vermont. He apparently did not have specific teaching responsibilities. Potter remained as Professor and Chairman of Physiology.

The Histology and Organology Course and the Developmental Anatomy Courses were taught this year by a new faculty member, Theodore Snook, Ph.D., Cornell, 1933 as Associate Professor of Anatomy. Walter J. Bo, Ph.D., University of Cincinnati, 1953 was appointed Assistant Professor of Anatomy and taught Gross Anatomy with Hamre, Woutat, and Assistants. Apparently French became inactive this year and was replaced by Bo in the teaching of Anatomy.

Under the heading Non-Teaching Personnel, the Anatomy Department listed Doris Anderson, Graduate Assistant, Rudolph Kaemerle, Graduate Assistant (Kaemerle was listed as a Sophomore Medical Student in 1954-55), Vernon Yeager, Graduate Assistant (he was later to become a member of the Anatomy Faculty), Arnold Taye, Student Assistant (Taye was listed as a Sophomore Medical Student in 1954), and Kathleen Norman, Histological Technician.

Lee A. Christofferson, M.D., University of Minnesota, 1945, was appointed Instructor in Psychiatry this year. He was later to direct the Neuro-Psychiatric Institute in

Fargo and to participate in the Neuroscience course which grew out of Neuroanatomy and Physiology.

Cyril J. Dillenberg from Glyndon, Minnesota was one of 32 students graduated from UND School of Medicine this year and went to Northwestern University for his 3rd and 4th years. He was later to return to Department of Pathology where he served as Associate Professor. He died suddenly in 1983.

1954

The name of Brody is missing from the Anatomy Faculty Roster this year as is that of Shrader. Apparently replacing them are the names of Olof Larsell, Ph.D., Northwestern University, 1918, and Robert C. Holland, M.S., University of Wisconsin, 1949. They apparently took over the Neuroanatomy Course as well as some of the other departmental offerings.

Under a separate title this year, "Graduate Assistants and Fellows" were listed. As Graduate Teaching Assistants in Department of Anatomy:

Doris L. Ahlness

Roger D. Natwick

Jerry Weisberg

Vernon L. Yeager (who was to become Assistant Professor in 1956)

Two graduate students were listed in the Biochemistry Department and two in Physiology-Pharmacology.

This year Christofferson, Instructor in Psychiatry is described as a Neurosurgeon. Frances A. Jacobs, Ph.D., St. Louis University 1952, arrived as Assistant Professor of

Biochemistry and serves as Professor in the department at this writing. The name of Louis B. Silverman, B.S., University of North Dakota 1935, M.D., Rush Medical College 1937, appears as Associate, Professor of Pediatrics this year. He is currently practicing in Grand Forks but, as noted earlier, has changed his specialty to Allergy. Vennes, Instructor in Bacteriology was on leave of absence for 1954-55.

Resident students paid $138 per year and non-residents paid $223 in 1954-55. Under a heading "Student Employment" is found the following statement: "No first-year medical student should plan on employment, nor should a student entering the University for the first time come depending upon securing a loan. Student assistantships in the various departments are available to medical students and are usually arranged on an hourly basis after the school year is underway. Three or four second year students live at the local hospitals and obtain room and board for their services. In addition, there are the usual opportunities for outside work to be found in a school and community of this size. "Wives of married students usually have little difficulty in finding work."

Thirty students graduated from UND School of Medicine this year.

Thirty-seven received their M.D. degrees from a variety of four-year schools. Included in the latter group was Wasdahl at McGill.

This year the student body, under the leadership of the student A.M.A. initiated an Honor System under which examinations are given.

1955

The School of Medicine did not publish a complete catalogue this year. Information was published as a "Supplement to Catalogue (Issued October, 1954)" and dated August, 1955.

For this reason, there were no course descriptions published for Anatomy or for any other department in School of Medicine. The list of graduate students, fellows, teaching assistants and support personnel was also left out this year. The faculty roster in Anatomy remains the same as in 1954 and it does not appear that there was any change in Anatomy curriculum.

The fee for non-resident students was raised from $223 to $358 in this year, 1955. Fees for resident students remained at $178.

The first year class had 40 students this year. The name of James B. Hoyme appears in this list. He later came back to UND to teach psychiatry for a few years. There were 37 second year students, 36 third year students at various transfer schools and 30 fourth year students, also at various transfer schools.

John V. Eylands was listed as a second year student. He later returned to UND and joined the Pathology Department where he remained for several years.

The special Lecture Series which has been presented by School of Medicine included this year the great renal physiologist Homer W. Smith, M.D., who spoke on February 7, 1955 on "The renal excretion of sodium and water from fish to philosopher". Smith was at that time Professor of Physiology at NYU College of Medicine and the author of a brilliant book on excretory mechanisms, "From Fish to Philosopher." For other Lecturers, see catalogue excerpts for 1955 which accompanies this narrative form of Department of Anatomy History.

The Medical Student Wives' Club was formed this year as a daughter organization of the Grand Forks District Medical Auxiliary.

1956

A complete catalogue, now a Bulletin, appeared again this year with course descriptions.

It is now in a biennial format. The Anatomy roster was depleted by the loss of Larsell this year. He probably would have been about 65 years old by 1956, having received his Ph.D. at Northwestern University in 1918 and he may have retired. Replacing him was the name of Vernon L. Yeager as Assistant Professor. We last saw his name in 1954 as a Graduate Teaching Assistant in the Anatomy Department. Apparently he received his Ph.D. in 1955 from this Department. No other changes were noted in the Anatomy faculty and it now stands as follows:

Christopher J. Hamre, Professor and Head

Harley E. French, Professor Emeritus

Theodore Snook, Associate Professor

Philip H. Woutat, Clinical Associate

Walter J. Bo, Assistant Professor

Robert C. Holland, Assistant Professor

Vernon L. Yeager, Assistant Professor

A course numbered Anatomy 204, Anatomy for Physical Education and Occupational Therapy appears for the first time this year. This is separate from Anatomy 201, Anatomy for Nurses. 204 was taught by Bo, Hamre, and Assistants. 201 was taught by Holland and Assistants.

The course Anatomy 509 was listed for the first time this year. It was Endocrinology and was taught by Bo and Holland.

Under the heading Graduate Assistants and Fellows, Department of Anatomy are the following:

Allen R. Neuenschwander, Teaching Assistant (Neuenschwander is also listed as a second year medical student)

Raymond J. Parisi, Teaching Assistant

Department of Bacteriology had one Teaching Assistant, Biochemistry had two Teaching Assistants, two Research Assistants and one NIH Pre-doctoral Fellow. One Teaching Assistant was Robert Nordlie who was to take a Ph.D. and ultimately became Professor of Biochemistry and in 1983 Chairman upon Cornatzer's retirement. Physiology-Pharmacology had two Teaching Assistants, an Alpha Phi Cardiovascular Fellow, and an NIH Research Fellow.

Under the heading Staff Assistants and Technicians appears the following for Department of Anatomy:

Betty L. Buegal, Secretary

Kathleen Norman, Histological Technician

John Kloster, Diener

The name of John Vennes appears as Assistant Professor in Bacteriology this year.

Walter A. Wasdahl returned from McGill with his M.D. and became a Fellow in Pathology as well as Student Health Physician.

There were 41 first year medical students listed this year and 39 second year students. Thirty-four names are listed as third year students and their transfer school given. Thirty-eight students are listed as fourth year students with their transfer schools.

Twenty-eight students are listed as interns and among them is Donald L. Lamb who was interning at Salt Lake County General Hospital, Salt Lake City, Utah. He is now

Associate Professor of Surgery at UND and is based at Fargo.

Also in 1956 the Board of Higher Education approved a program which was to lead to establishment of a Rehabilitation and Outpatient Treatment Center. This facility was to provide the four aspects of a rehabilitation program: "the psychological, the medical, the social, and the pre-vocational areas." The program and building plans were drawn up to qualify for matching funds from the Hill-Burton Hospital Construction Act and were approved by the Public Health Service and the Board of Higher Education in June of 1956.

The new unit was to be called the Rehabilitation and Diagnostic Treatment Center. It was to "augment the facilities which already existed in the State as well as the work of the voluntary and tax-supported health programs." The outpatient facility was to provide specialty clinics particularly in the fields of mental health, cerebral palsy, and speech and hearing." Fees this year are listed as $176 for residents and $356 for non-residents.

The programs of grants, loans, and awards had been expanding as the School of Medicine expanded. They are more extensive than should be included here but they can be examined in the reproductions of the 1956 Bulletin, separately bound. Also to be found there is a list of the various sources of research funding being utilized in the School at that time.

In 1956 the Harley E. French Medical Library contained 15,000 medical books, monographs and bound journals used primarily by School of Medicine and School of Nursing. Space had been provided for 50,000 volumes in five floors of stacks. The library was then receiving over 300 of the leading medical journals both domestic and foreign.
Also available in the Library:

1. The Index Catalogue of the Library of the Surgeon General's Office.

2. Index Medicus.

3. Quarterly Cumulative Index Medicus.

4. Armed Forces Medical Library's Current List of Medical Literature.

5. Exerpta Medica.

6. Biological Abstracts.

A Medical Museum of Pathological Specimens was being collected as well as items of historical interest such as books, papers, and instruments.

A Quarterly Medical Staff Research Seminar is also announced presenting a series of papers on current research activities of the group.

The list of speakers for the Special Lecture Series appears in the Bulletin for this year but no lecture titles are given.

1957

Anatomy Faculty this year:

Hamre

French

Snook

Woutat

Bo

Holland went on leave 1957-58

Egbert W. Pfeiffer, Ph.D., University of California, 1954 came as Assistant Professor of Anatomy

Bertha L. Newman, M.A., University of Oregon, 1950 came as Assistant Professor

The Harley E. French Medical Library now estimates that they have more than 17,500 volumes and receive approximately 400 periodicals.

1960-62

Anatomy Faculty this year was as follows:

C.J. Hamre,, Professor and Head

H.E. French, Professor Emeritus

T. Snook, Professor

P. Woutat, Clinical Associate

V.L. Yeager, Assistant Professor

J.J. Taylor, Assistant Professor

D.D. Williams, Assistant Professor

Walter Bo, Robert Holland, and Egbert Pfeiffer had gone. Taylor came in with a B.A. from Hofstra College in 1953; M.S., Cornell, 1956; Ph.D., University of Buffalo, 1959. Williams came with a B.A. from Hastings College, 1944; M.S., University of Nebraska, 1948; Ph.D., University of Illinois, 1955. Taylor took the 301 Course for Nurses and the 204 Course for Physical Education and Occupational Therapy. The 302 Course, Principles of Histology, was taught by a "Mr. Petterson" which may have been a "James C. Petterson" listed as a Graduate Teaching Assistant this year.

Williams also joined the Gross Anatomy Course with Hamre, Yeager, Woutat and Assistants and Taylor taught the Neuroanatomy Course with "Assistants". With Bo and Holland gone, no name appears as instructor for the Endocrinology Course.

There is a general heading in the Bulletin this year for "Graduate Assistant, Fellows,

Secretaries, and Technicians" instead of the former categories of Graduate Students and Support Staff. Examination of this list of non-faculty personnel reveals that Department of Anatomy had suddenly grown considerably in terms of what appear to be graduate students. This increase apparently reflects the receipt of several training grants by School of Medicine.

The following were listed as sources contributing to the various basic science and clinical research programs:

American Cancer Society

American Heart Association

Becton, Dickinson & Co., Rutherford, N.J.

Damon Runyon Memorial Fund

Life Insurance Medical Research Fund

Louis W. and Maud Hill Family Foundations

National Institutes of Health, Public Health Service Nations Science Foundation

National Vitamin Foundation

North Dakota Cancer Society

North Dakota Heart Association

U.S. Atomic Energy Commission

United Fund of Grand Forks

Another list of funds supporting research "created by contributions from interested friends, organizations, and memorials:

University Cancer Research Fund

University Neurophysiology Research Fund

Dr. Lee A. Christoferson

University Heart Research Fund

Alpha Phi Sorority, Memorials

Diabetic Research Fund

Graduate Assistantships were announced as teaching assistantships or research assistantships. The stipend for an academic year of a half-time assistantship in the medical sciences was $1800 plus cancellation of all fees except the student service fee. Two types of research fellowships were available to medical students. Summer Medical Student Research Fellowships carried a stipend of $600 for eight to ten weeks. A Post Sophomore Fellowship for Medical Students who wished to take a year off to pursue a research problem in one of the departments of the Medical School paid a basic stipend of $3,200. Their fellowships were supported by the following listed sources:

National Institutes of Health

National Science Foundation

Tobacco Industries

Lederle Laboratories

Hill Foundation

There were eight names which would seem to fit the category of graduate students in Anatomy; Three in Bacteriology, ten in Biochemistry and seven in Physiology-Pharmacology. The following were the names in the Anatomy Department:

Eugene W. Goertzen - Graduate Teaching Assistant

James C. Petterson - Graduate Teaching Assistant

Werner A. Boade - National Defense Fellow

William E. Burkel - National Defense Fellow

Dean A. Hillman - National Defense Fellow

Dwayne A. Ollerich - National Defense Fellow

Harold S. Skojonsby - National Defense Fellow

Lowell A. Sether - National Science Foundation, Cooperative Graduate Fellow Ollerich was to return to the Department of Anatomy after getting a Ph.D. there and spending a post-doctoral period at University of Alberta. He ultimately became Chairman of the Department in 1972 and Associate Dean for Academic and Research Affairs in 1978.

Biochemistry Department was apparently searching for someone to fill the Hill Professorship this year since a blank space appears opposite that title in their faculty roster.

The Medical Library this year is said to possess more than 18,500 volumes. The Special Lecture Series for the 1958-1960 biennium included the name of Louis Geiger, Professor of History at UND who spoke on "The History of Medicine in North Dakota and the Medical School" and Leslie B. Arey, Professor of Anatomy, Emeritus, of Northwestern University, who spoke on "'Concepts of the Placenta." There were 28 speakers in this series for 1958-60 and their names and lecture titles can be found in the catalogue copy volume for the years 1960-62 which accompanies this narrative study.

Forty-two first year students are listed this year and 38 second year students including Reed Keller who was later to become Professor and Chairman of the Department of Internal Medicine. Thirty-eight third year students are listed and 34 fourth year students. Thirty-six are listed as Interns.

with a 1954 B.A. from St. Olaf's College and a 1961 M.S. from University of North Dakota. Brandell's teaching assignment is not listed, but "Mr. Petterson" is listed as teaching Anat. 302, Principles of Histology. A Dr. Williams is listed in the course descriptions as teaching Anatomy 204 for Physical Education and Occupational Therapy. No one by that name is listed in either the Anatomy Faculty Roster or the School of Medicine roster. The name is gone from the succeeding Medical School Bulletin.

Anatomy Department announced a new course this year numbered 508 and described as Electron Microscopic Techniques. No instructor is listed.

Nordlie filled the Hill Professorship in Biochemistry this year. Cardy left Pathology and Wasdahl became Acting Head and Associate Professor. Cardy may have retired. He received his M.D. in 1940. Fischer replaced Marwin as Head of Bacteriology this year.

The School of Medicine announced the award of $402,000 by the Department of Health, Education, and Welfare in 1961 for construction of three additional floors on the Ireland Research Laboratory Building. There would be 15,000 square feet of research space.

Department of Anatomy listed 13 people who were probably graduate students this year. Two were Graduate Teaching Assistants. Five were National Defense Fellows including, apparently, two women, four Pre-Doctoral Fellows on the P.H.S. Training Grant. There were also two Research Assistants. There were thirteen so listed also in Biochemistry, two in Microbiology (formerly Bacteriology), and five in Physiology-Pharmacology.

Diane Preiser is listed as Secretary in the Anatomy Department. Betty L. Lewis was

Histological Technician, Sue Scatt was Medical Technologist, and Mertinus J. Anderson was Diener.

The stipend for a 9 month academic year half-time graduate teaching assistantship was $1900 this year plus cancellation of incidental fee. For a student holding a Master's degree, the stipend was $2,200 plus cancellation of fees.

An announcement appears of the award of a U.S. Public Health Service Training Grant and of the availability in the Departments of Anatomy and Biochemistry of Fellowships with stipends ranging from $2,000 to $2,500 per year plus an allowance for dependents and payment of the incidental fee. These fellowships were in addition to the National Defense Graduate Fellowships of the United States Office of Education available in Anatomy and Biochemistry and announced for the first time in this issue of the Bulletin. These Fellowships were for 3 years, for U.S. citizens only, and provided a stipend of $2,000, $2,200 and $2,400 apparently in sequence plus $400 for dependents.

The Medical Library announces 23,200 volumes this year and 495 periodicals. There were 22 Lectures in the Special Series during 1960 and 1962. The list of speakers and titles is bound separately.

The $210 and $600 resident and non-resident medical student fees in this year's Bulletin are crossed out and replaced with $330 and $720 respectively. The change might have been made mid-way in the biennium.

Forty-four first year students are listed this year and forty-three second year students. There are thirty-five third year students, thirty-nine fourth year students and thirty-six interns.

An interesting announcement appears in the Bulletin this year for the first time headed Religious emphasis on Campus. It is quoted here in full:

RELIGIOUS EMPHASIS ON CAMPUS

"Realizing that students need more than a competency in specialized knowledge and skills, the University, though non-sectarian, encourages the development of mature spiritual convictions which will result in dedicated living while on campus and in consecrated service thereafter.

To assist in this development are numerous campus religious groups, each with its own program and its own facilities. The campus groups include: Canterbury Club (Episcopal), Gamma Delta (Missouri Synod, Lutheran), Inter-Varsity Christian Fellowship (Interdenominational), Lutheran Student Association, Newman Club (Catholic), United Campus Christian Fellowship (American Baptist, United Church of Christ, Evangelical United Brethren, and Presbyterian), Wesley Foundation (Methodist), and Young Women's Christian Association (Interdenominational). The University Religious Council, composed of representatives from these groups, coordinates religious activities of a joint nature and sponsors the Campus Conference on Religion.

The principal activities of the campus groups are the Sunday morning worship at the Student Center or in a Grand Forks church, the Sunday evening fellowship--including "cost" supper, recreation, worship, and program and varied activities during the week--including Bible study groups, prayer meetings, and seminar groups. Additional stimuli come from deputation teams, informal discussion, brief devotions at noon lunches, and choir rehearsals.

Where Student Centers exist they are usually considered a religious home on the

campus; their facilities are primarily for the continual use of the students, all day and every day during the academic year. These facilities include a chapel, a lounge, dining room and kitchen, a recreational room, a study room, classrooms, and perhaps library. A regular feature of several groups is the week-day noon lunches. A frequent activity is ping-pong or shuffleboard or informal get-togethers after University hockey games. Special features are films, dinners, musicales, dramas, and lectures.

The purpose of all these activities--religious, educational and social--is to provide a Christian Fellowship which will enrich the lives of those who participate and, through them, the general environment of the University Campus.

1964-66

The Anatomy Faculty was joined in 1963 by Frank N. Low, A.B. Cornell University, 1932 and Ph.D. Cornell in 1936 as Hill Research Professor of Anatomy. Another new name, Kenneth D. McFadden with a 1952 B.S. from Concordia College, and M.A.ED from Iowa State Teacher's College in 1958, and a Ph.D. from UND in 1964. He had been listed as a Graduate Student and Teaching Assistant in Anatomy in the last School of Medicine Bulletin. William E. Burkel with a 1960 B.A. from St. John's College, a UND M.S. in 1962 and a UND Ph.D. in 1964, was listed as a Research Associate.

The Anatomy Faculty roster was now:

Hamre

Snook

Low

Yeager

Taylor

Brandell

McFadden

Burkel

Woutat's name was not on the Anatomy Faculty Roster this year but it was to be found on the School of Medicine roster under the heading of Part Time Faculty.

Two new courses were announced in Anatomy with this issue of the bulletin. Anatomy 500 was described as Introduction to Research in Anatomy, a one credit course taught by "staff". Anatomy 510 was described as Readings in Special Problems in Anatomy and also supervised by "staff."

Gross Anatomy was 320 hours this year with 5 lecture hours and 15 laboratory hours per week. This course occupied the entire morning from 0800 to 1200 in the first two of four "bimesters". Histology-Organology 160 hours and Developmental Anatomy 48 hours were taught in the afternoons of the first two bimesters.

Neuroanatomy, 104 hours was taught in the third and fourth bimesters with Physiology and Biochemistry. Apparently this time allotment and scheduling had prevailed back to the 1950's. The course Psychobiology was called Human Behavior commencing with this issue of the Bulletin.

For the first time this year, a portion of the Oath of Hippocrates appears on the inside of the front cover of the Bulletin.

A three paragraph announcement of the Ireland Cancer Research Laboratory appears this year. It is described as a five-story building with 25,000 square feet attached to the

Medical School with a connection at each floor. The original gift of $100,000 by Guy and Bertha Ireland of Grand Forks is cited, as is the $402,000 provided by the National Cancer Institute to Cornatzer, Head of Biochemistry. Total construction costs are listed as $632,000 and it was said to contain "over $500,000 of scientific instruments provided from various research granting agencies". A list is presented of the various types of research to be performed on the different floors citing that the fifth floor "currently is reserved toward expansion of the laboratory facilities."

The announcement counts seven full-time Research Professors in the laboratory. Four of them were supported by the Hill Foundation of St. Paul with a grant of $300,000. Two of the Hill Professorships were in Biochemistry and assigned to Nordlie and Ya Pin Lee, one was in Anatomy and assigned to Low and one in Microbiology, but there is no indication in the Bulletin of who was assigned this latter Professorship.

In addition, the National Institutes of Health provides one career Training Award Professor in Biochemistry, one Professor from the Office of Education in Biochemistry and another Research Professor in Physiology from training grants in Cardiovascular Research. The announcement states that "National fellowships are providing funds for 42 full-time graduate students as well as 16 medical students to do research during summer months."

Anatomy Department listed 8 graduate students this year including three Teaching Assistants, three NIH pre-doctoral fellows and two National Defense Graduate Fellows. Biochemistry had 22 graduate students, Microbiology had four and Physiology-Pharmacology had six.

Priscilla Peavy Pastoor and Shirley Bachmeier were secretaries in the Anatomy

Department and Betty Lewis was Histological Technician. Research Technicians were Tobert Bowman, Lynne Colgan, Malva Johnson, and Dorothy Lingk. John Bichler was Diener.

The Special Lecture Series is bound separately, but among notables included in 1962-64 I wish to cite Harland W. Mossman the placentologist of Wisconsin, Wendell Stanley the virologist from University of California, Berkeley, and Arthur Kornberg, the Stanford DNA chemist. A total of 32 speakers gave 37 lectures in these two years. These lectures were apparently being paid for by the HEW and other grants.

Medical students fees were $330 for residents and $720 for non-residents this year. The Graduate Fellowship stipends were apparently the same as in the past Bulletin. The graduate teaching assistantship stipend was $1900.

Forty-six first-year medical students are listed for 1964-65. These would be students of the class of 1966 of the two year school. Thirty-six second-year students, the class of 1965, are listed. Forty-five third-year students and 40 fourth-year students. Thirty-four interns are listed.

1966-68

Anatomy Faculty listed for this biennium are:

Hamre

Snook

Low

Yeager

Ollerich

Schneider

Wack

Woutat

Taylor, Brandell, McFadden, and Burkel are gone, and three names appear:

Dwayne A. Ollerich, B.A., Augustana College, M.S. and Ph.D. University of North Dakota. He returned from a post-doctoral fellowship at University of Alberta as Assistant Professor and assumed the Neuroanatomy responsibilities vacated by Taylor.

Lawrence K. Schneider, B.A., University of Washington, Ph.D., University of Washington as Assistant Professor. He taught Gross Anatomy with Hamre, Yeager, Woutat, and Assistants.

Joseph P. Wack, B.A., University of Dayton, Ph.D. St. Louis School of Medicine. He came as Assistant Professor and taught Anatomy 201, Anatomy for Nurses, and 204, Anatomy for Physical Education and Occupational Therapy.

Department of Anatomy staff list contained the names of:

Elvina Rolette as Secretary

Betty Lewis, Histological Technician

Dana Groff, Research Technician

Dorothy Lingk, Research Technician

John Bichler, Diener

Frank Olma and Frank Nefs were Animal caretakers under Department of Physiology-Pharmacology.

There were 44 first-year medical students in the class of 1968 plus "3 re-entries" to second semester. Second year student roster (class of 1967) lists 43 students, third year (class of 1966) 41 students and fourth year (class of 1965) 36 including Jerry Hordinsky of Drake, ND who was to become prominent in space medicine at NASA Headquarters in Houston. Forty-seven from the class of 1964 are listed. The "class year" at this time was the year in which the class would finish the two-year UND program.

Department of Anatomy listed 13 graduate students including Edward C. Carlson who was to return later as Chairman of the Department. Biochemistry listed 25 graduate students and Physiology-Pharmacology, 14 including James Boelkins who was to return and chair the newly formed Pharmacology Department when it became independent of Physiology.

1968-70

Hamre retired as "Head" in 1967 and took the title of Director of Research and Development in Anatomy. Snook took over as Head and is so listed in the catalogue for this biennium. Yeager and Schneider are no longer listed in the Anatomy roster. John Oberpriller came in 1967 with a Ph.D. from Tulane and taught Histology. His wife Jean came in 1968 to teach Gross Anatomy. The roster this year also lists Jack E. Buss with an M.S. from University of Minnesota. His teaching assignment is not listed.

The names of Lewis, Groff, and Lingk are missing from the roster of Anatomy Staff and a new name, Richard Braaten appears as Histological Technician; Rolette is still secretary and Bichler, the Diener. The name of Ken Hardy appears this year for the first time as Medical Photographer. He is still so employed at this writing. His appointment was in the Department of Microbiology, but more recently it is in a new Department of Biomedical

Communications. Over the years, Mr. Hardy has contributed immensely to the teaching and research resources of the Department of Anatomy as well as to all Medical Departments.

The Anatomy Department lists 17 graduate students at this time. Only one was appointed as a Graduate Teaching Assistant. The rest were on Fellowships from either NIH or National Defense. Biochemistry listed 29, two of which were supported by Graduate Teaching Assistantships and the rest by NIH Training Grants, National Defense Fellowships, National Science Foundation, or as Research Fellows, in which case their source of support was not indicated but was probably Research Grant money.

Microbiology listed 10 graduate students, 4 of which were GTA'S, two as Research Assistants, one NDEA Fellow, and three as NIH Training Grant Fellows. Physiology and Pharmacology listed 15 graduate students, 4 of which were GTA's and the balance supported by North Dakota Heart Association, N.D. Tuberculosis Association, NASA, Cancer Fellowship, or as Research Fellows. Graduate Fellowships had stipends of $2200 to $2800/year plus waiver of fees.

The Medical Class of 1970 (first year) listed 47 students, class of 1969 (second year) listed 49 students, third year students, (class of 1968) listed 42, and fourth year class of 1967 listed 41. The latter class listed Theodore H. Harwood, Jr. the son of the Dean of Medicine. Forty-one former UND students are listed as Interns, the class of 1966.

The Medical Library cites possession of 31,000 volumes and 550 periodicals including the Nursing Library, housed in the same facility.

Fees were $390 per year for residents and $1,014 for non-residents during this biennium.

1970-72

Anatomy lost Wack and Buss in this issue of the UND School of Medicine Bulletin. Faculty list is now as follows:

Theodore Snook, Professor and Chairman

Christopher J. Hamre, Professor and Director of Research and Development in Anatomy

Frank N. Low, Hill Research Professor

Ken E. Nicolls, Assistant Professor

Dwayne A. Ollerich, Associate Professor

Jean C. Oberpriller, Assistant Professor

John 0. Oberpriller, Assistant Professor

Ann C. Haller, Instructor

Philip H. Woutat, Clinical Associate

Nicolls arrived in 1969 with B.A., M.S., and Ph.D. from Colorado State. He taught Gross Anatomy. Haller had a B.A. from Montana and an M.A. from North Dakota.

An Ann C. Haller had been a Graduate Student in Anatomy as listed in the Bulletin from the previous biennium. In the same roster of Anatomy Graduate Students, a Frederick R. Haller was also listed. A Fred Haller appears in the '70-'72 Bulletin as a second year medical student with an M.A. and Ph.D. from North Dakota. Mrs. Haller was listed as teaching Anatomy 210, Introduction to Anatomy and Anat. 204, Anatomy for Physical Education, Occupational and Physical Therapy.

This year, Anatomy 522, Neuroanatomy became Anatomy 741 titled Neurosciences. The course description depicts "closely related presentations of basic neuroanatomy, neurophysiology, neurology and human behavior. Emphasis is placed at all levels on the relationship between structure and function and on the application of relevant basic information to clinical neurology and human behavior. Dr. Ollerich and assistants plus physiology staff and assistants and neurology staff. The same course is listed as Physiology 751.

A corrected Medical School Bulletin lists 54 first year medical students, Class of 1972; 56 second year students, Class of 1971, 52 third year students, Class of 1970, 47 fourth year students, Class of 1969, and 43 students as Interns, Class of 1968.

The Anatomy Department had 10 graduate students on various support as described in the previous Bulletin. One of these students was Mark D. Olson, who was later to return to the Department as Assistant Professor.

Biochemistry had 15 graduate students, Microbiology 5, Physiology-Pharmacology, 13.

Anatomy Department listed Roletter as Secretary, Braaten as Histological Technician, and Bichler as Diener again this year.

Forty-seven guest lecturers are listed for this biennium, some from abroad. Apparently those lecturers were supported by the Training Grants which were supporting the large graduate student population.

Fees were $466 for residents and $1,140 for non-residents this year.

The Harley E. French Library cited 33,000 volumes in this issue of the Bulletin and received approximately 585 periodicals.

There is also a statement that a collection of papers, books, and instruments of historical value is gradually being built up.

George W. Starcher retired as President of the University in 1971 and this position was assumed by Thomas J. Clifford, M.B.A., J.D., who had been Vice President for Finance and a graduate of the UND School of Law. President Clifford was to provide a great deal of support to the School of Medicine during the difficult years of conversion to its four-year curriculum.

The School of Medicine descriptive brochure for this biennium is without a name, being called neither a Bulletin nor Catalogue.

1972-74

Theodore Snook resigned as Chairman of Anatomy this year and Ollerich took over this assignment. Snook continued to teach Histology and Embryology, however. Anatomy Faculty in this biennium was listed in what is now known as the Medical School Catalogue as follows:

Dwayne A. Ollerich, Associate Professor and Chairman

Christopher J. Hamre, Professor Emeritus

Theodore Snook, Professor

Frank N. Low, Hill Research Professor

Ken E. Nicolls, Assistant Professor

Jean C. Oberpriller, Assistant Professor

John 0. Oberpriller, Assistant Professor

John J. Malloy, Instructor

Phillip E. Woutat, Clinical Associate

Haller was gone as her apparent husband, a member of the Medical Class of 1971, transferred out to Louisiana for his 3rd and 4th years. Malloy is listed as an Instructor in Anatomy with a B.S. from North Dakota. He is not listed among the Anatomy Department Graduate Students this year.

The name of Donald L. Matthies, B.A. University of California, Berkeley, M.A. and Ph.D. University of California San Francisco does not appear on the roster this year, probably because he was recruited after the deadline for publication of the catalogue. He arrived in September, 1972, however, to direct the course in Gross Anatomy which he designed as a new course. With the assistance of Drs. Jean Oberpriller and Ken Nicolls a number of innovations were introduced, including some general functional anatomical lectures designed to bring members of the First Year Class to some degree of equivalence in general biological knowledge. This was felt to be desirable because of the increasing diversity of educational backgrounds of incoming classes, both medical students and graduate students. In 1973 the timed laboratory examination was abolished. It was considered by Dr. Matthies to be undignified in the first place and a poor way to measure students anatomical knowledge in the second place. Instead of jumping from one specimen to the other in response to a bell the students were permitted to go to any specimen they chose and to examine it for as long as they chose. The student honor system appears to have worked well in the sense that there was never a complaint of answer copying in the 10 years that examinations were conducted in this fashion.

Another innovation was the introduction of a comprehensive "objective" examination at the end of the course. This examination took the form of a multiple choice exam, a type which

was never much admired by Dr. Matthies but is used in National Board Exams. This exam provided the students with some experience in dealing with multiple choice exam formats. Furthermore, its comprehensive nature induced students to review the entire semester's anatomy for the purpose of early reinforcement.

Approximately 10 laboratory quizzes were presented during the 16 week semester. It was the intent of this program to encourage students to keep current and not fall behind in their dissection and study schedules. It was felt that this device was effective but its effectiveness was never tested by abolition of the testing program for a period of time and comparisons made. Some faculty seemed not to want to risk total abolition of the quizzing program. Curriculum revision in 1981 placed all testing scheduling in the hands of a Curriculum Committee and so the quiz program was terminated. No comparisons could be made with semesters in which quizzes were given because of the revised curriculum which, among other changes, included a reduction of hours for the course from 240 to 200 hours.

While under Dr. Matthies' direction, Gross Anatomy students could select whatever reading text, reference book, and medical dictionary they chose. Grant's Atlas and Grant's Dissector were assigned, however, as was Lachman's "Case Studies in Anatomy." Each year when students were ready to purchase their textbooks for Gross Anatomy, the staff would conduct a "Book Fair" which consisted of a display of all of the various Anatomy texts which were in their personal collections. In this way students could examine the books and decide on which of the optional texts to purchase. They also had an opportunity to see the great variety of Anatomical texts which are available for general anatomy and also the specialty texts.

A strong emphasis was placed on Radiological Anatomy with the help of Dr. Philip

Woutat, Clinical Associate in Anatomy and a Radiologist at the Grand Forks Clinic for many years. This emphasis was felt important because of the frequency of medical student training assignments to small rural hospitals which lacked radiologists. This program was apparently successful since a number of students who transferred to Minnesota for their third and fourth year returned to report that their ability with Radiological Anatomy was better than that of their Minnesota-trained colleagues.

With the increasing hospital use of Computer Assisted Tomography, the Anatomy staff, about 1955, took the old set of cross sections of the human body down from the shelf and reintroduced them in the Gross Anatomy Course. Professors Hamre and Snook had prepared and mounted them earlier but they had dropped out of the teaching program during one or another of the various curriculum time cuts. The story is told that the source of the full body cross sections was the unclaimed body of an individual who was found dead in the nearby railroad yard. He reportedly had been shot by a "girlfriend" and his body brought to UND under North Dakota's Anatomy Law which provides for the disposition of unclaimed human remains. The remains used in this teaching aid were named "Johnny" from a folk song which describes an individual with a similar history.

The story goes on to describe how Hamre and Snook embalmed the body and stored it until winter in order to freeze it on the roof of the Medical Science Building whereupon they sawed it into one-inch thick sections for later mounting and display. However they did it, (in the "dead of night", of course), they made the sections remarkably close to the plane of sections of a series of labelled, commercial diagrams so that both can be used in parallel in the teaching program. They have been most useful and are considered to be very valuable to the

current teaching of Gross Anatomy.

Hamre became Emeritus Professor in 1972 and received an Honorary Doctor of Science Degree. He apparently gave up his duties as Director of Research and Development in Anatomy. He also gave up lecturing in Gross Anatomy. He attended all lectures, however, and he was at first clearly fearful of what might happen to the course to which he devoted nearly all of his teaching time and energy for so many years. The course was now in the hands of two young junior faculty members and a Course Director, whom he did not know, from San Francisco. Dr. Matthies occasionally felt some relief that Dr. Hamre slept so peacefully in his customary seat by the lecture room door during his lectures. Had he not found things to be going well he would probably have been more wakeful. Hamre helped in the laboratory, though.

During these years he could be seen wandering from table to table helping students with their dissections as he had in the past. In 1973, however, Campos, the custodian, died and left his body to the UND bequeathal program. Hamre had quietly requested that this body be placed at the far western end of the dissecting room, and he never moved after that from the eastern end of the room. They apparently had worked together for a long time, mostly at night and had become friends.

A story which still circulates on the campus is of the time when the Anatomy Department moved to the then new Medical Science Building from the "Old Science Building" in 1949. It seems that the stored cadavers were moved by truck to the new quarters, but one was left behind for lack of space in the truck. Rather than wait for the unloading and return of the truck, Campos, the custodian, is said to have picked up the cadaver, placed it on his

shoulder and carried it across the campus.

Fortunately, it was night ("the dead of night") and not many people witnessed this event, but the darkness must have made it a quite eerie sight to those who did.

In 1973, the Anatomy Department was visited by an attractive young lady with the professional name "Peaches and Cream." The way this visit came about will be described: five or six students had asked Dr. Matthies if they could have some special instruction in surface Anatomy. They suggested inviting one of the local "strippers" in for a demonstration-type class. Dr. Matthies responded that such a presentation might be possible, but that it would have to be done with dignity and off-campus. He said that use of a professional model would be a better way and then it could be done in the lecture room during regular class time. The matter rested there for about two weeks. Then one Monday morning, Dr. Matthies came into his laboratory at about 0745 to prepare for lecture and it was announced by the students that his morning's lecture could commence with a presentation of surface anatomy.
Dr. Matthies asked if some students had volunteered to serve as demonstration subjects. The students explained that they had, on the previous Saturday night, engaged for this morning the services of the above described young lady and that she was at this moment present in the lecture room and ready to go to work. Dr. Matthies, somewhat doubtful, peered into the lecture room" and there indeed stood "Peaches and Cream" with considerable surface anatomy already being displayed. He felt that the School of Medicine might not be so enthusiastic about this supplement to the curriculum so he informed the students that they would have to conduct this part of the course on their own. A fortunate decision because a few minutes later he was visited by a livid, enraged Professor Hamre demanding to know if Dr. Matthies had

"brought in the stripper." The state of Dr. Hamre's agitation made Dr. Matthies grateful that he, in fact, had not known about the situation until he arrived in his laboratory. Professor Hamre seemed relieved to hear this also, and his agitation subsided in due course.

The students went on with their demonstration and only fragments of information leaked out of the lecture room to reveal the nature of this academic event. One could imagine how it went by hearing frequent loud male laughter from the lecture room and, one by one, the emergence of the female students in an apparent high state of pique. Administration officials also were obviously relieved to hear of the student-only conception and execution of this scholarly event in the history of the School of Medicine. A photo of Adjunct Professor "Peaches and Cream" can be found in the Appendix to this paper so that this contribution to medical education might be recorded for those who follow us.

The Anatomy staff did respond to the student request for instruction in surface anatomy, but in a different way. A series of projection slides were prepared by Ken Hardy, the Medical Photographer, from various textbook sources which specialized in illustrations of surface anatomy. These slides were incorporated into the collection of slides shown during appropriate lectures on the anatomy of the various regions of the body. Mr. Hardy also provided the department with an extensive collection of anatomical slides which have received much use over the years. He continues to, provide that valuable service to the Department through the Biomedical Communications Division of the School of Medicine.

Courses in Anatomy for this Biennium were:

Anatomy 204, Anatomy for Paramedical Personnel. This course seems to have been a fusion of Anatomy 201, Introduction to Anatomy, in which a cat was dissected, and Anatomy

204, Anatomy for Physical Education, Occupational and Physical Therapy, in which human dissections were demonstrated. These latter courses were the undergraduate Gross Anatomy courses offered in the 1970-'72 biennium. The new 204 course was presented for 3, 4, or 5 credits, depending upon which of several laboratory options were elected. This course was taught by Malloy with the help of GTA's and Anatomy staff.

Anatomy 302, Principles of Histology, four credits. This course was probably taught by Malloy also. The course description remains substantially the same as in the last biennium and is an undergraduate course. This biennium, therefore, offered only the two undergraduate courses.

Under the heading "Courses for Medical Students":

Anatomy 641, Histology and Organology, 6 credits. Taught by Snook and Oberpriller,

Anatomy 642, Gross Anatomy, 8 credits. Taught by Matthies, Nicolls, and Oberpriller, i.C., with Radiological Anatomy by Woutat.

Anatomy 643, Developmental Anatomy, 2 credits. Taught by Snook and Oberpriller, J.0.

Anatomy 741, Neurosciences, 4 credits, also listed as Physiology 751. Taught by Ollerich with help from Neurology and Physiology Departments.

Under the heading "Advanced and Research Courses":

Anatomy 500, Introduction to Research in Anatomy. One credit.

Anatomy 505, Seminar in Anatomy. Two credits.

Anatomy 507, Techniques for Histological Research.

Anatomy 508, Electron Microscope Techniques, 3 credits.

Anatomy 509, Problems in Development, 2 credits.

Anatomy 511, Experimental Hematology, 4 to 6 credits. If presented at all, this

course would have been taught by Hamre who was now Emeritus Professor. The offering was to be dropped in the next biennium.

Anatomy 512, Cellular and Extracellular Fine Structure, 1 credit, taught by Low.

Anatomy 590, Readings in Special Problems in Anatomy, 1 to 3 credits.

Anatomy 591, Advanced Anatomy, credits arranged.

Anatomy 593, Research in Anatomy, credits arranged. This course is described as follows: Research is offered in the fields of gross morphology, histology, embryology, hematology, endocrinology, and neuroanatomy.

Anatomy 595, Prosection, credit arranged.

It should be noted that all of the undergraduate courses and courses for medical students have been staffed over the years also by variable numbers of Graduate Teaching Assistants. The names and dates of these important contributors to Anatomy Instruction are to be found elsewhere in this paper.

Graduate students in Anatomy listed for this biennium are:

Delmas J. Allen, Graduate Teaching Assistant

Miles W. Cloyd, Graduate Teaching Assistant

Robert S. Crissman, NIH Training Grant Fellow

Donald R. Fowler, NIH Training Grant Fellow

Larry P. Larson, Graduate Teaching Assistant

Thomas M. McNeilis, NIH Training Grant Fellow

Dennis E. Morse, National Defense Fellow

Mark D. Olson, NIH Training Grant Fellow

David N. Paddock, NIH Training Grant Fellow

Note that a new GTA position was awarded to the Department this biennium, perhaps

reflecting the increase in size of the medical student first year class from the years 1953 to 1963 as well as the increased demands of undergraduate teaching.

Biochemistry had 11 graduate students this biennium with only two supported as GTA'S. Microbiology had 5 with 1 GTA and Physiology-Pharmacology had 8 with 3 GTA's plus one GTA whose support was derived from a new grant which was titled "Man in the Sea Project" and awarded by the Office of Naval Research. This project eventually brought approximately about 1.8 million dollars to the School of Medicine. It was in force from 1972 to 1978 and the research which it sponsored focused on the physiology of mammals maintained under hyperbaric conditions.

During this biennium the U.S. Government awarded funds for the construction and support of a United States Department of Agriculture Human Nutrition Laboratory, the mission of which was to study levels of human needs for trace elements. It was under the direction of Dr. Harold Sandstead and until 1984 when Sandstead left and was replaced by Dr. Les Klevay. As its support, resources, and staff grew it was to become closely involved with the School of Medicine Research and Teaching programs. A number of Anatomy Department graduate students derived support from this facility and also did substantial amounts of their research using its resources. Many dual faculty appointments of Nutrition Lab and School of Medicine developed from this relationship.

The school began to reorganize itself into a full four-year curriculum utilizing community physicians as clinical faculty under an Area Health Education Center grant. A separate listing of clinical faculty appears in the catalogue this biennium. One hundred fifty-nine names are on this list.

Dr. Stanley J. Brumleve became Chairman of Physiology-Pharmacology in 1972 and continues in that post at this writing.

Debbie Norlin is listed as Anatomy Secretary this biennium. Patricia Leedahl and LaRue Roth are listed as Histological Technicians. Also arriving at the Department after the publication deadline for the catalogue was Marianne Matthies as Histology Technician. She is the wife of Dr. Matthies of that Department. Dennis Brevik is listed as Diener this year.

Tuition and fees for this biennium were $486 for residents and $1,554 for non-residents. Non-residents were discouraged from applying, but there is a note in the catalogue stating that if there are any places in the first year class unfilled by residents of North Dakota, then students from regional states not having medical schools would enjoy preference. These states are Montana, Idaho, and Wyoming. A caveat on transfer opportunities appears for the first time in the catalogue for this biennium. It acknowledges that to date all UND students have successfully transferred to full four year medical schools in order to finish their 3rd and 4th year of training but some difficulties are anticipated in transferring UND basic science students. This situation was said to be the result of several factors, including a general increase in "freshman enrollment," low attrition rates, foreign-educated American students seeking placement in third year classes and a growing number of graduate students entering medical school with advanced standing. It was stated that completion of the two year program at UND does not necessarily guarantee placement in a degree-granting school. "Sustained academic excellence remains the prime requisite for ensuring transferability." This concern for the "transferability" of graduates of the two year UND Basic Science Medical School was clearly part of the reason for undertaking the program of expansion of the school to a degree-

granting, or four year curriculum. This drive was to take the form, over the next few years, of feasibility studies, legislative consultation, multi-million dollar Federal grant support under the A.H.E.C. program, interim contractual arrangements with University of Minnesota School of Medicine in Minneapolis and Mayo Clinics in Rochester for accepting a part (35 students) of UND graduating class, establishment of a clinical program with recruitment of clinical faculty, establishment of Community Health Centers, establishment of Residency programs, and the setting up of a clinical affiliation with the Veteran's Administration Hospital in Fargo. Again, this latter affiliation produced multi-million dollar grant support from the V.A. An affiliation was also established with various hospitals in the state as well as the Air Force Base Hospital near Grand Forks.

Meanwhile, in 1972-'74, curriculum revision was under way in parallel with national trends. Such revision was for the purpose of providing students with a greater selection in time and curriculum for the purpose of preparation for experiences to be expected at transfer schools.

An announcement on Advanced Standing appears for the first time in the Catalogue for this biennium. It states that UND graduate students in the Basic Sciences will no longer be considered for admission to the second year class. It states that graduate students must formally apply for admission to the School of Medicine on a competitive basis with other applicants. The statement also includes the requirement for completion of the graduate degree prior to the desired enrollment date. Stories handed down from the years before the arrival of this author indicate that the Graduate Program was a significant recruitment resource for the School of Medicine. The disparity between the number of Master's degrees and Ph.D. degrees

awarded by the Basic Science Departments would seem to support these stories. The new regulations seem not to have stemmed this flow entirely, however. More recently students have gone on to earn the Ph.D. before applying to the School of Medicine.

Prerequisites for entry to the School of Medicine are listed as "Academic Achievements" and they stipulate a minimum of 90 semester hours with the following requirements:

Chemistry	24 hours
as	
Inorganic	8 hours
Qualitative analysis	4 hours
Quantitative analysis	4 hours
Organic	8 hours
Biology	8 hours
Physics	8 hours
Language Arts (English, Speech)	6 hours
College Algebra	3 hours

Among the electives cited which could fill the remainder of credits left over from the general university requirements and those of the School of Medicine is "Business."

Again, students are "strongly urged" to take Part I of the National Board Examinations in Medicine at the end of their second year citing the fact that many medical school now list these examinations as a transfer entrance requirement. They are still not required at UND, however, during this biennium.

There were 56 visiting lecturers during the previous biennium.

Harwood resigned as Dean effective January, 1973. He was replaced by an Acting Dean, John W. Vennes, of Microbiology, who was Associate Dean for Curriculum at that time. Vennes would remain in the post of Acting Dean for two years.

Sixty-three first year students are listed in the Catalogue for this biennium in the class of 1974. Second year students, Class of 1973 lists 60 students, third year, Class of 1972 lists 53, and fourth year, Class of 1971 lists 55. Interns, as Class of 1970, were numbered as 52.

The Medical Library lists 34,000 volumes this year and 575 periodicals.

The Catalogue has been reviewed in somewhat more detail for the 1972-'74 biennium than for past years. Changes were occurring and more were imminent, including five years of instability in the office of Dean of Medicine. Most of these changes affected the Department of Anatomy either directly or indirectly and the more important of them will be recounted below as we proceed through the 1970's.

1974- 1976

Anatomy Faculty for the 1974-76 biennium was listed as follows:

Dwayne A. Ollerich, Ph.D., Chairman, Associate Professor

Christopher J. Hamre, Ph.D., Professor Emeritus

Theodore Snook, Ph.D., Professor

Frank N. Low, Ph.D., Hill Research Professor

Donald L. Matthies, Ph.D., Associate Professor

John 0. Oberpriller, Ph.D., Associate Professor

Bruce C. Albright, Ph.D., Assistant Professor

Ken E. Nicolls, Ph.D., Assistant Professor

Jean C. Oberpriller, Ph.D., Assistant Professor

John Malloy's name is missing this time from the Faculty Roster, but he did not leave the Department. His name appears in 1973 on the Anatomy Graduate Student Degree List as receiving the Master of Science Degree and again on the same list in 1975 as receiving the Ph.D. He had taken a year off from his graduate work to direct the Department's undergraduate courses. Albright was recruited from Medical College of Virginia and West Virginia University and appointed to help with the Neuroscience course and to direct the undergraduate program in Gross Anatomy.

Most of the course offerings remained the same with the exception of the 511 course in Experimental Hematology which was dropped.

New numerical designations were assigned to the 600 and 700 series so that Anatomy 641, Histology and Organology became 601, 642, Gross Anatomy became 602, 643, Developmental Anatomy became 603, and 741, Neurosciences became 701. Three additional "Course" designations were assigned: Anat. 996 as Continuing Enrollment, Anat. 998, Thesis, Anat. 999, Dissertation. These designations provided continuous enrollment for students who had finished their course work and were continuing to work on their research, their Master's Thesis, or their Doctoral Dissertation. The Microbiology Department received the University Research Award in 1974.

A number of points of interest are evident upon examining the catalogue for this biennium and some of them represent significant changes from the past. Admission prerequisites, now described as "Academic Accomplishments" instead of Academic Achievements, as in the last catalogue, reflects a reduction in the hours of Chemistry required

from 24 to 20 hours. In the last biennium Inorganic (8 hours) and Qualitative Analysis (4) were listed separately. This year they are combined into Inorganic and Qualitative, 8 hours.

No mention is made of National Board Part I exam, this year, either as urging students to take the exam or requiring them to do so.

Under the heading Transfer, this year appears the following statement: "As long as the enrollment remains at its current level it will be necessary for approximately one third of each sophomore class to transfer to other four-year schools to obtainan M.D. degree." The statement about not necessarily guaranteeing transfer also appears and, "Regularly enrolled students in the UND School of Medicine have first choice for the forty places available in the 2:1:1 program." This latter formula signifies the two years to be spent at UND plus one year in Minnesota and then the fourth and final year back in North Dakota, but at one of the four regional Area Health Education Centers which are in Grand Forks, Fargo, Bismarck and Minot.

Four options are listed for students at the end of their second year:

1. The student may enter the 2:1:1 program for two years (4 semesters) and pursue a Doctor of Medicine Degree from the University of North Dakota.
2. The student may transfer to another School of Medicine.
3. The student may pursue studies in one of the departments of a graduate school (leading to an advanced degree).
4. The student may, after obtaining an advanced degree in graduate school, re-enter the 2:1:1 program.

It was necessary to make this choice at the beginning of the sophomore year. "Each student meets with the Office of Student Affairs at this time to finalize an individual program."

Faculty Advisors were now assigned to all students at the beginning of each academic year.

An elective course in Forensic Pathology was offered this year for 1 credit. Elective courses were offered for 4th year students in the various regional AHECs in Grand Forks, Fargo, Bismarck, and Minot in several Clinical Departments.

The Catalogue for the last biennium described the Clinical Program on two pages with minimal course descriptions and the seven clinical faculty listed together. In the catalogue for the 1974-76 biennium considerable space is devoted to descriptions of the new Clinical Departments.

Community Medicine is now a separate department chaired by Robert Eelkema, D.V.M., M.S., M.D. There are three other faculty members, Gustafson, Brousseau, and Knutson.

Family Medicine is now a separate department chaired by E.P. Donatelle, M.D. Part-time faculty, mostly community physicians make up the rest of this department.

Internal Medicine was, and is at this writing, chaired by Reed Keller, M.D. whose father years before had taken UND students on clerkships in the Rugby area. Three other faculty members are listed, Harley, Reiff, and Foster, but part-time faculty are not.

Neuroscience was chaired by Lee A. Christofferson, M.D. and its part-time faculty were not listed "because of the reorganization made necessary by the expanding clinical activities of the School of Medicine."

Obstetrics and Gynecology was chaired by Preston V. Dilts, M.D., with unlisted part-time faculty.

Pathology, as described earlier, was chaired by Wasdahl and the department included Saiki as Emeritus Professor, Nelson, the Associate Dean, Saumur, Dillenburg, Fillipi,

Simonson, Cooley, Eylands, Hipp, Larson, and Robb.

Pediatrics was chaired by Howard A. Joos, M.D. with David M. Holden, M.D., as Associate Professor. Part-time faculty were not listed.

Physical Medicine and Rehabilitation was chaired by Donald Barcome, M.D., with unlisted part-time faculty.

Surgery was chaired by Duane F. Pausegrau, M.D. as Acting Chairman. The department is described as being now in its earliest embryonic stages of development. Again, part-time faculty were to be listed later in a separate publication.

A section on Allied Health Curricula with the subheading of Medical Technology now appears separately, directed by C.J. Dillenburg with the help of Saumur and Fillipi of Pathology, Luper of Biochemistry and Simonson, Larson, and Robb of Pathology, and Anders and Stokke of N.D. State Public Health Laboratory, and Tankersley of United Hospital. Physical Therapy is now listed under Allied Health Curricula in the School of Medicine, It is chaired by H.C. Wessman, M.S. and lists Gaebe, Koch, McDonald, Meyer, and Rud as faculty.

It is clear that the Clinical Departments were just being organized at this time. The program of these departments was to utilize practicing community physicians as faculty and recruiting them was apparently taking a considerable time. The difficulty in finding a permanent Dean of Medicine was probably not helping this process. The School had 5 deans in 6 years during this and adjacent biennia. It was apparently the plan to publish a new and complete Clinical Faculty Roster when recruitment and negotiations had been accomplished.

Duties of Faculty Committees are announced in the Catalogue for the first time this biennium. An Executive Faculty Council is described as being comprised of

departmental chairmen and deans and is the body responsible for general policy-making. "In addition, the total faculty has ultimate decision making capabilities regarding medical school issues".

A number of committees in the School of Medicine are described as "responsible to and make decisions for the Medical School Faculty".

The Admissions Committee is responsible for selection of all students to the School of Medicine.

The Committee on Scholastic Standards monitors students' academic performance and determines the students' suitability for continuation in the School.

A Committee on Academic and Professional Qualifications determines the rank and suitability of all new faculty. "This committee is also responsible for faculty promotions and tenure". It is not clear whether this last statement was simply poorly phrased or if it represented a misunderstanding of the concept of academic tenure. The Committee may recommend tenure, of course, but at this Institution only the Board of Higher Education can confer tenure; and withdraw it. There was at least one case during the mid-1970's in which the activities of this committee indicated that it did not understand clearly its role in tenure procedures. The Committee was apparently set on course shortly after Tom Johnson became Dean in 1977.

The Curriculum Committee recommends revisions and day-to-day changes in the academic programs.

The Financial Aids Committee works with the student in gaining scholarships and loans.

The Chief Librarian is assisted by the Library Committee in carrying out activities in

bio-communications.

The Committee on Research handles all intramural research funds and acts on requests by faculty members and establishes policies and procedures for dispersal of these funds.

The Student Recognition Committee carries out the functions of giving recognition to students who have, while in residence, made a meritorious achievement.

It is stated that most committees in the School of Medicine have student representation and students have a vote equal to that of other members of the committee. With regard to student representation on committees, it is pointed out in the catalogue that "medical students each year elect voting representatives to the School of Medicine committees on curriculum, admissions, honors and awards, student loans and scholarships, and scholastic standards".

Fees were $605 for residents this biennium and $1,455 for non-residents.

Medical Library holdings were 35,000 volumes and 525 periodicals.

It seems that the extensive announcements of Clinical Courses and Departments in the Catalogue this year required space at the expense of listing medical students by Class, graduate students by Department and support staff by Department. A supplement dated 1975 was published, however, which contained student and personnel lists as well as class schedules. The Anatomy Department personnel list includes:

Debra Beck, Secretary

Debra Ford, Clerk-typist

Gordon Greene, Laboratory Technician II

Marilyn Lindvig, Chemist I

Marianne Matthies, Laboratory Technician I

Graduate Students in Anatomy were:

David Bader, Graduate Teaching Assistant

Christopher Bates, Graduate Teaching Assistant

Stephen Buell, Graduate Research Assistant

Christopher Dvergsten, Graduate Teaching Assistant

Curtiss Hunt, Graduate Research Assistant

Soo-siang Lim, Graduate Teaching Assistant

Larry Litke, Graduate Research Assistant

Randall Merchant, Graduate Research Assistant

Bruce Persky, Graduate Teaching Assistant

Lillian Repesh, Graduate Teaching Assistant

Paul Stagno, Graduate Research Assistant

There were 15 graduate students in Biochemistry, 6 in Microbiology, and 11 in Physiology-Pharmacology.

There were 68 first year medical students, 63 second year students including John Malloy, who took his Ph.D. in Anatomy this year, 42 third year students including Kevin Fickenscher who was to return to the School of Medicine on the faculty of Family Medicine and as Director, Office of Rural Health and 40 fourth year students including Lee A. Christofferson of Fargo, Karen Engebretson and David Engstrom, all of whom were cited elsewhere in this paper.

Gary Dunn, M.A., is listed as Associate Dean for Community Affairs during the 74-76

biennium. He was later to become Associate Dean for Planning and Development and then Associate Dean for Administration and Development.

The search for a Dean produced Richard E. Davis, M.D., in July of 1975. Davis was also named Vice President for Health Affairs. He resigned in April of 1976, however, so that his name does not appear in any of the biennial catalogues.

1976-78

Anatomy Faculty Roster was presented in a different format this year:

Professor:

Low, Frank N. (Ph.D.)

Ollerich, Dwayne A. (Ph.D.)

Snook, Theodore (Ph.D.)

Associate Professors:

Matthies, Donald L. (Ph.D.)

Oberpriller, John 0. (Ph.D.)

Olson, William H. (M.D.)

Assistant Professors:

Albright, Bruce C. (Ph.D.)

Oberpriller, Jean C. (Ph.D.)

Instructor:

Litke, Larry L. (M.S.)

Ollerich was promoted to Professor and Hamre died in 1976, leaving three Professors. Nicolls left the department and Gross Anatomy and was replaced temporarily by Larry Litke

who had received his Doctorate in the Department this same year. He supervised the 204 course and also took some of Nicolls responsibilities in the Gross Anatomy course. Nicolls was teaching in Arizona at last contact.

Olson, with an appointment of Professor, was head of the Neurology Division in the Neuroscience Division and was based at the Neuropsychiatric Institute in Fargo. He had asked for a joint appointment in the Department of Anatomy and, because of his involvement with the Neuroscience Course to which the Anatomy Department contributed, he was appointed as Associate Professor of Anatomy also. He stayed only about four years with UND.

Hamre had been in failing health for several years and so the Department Program did not feel his loss acutely, but certainly the Department personnel did. His life had been intimately entwined with the developmental fortunes of the department as well as with those of the University as a whole during 28 years of substantial change. He came to UND School of Medicine in 1948 as Professor and Head of the Department of Anatomy. He then became Dean of the Graduate School and Director of Summer Sessions in 1957 until 1967 when regulation required his retirement from administrative responsibilities. In addition to these posts, Hamre established a training program in Anatomy with support from NIH and NSF. Many graduate students were supported by those Training Grants in Anatomy and other departments. He also established special Air Force training programs under the Air Force Institute of Technology at the Minot and Grand Forks Strategic Air Command bases.

Prior to coming to UND, Hamre had spent several years at the University of Minnesota working with Edward Boyden on bronchopulmonary segments of the human lung. Prior to

Minnesota he had been in Hawaii where he took his first post-doctoral position in 1930 and subsequently became Professor of Zoology and head of that department. He also had undertaken other administrative posts while on the Islands.

In addition to his interest in the anatomy of the lung, Hamre had published work on differential blood counts related to age and on lathyrism, the spastic paraplegia found in some parts of Africa and India resulting from high dietary intake of certain leguminous plants. His contributions to the University were acknowledged in 1973 in the form of the award of an Honorary Doctor of Science Degree.

The only course change in Anatomy this year was the appearance of a new offering, Anatomy 322. It is described as a 5 credit course which has been designed specifically for junior occupational therapy and physical therapy students. It included dissection of the human body and lectures on specific topics in both gross and neuroanatomy. Apparently it was split off from Anatomy 204 and directed to students in the above two professional specialties, although the Anat. 204 course "Anatomy for Paramedical Personnel" was still being described as oriented to majors in nursing, majors in physical education, physical therapy and occupational therapy.

Clinical Faculty Rosters are included in the catalogue this year and are described briefly here:

Family Medicine was still chaired by Donatelle as Professor, six Associate Professors, two Assistant Professors, and one Instructor. There are listed 108 Clinical Associates and these, of course, represent the Community Physicians who had agreed to assist in the training program from the location of their private practices which are scattered throughout the state.

Internal Medicine is chaired by Keller and lists four Professors and one Emeritus Professor (Haunz of Grand Forks) 10 Clinical Professors, including Olmsted, cited above, a graduate of the School, and Sanstead, the Director of the Human Nutrition Laboratory. There is one Associate Professor, John A. Swenson, the Director of Student Health. There are 11 Associate Clinical Professors, four Assistant Professors, 15 Assistant Clinical Professors, one Instructor and 87 Clinical Associates.

Neuroscience was chaired by Christofferson and listed five Professors, two Clinical Professors, two Associate Professors, seven Associate Clinical Professors, 18 Assistant Clinical Professors, and 33 Clinical Associates.

Dilts had left Obstetrics and Gynecology and the department was now chaired by Michael E. Yannone whom the author of this paper had known at the University of California San Francisco. Yannone claimed to have come here to work with Dilts and had not known that Dilts was planning to leave. Accordingly, Yannone did not stay very long. This was a loss to School of Medicine because Yannone had a good start in research while at UCSF. There was one Associate Professor, Wallace W. Nelson who was also Associate Dean for Student Affairs. There were eight Associate Clinical Professors including Richard Leigh whose father Ralph had served the School of Medicine in such a capacity. There were 16 Clinical Associates. Pathology, which is at all times both a Basic Science and a Clinical Science Department lists Wasdahl as Chairman and Professor and Saiki as Professor Emeritus. There are four Associate Professors, three Assistant Professors, three Teaching Fellows, five Instructors, and nine Clinical Associates.

Pediatrics had no listed chairman in the Catalogue for this biennium. Joos had

apparently gone. There were two Associate Clinical Professors, one Assistant Professor, three Assistant Clinical Professors, and 23 Clinical Associates.

Physical Medicine was chaired by Donald Barcome with one Clinical Professor and one Clinical Associate.

Surgery is chaired by Neil R. Thomford who is also listed as Acting Dean. There are three Clinical Professors, eight Associate Clinical Professors, 21 Assistant Clinical Professors, and 103 Clinical Associates. Although the location of each of these full-time and part-time faculty is not cited, they, like their colleagues in other Clinical Departments, are scattered over the state as a result of the unique structure of the UND School of Medicine.

Allied Health Curriculum now consists of Medical Technology directed by Dillenburg of Pathology with 9 faculty members, and Physical Therapy chaired by Wessman as Associate Professor with one Assistant Professor, two Instructors, 16 Clinical Faculty, and 20 Supervisors of Clinical Experience.

A description appears for the first time on page 7 of the Catalogue for the organization of the Area Health Education Center system. It describes the preceptorship arrangement between Community Physicians and fourth year students. The description, although concise, is more extensive than should be included in this paper.

Prerequisites for admission to the School of Medicine, cited again as "Academic Accomplishment" consists of two changes in this biennium, the addition of three units of Psychology/Sociology, and 3 units of genetics.

An opportunity for Medical Students to take a leave of absence is announced for the first time this year. It would be granted to "students in satisfactory academic standing prior to

onset of illness, personality [sic] difficulties, financial stress, or reasons of similar importance".

Fees were $1,117 for residents this year and $1,965 for non-residents.

The Medical Library held 35,000 volumes and 525 periodicals.

Neil Thomford was listed as Acting Dean commencing with the April, 1976 resignation of Davis. Thomford was also Professor and Chairman of Surgery. A search was mounted at this time for a permanent Dean and this search produced Tom Johnson, M.D. in July, 1977. Johnson came to UND from Michigan State School of Medicine where he had some administrative experience.

The name of Conny Nelson, Ph.D. appears for the first time as Vice President of the University for Academic Affairs. He was, in a few years to become engaged in a number of controversies, both campus-wide and with the School of Medicine. The School of Medicine subsequently was withdrawn from jurisdiction of the Vice President for Academic Affairs and became responsible directly to the Office of the President of the University. School of Medicine thereby lost, at least to some degree, access to the main stream of academic policies and traditions of the general University. Curiously, School of Law remained under jurisdiction of the University Vice President for Academic Affairs.

Theodore Snook retired and became Emeritus Professor in 1977, but this announcement could not, of course, be entered into the Catalogue for biennium of 1976-78.

Graduate students and staff are not listed in the catalogue for this biennium but were listed in the Supplementary Directory published for 1978-79. The roster was the same and can be consulted in the chapter which follows.

At this point another note is appropriate about the contributions of graduate students to

the teaching program in the School of Medicine. It has long been required of graduates in the Department of Anatomy that they acquire some teaching skills in addition to development of their research skills and interests and production of their theses and dissertations. In Anatomy, it has been required that each graduate participate as a Teaching Assistant in two of the three Basic Medical Science courses: Gross Anatomy, Histology-Developmental Anatomy, and Neuroanatomy, now part of the Neuroscience course. Similar requirements have been the custom in the other Basic Medical Science Departments.

The contributions of graduate students to the teaching program throughout the entire university have been immense and nowhere more so than in the School of Medicine. These contributions have had the effect of reducing the number of full-time faculty in the School which, of course, might be seen as a mixed blessing. In some cases, considerably more responsibility has been assigned to graduate students here at UND than this author has seen in other institutions. In this narrative presentation of the history of the Department of Anatomy, graduate students have been listed separately from faculty. This separate listing is the result of their unique status in that, although they are considered members of the faculty at all university levels they have another role also: that of advanced, selected students who, in addition to developing teaching skills, are simultaneously developing research skills which will culminate in the submission of a thesis or dissertation which, in part, will earn an advanced degree. Further, although members of the faculty, they are transient, being in the Department for a matter of only four to five years, as a rule.

It would not be possible to go back through the list of graduate students, even limited to those in Anatomy, to cite the contributions of each to each of the courses in which he or she

has participated. It should suffice to cite as inestimably high their total contribution to the teaching program at UND School of Medicine. It is also important to cite a personal observation which this author considers unusual; that is the sense of camaraderie which has always prevailed among the School of Medicine graduate students, particularly in the Department of Anatomy. I am notaware of any serious conflicts between graduate students during the twelve years that I have been here. They seem rather to have been concerned with helping each other than competing with each other. There must surely have been some frictions but they have never risen to the surface and become a problem in the Department. In my experience, this is unusual.

Because of the impossibility of citing each of the graduate students historically and his or her individual contributions to the School, it might be appropriate to honor all of them and their contributions in a symbolic way by telling a story about three of them about whom I have personal knowledge and experience. I have chosen these three for the following reasons:

1. They all taught Gross Anatomy in the same year.
2. They worked very well together.
3. They were especially good-humored when working as a group.

They were Lillian Repesh, Randy Merchant, and Paul Stagno and are listed in the Catalogue Supplement in the next chronological chapter of this paper. An illustration of the characteristics of this group is recounted in the following experience.

It seems that one of the cadavers in the dissecting room had not set up well in the embalming which had always been performed by the Department as a supplement to that done by the morticians who process the bodies before their arrival here. Occluded arteries is the

usual cause of inadequate fixation and preservation and when such a specimen is encountered occasionally the problem is not recognized until after dissection has begun. In this case it soon became apparent that this specimen would have to be replaced and so another specimen was placed out in the preparation room for this purpose. When the three teaching assistants offered to make the exchange, nothing was thought unusual and so approval was given.

In due course, the inadequately preserved cadaver was removed on a gurney covered by an appropriate shroud, the latter to shield the remains from the view of Medical Center personnel as it was transported along the corridors to the prep room. After a time the gurney reappeared at the door of the dissecting room conveying another body, again appropriately shrouded and attended by Lilli and Paul. The gurney was brought somewhat ceremoniously to the side of the dissecting table for transfer. Of course, handling and moving human bodies is a matter of some curiosity to those not accustomed to it, and so most of the class was watching intently to see how the transfer was to be performed. There may have been a degree of special interest in the prospect of observing a woman, Lilli, engaged in these matters. Paul was at the head of the gurney and Lilli was at the foot. They gathered the shroud about the two ends of the body to prevent leakage of embalming fluid to the floor between the dissecting table and the gurney. As they struggled with the weight of their charge the body suddenly made a wild convulsive movement and sat straight up on the gurney, still covered by the white shroud. The responses from the spectators ranged between gasps and screams, but the sounds all came out simultaneously and so the sum sound of the response was difficult to describe. The sounds of terror, however, rapidly evolved to roars of laughter when one of the braver medical students pulled the shroud off the sitting Randy Merchant who seemed, just for an instant, slightly

frightened himself by the volume of response he had induced.

Such a stunt, under some circumstances, might not be seen as humorous, particularly in a dissecting room filled with bequeathal cases, but these graduate students carried it off with good taste and humor and it would be difficult to imagine that anyone would object to it. Personally, I couldn't control my laughter. Such was the nature of this particular group of GTA'S. All three of them finished their Doctorates. Lilli Repesh was recruited to the University of Minnesota, Duluth, School of Medicine, Paul Stagno enrolled in classes for the Medical Degree after finishing his Doctorate in Anatomy. Randy Merchant was last heard from in the Department of Anatomy, Virginia Commonwealth University, Medical College of Virginia, after undertaking a post-doctoral fellowship in Switzerland. Before undertaking the fellowship he had spent a year at Louisiana State School of Medicine at New Orleans. The high competence and good humor of these three students characterize in general the qualities of the Anatomy Department graduate students, which I have encountered since my arrival. The Anatomy Department and School of Medicine have been very fortunate and I use this story to pay tribute to this group of students.

In 1978, a "Supplementary Directory" was published by the School of Medicine instead of a new Biennial Catalogue. This was apparently due, in part at least, to some changes in the Academic Calendar for both first and second year students. The next Biennial Catalogue was to be for the years 1979-81.

Anatomy Faculty underwent several changes during the 1978-79 period occasioned by the departure of Snook who became Emeritus Professor in 1977, Nicolls who left in 1976, and Litke who replaced Nicolls for a year after receiving his degree from the Department after

which he also departed.

Snook was replaced by Mark D. Olson, Ph.D. who took his degree from this department in 1973. He had been at George Washington University after having been a student here of Frank Low. Olson's research was focused on the eye.

Litke had gone to the University of Ohio in Toledo and was replaced by Madhusudan Joshi, a Ph.D. from India, who had earned his Doctorate at the Weizmann Institute. Joshi moved into the Gross Anatomy program. His research was in Reproduction. Phillip Woutat retired in 1978 ending a period of contribution in Radiological Anatomy which commenced with his father, Dr. H.G. Woutat, in 1907.

The Undergraduate Program was handled by David Friedenbach as Instructor. He had an M.S. from North Dakota State University and was a graduate student in this department, receiving his Ph.D. in 1979.

Guy Berg is also listed as an Instructor this year.

Susan St. Aubyn was Secretary, having replaced Joy Brew.

The Department of Pharmacology was established this year as a separate unit from Physiology. It was chaired by James N. Boelkins with a Ph.D. from the University of Missouri. He had also taken a Master's Degree from the Department of Physiology-Pharmacology here at UND in 1968. Benjamin DeBoer, Ph.D., was listed as Emeritus Professor in this new department. (DeBoer was last listed as Professor of Physiology-Pharmacology in the 1974-'76 Catalogue.) Associate Professors were Theodore K. Auyong, Ph.D., and James N. Boelkins, the Chairman. A new Assistant Professor was Syed Husain, Ph.D.

The split-off of Pharmacology left Physiology with staff as follows: Professor: Brumleve, Chairman, and Ederstrom with Potter as Emeritus Professor and Emeritus Chairman. Associate Professors Akers and Zogg, Assistant Professors Owen and Stinnet, and Hill Research Professor Parmar.

Pediatrics got a Chairman, Gerald F. Atwood this year.

Edwin D. James came to Surgery and would ultimately be elected Chairman after a search for a replacement for Neil Thomford.

A considerable list of support staff and students is included in this supplement in the absence of course description, instructions, etc., for applicants and students. Debra Beck was listed as Secretary of the Anatomy Department. She was last listed as Debbie Norlin. Gordon Greene was listed as Laboratory Technician II. He came to the department to assist the Gross Anatomy Program in 1975 and has been a very important addition to all phases of departmental programs. He relieved a considerable period of instability in this office. Marianne Matthies is listed as Laboratory Technician 1. Joy Brew was Clerk Typist.

Thirteen Graduate students in the Department of Anatomy were once again listed and were:

David Bader, Graduate Teaching Assistant

Christopher Bates, Graduate Teaching Assistant

Christopher Dvergsten, Graduate Teaching Assistant

Curtiss Hunt, Graduate Research Assistant

Soo-Siang Lim, Graduate Teaching Assistant

Gregg Olson, Graduate Teaching Assistant

Eric Dravland, Graduate Teaching Assistant

Jon Van Rybroek, Graduate Teaching Assistant

Kim Kraft, Graduate Teaching Assistant

Randall Merchant, Graduate Research Assistant

Bruce Persky, Graduate Teaching Assistant

Lillian Repesh, Graduate Teaching Assistant

Paul Stagno, Graduate Research Assistant

Some of these students were supported on stipends from the university as Graduate Teaching (or Research) Assistants, some were supported by stipends from Frank Low's Grant, and some by stipends from the USDA Nutrition Lab.

Biochemistry listed 11 graduate students, Microbiology 7, Physiology 10.

Anatomy staff in the Supplemental Catalogue was:

Debra Beck, Secretary

Gordon Greene, Laboratory Technician II

Marianne Matthies, Laboratory Technician I

Joy Brew, Clerk Typist

Medical students were listed by home town this year and there were 67 "freshmen", including Donald Olson, a Bush Pilot from Golovin, Alaska, Susan Tiegs from Ellendale, and William Cornatzer from Grand Forks. There were 68 "sophomore" students, 68 "juniors", and 64 "seniors" including Roy Burt who had performed some prosection work for the department and John Malloy, (who took his Ph.D. degree in the department in 1975 under Frank Low), Catherine M. Spier was also a student this year.

There were 32 residents in Family Medicine in the four AHEC Centers this year. Internal Medicine had 19 residents, including David Engstrom who would subsequently become a faculty member in the UND School of Medicine and whose father had participated in clerkships in Wahpeton as noted earlier. Neurology had one Resident, Karen A. Engebretson, a former student in the School who would subsequently assist in the Neuroscience course. Neurosurgery had two residents, one a former student, and Obstetrics-Gynecology had three, one a former student. Pathology had three Residents and six names were listed as Flexible Residents.

An Educational Resources Unit was established under the Directorship of Richard Winant. Its staff included Ken Hardy and Phyllis Erickson and its duties involved photography, graphic art, broadcast, etc. This was apparently the precursor of what at this writing is called Biomedical Communications.

A Business Office is separately listed under the direction of Don R. Black, Accountant, but Black had been with the School of Medicine for some time and was soon to retire. His duties were to be assumed by Raymond A Pedden, M.S., on April 1, 1978 as Director of Fiscal Affairs. Pedden's title in 1983 is Associate Vice President for Finance. He was to resign in 1983 to assume a similar post at University of California, San Diego.

Nancy G. Furstenburg, M.D. appears on the Administration Roster this year as Associate Dean for Student Affairs. She was assisted by Marilyn Martin, Admissions and Records Office, and was apparently recruited to this position by the new Dean who arrived in 1977.

Tom Johnson appeared as Dean in 1977. He came from Michigan State University

College of Human Medicine. He has been Dean until this writing and this tenure broke the prolonged pattern of instability in this office. He undertook a number of innovative programs, one of which facilitated acquisition of the former Saint Michael's Hospital, a relatively modern building abandoned for a new 352-bed hospital to the south of the university. The older abandoned hospital is only one block from the Medical Science Building on the UND campus and is now called the North Unit of the Medical Science Center. It houses the new Department of Pharmacology and offices of the Clinical Chairmen as well as a number of the support units for the School of Medicine. Most of the administrative Offices of the Medical School are located there also.

Dean Johnson facilitated the change in organization of the School from the 2:1:1 concept (which, as the reader might recall from the description above involved two Basic Science years in Grand Forks, one Clinical year in Minnesota, and the fourth year back in North Dakota) to the full 4-year program within the state. This required not only the organization within the School involving clinical faculty, etc., but also steering the funding of the project through legislative committees and the North Dakota Legislature itself. This was accomplished during relatively adverse economic conditions in an agricultural state. In the process, he has made possible considerable expansion of the Medical Library and provided other physical and educational resources which have enabled the School to be fully accredited. The details of how he managed these matters are not known to the writer and would have to be sought elsewhere.

Henry B. Slotnik, Ph.D. appears in this supplement to the Catalogue as Assistant to the Dean for Medical Education and Evaluation.

Conditions in the School of Medicine's Animal Care Facility had been poor for many years. It had become impossible to keep healthy experimental animals in the facility. Complaints from graduate students, faculty, a veterinarian who had been hired to oversee the facility, and even a Department of Agriculture Inspector from Fargo had failed to improve conditions.

On May 9, 1979, G.A. Hofman, D.V.M., Regional Animal Care Specialist, United States Department of Agriculture from Des Moines, Iowa, appeared early in the morning at the Animal Care Facility (ACF) for an unannounced inspection. This visit was the culmination of a series of inspections by Fred J. Alderinck, Veterinary Medical Officer from Veterinary Services, USDA, Fargo. Alderinck had noted on all of his previous visits that conditions in the School of Medicine and Biology Department Animal Care Facilities were in violation of requirements of Federal agencies and his complaints to School of Medicine Administration had not produced any improvements in that facility. The complaints need not be recounted in detail but they described a number of problems related to uncleanliness of the facility, antiquated cages, no cage sanitation, untrained personnel, poor fiscal support, etc. Apparently Hofman, as Regional Inspector, was brought in for the purpose of impressing University officials of the urgency of the matter.

By chance, Hofman arrived in the midst of an on-site visit by a State Legislative Committee which was investigating a request from University Administration for supplemental funds for rehabilitation of, at least, the School of Medicine Facility. 1979 was the year between the two biennial meetings of the North Dakota Legislature which were scheduled in 1978 and 1980. Also, by chance, the Inspector was greeted by a colony of soot-discolored animals. The

incinerator had blown up the previous Friday, one of several such events in the past. There were no white rabbits or rodents. They were all a dull gray and cages contained a layer of carbon particles from the wrecked furnace and flue. The soot was widely disseminated throughout the animal quarters due to the habit of the caretakers of placing fans throughout the facility to move the air about. No amount of evidence would persuade the caretakers that laboratory animals do not have skin sweat gland distribution like humans and that fans did not cool the animals as moving air does to humans. The fans did facilitate circulation of air, however, with its contained contaminants and, in this case, soot from the incinerator.

In any case, the problem of the incinerators was only one problem superimposed on the chronic problems of odors and lack of sanitation. While I was discussing some of the problems of the ACF with the members of the legislative committee, Hofman came up to me (I hadn't known he was there until this point) and in apparent exasperation said, "Don, I have to shut you down, this is simply too much", or words quite similar to those.

A meeting was called in President Clifford's Office with Vice President for Finance Skogley attending in Clifford's absence. It was attended by this author and several members of the Animal Care Committee. Hofmann conducted the meeting and cited the long-persisting problems of the ACF and the lack of attempts at remedy, as well as some of the options available to him in fulfillment of his duty. He explained that if he filed a complaint about animal care at UND, the complaint would go into an open file which was accessible to animal care activist organizations. He stated that it was the custom of these groups, upon turning up complaints on institutional animal care to use their influence to have withdrawn any government support for research at such institutions.

As the meeting progressed and Hofmann was informed about what action the University was already taking, he seemed to become somewhat mollified. He had after all, encountered a legislative committee on an ad hoc inspection visit to the ACF which had as its purpose the provision of emergency funds for rehabilitation of the facility. Moreover, he could be confident that this inspection was not staged since he encountered it on his own unannounced inspection. He saw, as further evidence of the University's apparent intention to address its animal care problems, the blueprints of preliminary plans for physical rehabilitation of the resource which had already been prepared before his arrival. The plans were prepared by Myron Denbrook of Engineers-Architects P.C., the firm which had designed the building originally, and in consultation with Dr. Matthies of the Animal Care Committee.

As a result of this tangible evidence, Hofmann did not file the complaint which he had threatened, but rather, informed the University that he would return in several weeks' time for another inspection and, if the facility had not by that time been brought into compliance with federal regulations, he would file his complaint. The University could not, of course, in a matter of weeks remedy the problem and so it closed down the facility and removed all animals from it. Investigators who wished to continue their research and who did not suffer allergic reactions to their animals, moved their animals to their own office-laboratory quarters or, in one case, to an unused ACF which had been established in the Upson Engineering Building when the "Man in the Sea Project" was still functional. The Biochemistry Department had, for several years, maintained a "bootleg" ACF in Room 13 of the Medical Science Building. Biology had also closed down their ACF and was awaiting construction of new quarters in Starcher Hall, a new building which was to house that Department, and which was finished in

1981. Dogs for use by Physiology were housed in a nearby private kennel.

The School of Medicine's ACF would not be finished until 1981, and the costs of rehabilitation had to be borne by the University. Drs. Matthies and Eelkema wrote a grant for $255,000 to NIH to help rebuild the facility and made 4 or 5 trips to Washington, D.C. to help the grant through but it was not approved. The main criticism of the application were that the University had not engaged a full-time professional director of the facility. In fact, a local veterinarian who had been hired on a part-time basis to supervise the resource resigned when the Federal Veterinarians had made known the conditions which had caused the facility to be out of compliance. Another criticism by the grant proposal reviewers was that the School of Medicine's ACF did not have a budget or any consistent source of support or organization for fiscal management. Both of these points had been raised as recommendations to administration by the School of Medicine Animal Care Committee and the University-wide Animal Care Committee. The School of Medicine's facility was at that time being run by one trained technician and several untrained casual employees.

In 1981 Dr. Kap Lee was engaged to direct the facility which was just beginning to reopen. He came to North Dakota from Pennsylvania. The ACF was also given a budget and these two new developments eliminated the two basic criticisms of the NIH grant reviewers of the proposal submitted by Matthies and Eelkema. Lee rewrote and submitted the grant proposal. It was approved but not funded. There are still, at this writing, problems with furniture and caging, but conditions in the facility are certainly better than they ever have been. One of the main improvements was a walk-in cage washing machine donated (as surplus) by Sandstead at the Department of Agriculture Human Nutrition Laboratory in Grand Forks.

The problems of the ACF, particularly those of the small animal wing were as old as the building itself. The physical plant was adequate, with concrete floors and tiled walls, but caging was poor and animal care was in the hands of unskilled and uninformed workers. The results of poor caging were aggravated by an almost total absence of cage-cleaning so that the rust plaques in the old galvanized cages harbored sufficient contaminants to render the health of any experimental animal impaired or suspect. Healthy animals, newly arrived from suppliers would quickly come down with diarrhea and die within a matter of days. These problems had been brought to the attention of the School of Medicine Administration over decades and the first complaint from this author was in his first year here, 1973. Consultants brought in from other universities recounted the same litany of deficiencies as submitted by faculty and Animal Care Committees at UND. A number of factors were probably responsible for inaction on the part of the Dean's Office. One was surely budgetary, providing an addition to the recurring theme of difficulties with support of the University as a whole as may be seen in this brief history of the Department of Anatomy and in the Geiger book on the history of the University. Another problem was the absence of a research orientation on the part of occupants of the Dean's chair. When the conditions became in extremes in the mid-seventies, attempts at relief were not helped by the instability in the Office of the Dean of Medicine which had produced 5 Deans in 6 years.

Between the resignation of Thomford as Dean in April, 1977, and the arrival of Johnson in July an opportunity appeared to take the problem of the ACF directly to President Clifford without having to "go over the head" of a sitting Dean. This was done in May, 1977 by Dr. Matthies at which time Clifford was informed that it was no longer possible to engage in

research involving animals in the School of Medicine ACF because of the prevailing conditions which precluded maintenance of healthy animals and were even a threat to the health of faculty and staff who had to work there. He was advised that unless these problems were addressed, there was a risk that the University would lose its research grant support and would also be at risk of jeopardizing the School of Medicine accreditation. Very shortly after this visit Clifford visited the facility after which he acknowledged its need of rehabilitation and agreed to find funding for it. Some delay was encountered, obviously since nothing had yet been accomplished in the ACF in April of 1979, two years later, when the Department of Agriculture Regional Inspector arrived. It is not known whether the project got bogged down in the Office of the President, that of the Dean of Medicine, or in that of the Director of Research and Program Development. After continual prodding by this author, and then by a joint memo from all Basic Science Department Chairmen requesting immediate action, there was developed at least a symbol of intent in the form of an "Action Committee on Animal Care" chaired by Associate Dean Gary Dunn which met weekly with the architects and had in hand the preliminary plans for rehabilitation which may have been the critical factor which saved the School from a complaint on animal care filed by the Department of Agriculture.

1979-81

Anatomy faculty lists Theodore Snook as Professor Emeritus, Low and Ollerich as Professors, Albright, Joshi, Matthies, Donald 0. [sic], Oberpriller, Jean C., and Oberpriller, John O., and William Olson. Assistant Professor Mark D. Olson, and Instructor Thomas W. Call, M.S. Although not indicated in the Catalogue for this biennium, the Chair of Anatomy was vacated by Ollerich who became Associate Dean for Academic and Research Affairs in 1979.

The Acting Chairmanship was assumed by Dr. J.C. Oberpriller.

Call was recruited to teach the undergraduate courses and stayed only one year, replacing Friedenbach and Berg. Friedenbach took his Doctorate in 1979.

No course changes in the Anatomy curriculum appeared this year.

The Anatomy Department Program was greatly facilitated on September 1, 1980, with the arrival of Julie Horn as Secretary. She replaced Susan St. Aubyn who had filled the position vacated by Joy Brew.

The full-time faculty at the beginning of this biennium is numbered at "almost 100" with "about 450 clinical faculty serving on a part-time or voluntary basis throughout the State". An Executive Faculty Council is announced which is "comprised of departmental chairmen and deans" and "is the body responsible for determining general policy-making, although the total faculty has ultimate decision-making capabilities regarding medical school issues". An Animal Care Committee is announced formally for the first time, although such committees had existed in the past.

Reapplication procedure to the School of Medicine by students who were not accepted on a previous application was changed this year. The entire process must be repeated now instead of simply reactivating the previous application.

An appeal mechanism of academic probation or dismissal appears in the Catalogue for the first time this biennium. A student so classified "shall have the opportunity to appear before the Scholastic Standards Committee or delegated Committee member in counsel with his or her faculty advisor, to present evidence of any extenuating circumstances relative to academic or personal status. Any student dismissed from the School by the Dean upon the

recommendation of the Committee shall have right of appeal to the voting faculty. Such appeal must be in the form of written petition filed with the Dean within two weeks of notification of dismissal. The whole area of student rights is under current review and changes will be published as they occur. The latter statement was to appear again in the next biennium, 1981-83. The mechanism appears to work. This author acted as faculty counsel for an appeal filed by a student in 1982 who was very shortly reinstated.

Changes in School of Medicine faculty which had implications for the Anatomy D Department are as follows:

Christofferson of Neuroscience took the Acting Chairmanship of Surgery upon the resignation of Thomford. Christofferson was active in the Basic Sciences Neuroscience course.

Robert P. Carter, M.D., took the Chairmanship of Obstetrics-Gynecology. Carter contributed several lectures to Gross Anatomy before his resignation in 1983.

A new Department of Radiology appears, chaired by Richard J. Blank, M.D. Blank had already been contributing strongly to the Radiological Anatomy portion of the Gross Anatomy Course since the retirement of Woutat in 1978. He had been ably assisted by Leslie Soigne, Assistant Clinical Professor of Radiology and David Rigby of the Grand Forks Clinic.

Slotnik appears in the Catalogue for this biennium with a new title, Director of Medical Education and Evaluation.

Professor Helge Ederstrom has retired from Physiology after nearly 30 years in that Department. During his research career he had contributed enormously to our understanding of the means by which many animals; birds, quadrupeds, and humans maintain thermal homeostasis in adverse thermal environments. He also demonstrated that cardiac ventricular

fibrillation is the cause of death to adult mammals exposed to cold and he showed the immunity of young dogs from this lethal event. He thus provided a probable explanation for the survival of young children exposed to cold temperatures in air or water. This survival of youngsters to cold which would kill adults is not an uncommon observation in this part of the world.

Dr. Matthies may have established a precedent in 1980 when he went on a sabbatical, or developmental leave. He took only 6 months so that he could return to his responsibilities in the Gross Anatomy course on January 1, 1981. He spent his leave doing research in Reproductive Endocrinology at the World Health Organization Training Center for Research in Reproductive Endocrinology at Karolinska Hospital in Stockholm. He had spent a year at that institution on a post-doctoral fellowship in 1968. Other Anatomists in this department have gone on leaves other than sabbatical as recorded in this paper, but they seem not to have returned. Dr. Matthies' sabbatical leave facilitated the establishment of a radioimmunoassay facility in the Department of Anatomy.

Medical student fees for this biennium were $1,217 for each of the four years for residents of North Dakota. No fees are announced for non-residents.

The Harley French Medical Library cites 40,000 volumes and 800 "serials" as it enters the biennium of 1979-81.

Student rosters were not included in the Catalogue for this year, nor were those for support staff.

1981-1983

A two year search for a Chairman of Anatomy produced a former student of the

Department, Dr. Edward Carlson, who took his degree here in 1970. He came as Chairman and brought with him a considerable amount of laboratory equipment which the Department badly needed. The Department had become heavily oriented about descriptive electron microscopy under Frank Low who, as Hill Research Professor, had minimal teaching responsibilities and practically full time for research.

Ollerich is still listed as Professor of Anatomy this biennium although in the Dean's office and, in fact, still participates in teaching the Neuroscience Course. In addition to Albright, Joshi, Matthies, Oberprillers and Olson as Associate Professors, the Catalogue for this biennium also lists the following as visiting Assistant Professors:

Campbell, Jerrolynn (Ph.D.). Dr. Campbell assisted in the Neuroscience Course. She was brought here on a temporary appointment from California to help teach the Neuroscience Course for one year.

Hunt, Curtiss (Ph.D.). Dr. Hunt assisted in Histology while the Oberprillers were on sabbatical leave in Washington, D.C. (Carlson helped to replace J.C. Oberpriller in Gross Anatomy in 1981 when they were on leave). Hunt took his degree from this department in 1979. He had worked closely with the USDA Human Nutrition Lab and after filling in here, was recruited back to that laboratory where he remains at this writing.

Keck, Arnold (B.S.). Keck is a Physical Therapist and took over all of the undergraduate courses. He had been at UND teaching Physical Therapy from 1968 to 1973. He was brought back to UND from U.C. Davis by Carlson and he helped fill in for Oberpriller in Gross Anatomy while they were on leave. He continues to participate in the Gross Anatomy course while directing the Undergraduate Program. Anatomy faculty contribute some lectures

to the undergraduate courses as in the past.

The Medical Curriculum was extensively revised for the year 1981-82. Time allotments for courses and Examination Schedules were handed down by the Curriculum Committee to the course Directors.

The Curriculum Committee had insisted that material be dropped from courses rather than that an attempt be made to compress the same amount of course content into a smaller time allotment. Accordingly, Dr. Matthies went through the entire dissection schedule meticulously in order to designate material which would have to be sacrificed. This study suggested that certain technical features of the dissection program would have to be eliminated and some time saved by this device while retaining essential anatomical course content. We stopped requiring separate skin and fascia flaps in the pectoral and dorsal regions and on the extremities. It had been a matter of experience that unlike Schools of Dentistry not all medical students come to their first year with a high level of manual dexterity. Some dexterity could be developed by extensive manipulation of dissecting instruments but this practice opportunity had to be sacrificed.

Some time was saved also by elimination of the relatively cursory study of the internal structure of the cerebral and cerebellar hemispheres which had been part of Gross Anatomy. This study, from brain sections, was transferred to the Neuroscience Course. Of course it had always been done in that course but prior to this revision of the curriculum there had been a space of a year between Gross Anatomy and the Neuroscience Course. It had been determined,

therefore, that some acquaintance with the appearance and basic function of the basal nuclei and fiber tracts of the brain should accompany study of its superficial anatomy while the Neuro Course was yet a year away. Now that the Neuro Course was in the same year, that course could take over the study of the Central Nervous System directly. In fact, the Neuro Course started when Gross Anatomy got into the vertebral canal so that when the brain and spinal cord were removed in the dissecting room, the Neuro schedule was ready for it.

As it turned out, the Gross Course went very smoothly under the new schedule, although there were few idle moments during the dissection. Dr. Joshi adapted the laboratory assignments to the new course schedule.

No other course changes are noted in the Anatomy offerings for this biennium.

Departmental office operations were greatly enhanced in 1982 with the arrival of Lisa Eiteljorge. She and Julie Horn, were now being assisted in their duties by new office equipment in order to keep up with the rapidly increasing office work load.

Now that the School of Medicine had developed a full four-year curriculum, the Catalogue cites "nearly 120" full-time faculty members and about 600 part-time or voluntary clinical faculty. This contrasts with the single full-time faculty member, Archibald Leeke, and the several city physician-lecturers who formed the first faculty of the School of Medicine at its founding in 1905.

Faculty By-laws are in effect at the beginning of this biennium and are scheduled to be voted on in the Spring of 1982.

In a note about transfer, the Catalogue anticipates a declining number of students and a declining number who will have to transfer out to their 3rd and 4th years in other Schools of

Medicine. They anticipate an enrollment of 50 to 54 students, 50 being the number for which the legislature will provide support of 3rd and 4th years' training. The 5 Inmed students were required to transfer out of the UND system for 3rd and 4th year training until this year, 1983, when these 5 students can continue in the UND 4-year program. This effectively raises the 4 year program medical student population to 55.

During this biennium, with the classes scheduled for Autumn of '82 and Spring of '83 the grading system was changed from a letter scale to a Satisfactory/Unsatisfactory system. An Honors category was permitted but faculty were urged to keep that category at 20% of the class or lower.

Fischer resigned his chairmanship of Microbiology in 1981 and Vennes assumed that responsibility. Vennes had now held nearly all titles in the School of Medicine from instructor, through the Professorships, Acting and Associate Dean, and now Chairman. Fischer continued as Professor of Microbiology.

Cornatzer retired from Biochemistry and became Emeritus Professor. Nordlie, the Hill Research Professor took the Chair and renamed the Department Biochemistry and Molecular Biology.

A note should be made at this time that seven departments in UND School of Medicine are now chaired by former students. They are:

Nordlie in Biochemistry

Vennes in Microbiology

Carlson in Anatomy (Olson also as vice chairman, and is a former UND student)

Boelkins in Pharmacology

Eelkema in Community Medicine

Wasdahl in Pathology

Keller in Internal Medicine

Judy DeMers, (R.N., B.S.N., M.Ed.) whose appointment was as Assistant Professor in Community Medicine, was appointed to the office of Associate Dean for Student Affairs and Admissions and replaced Nancy Furstenburg who resigned and left the School.

The full-time and part-time Faculty Roster at this juncture in the development of the UND School of Medicine is as follows:

Anatomy, Chaired by Carlson, 11 members

Biochemistry, Chaired by Nordlie, 6

Community Medicine, Chaired by Eelkema, 13

Family Medicine, Chaired by Staebler, 128

Internal Medicine, Chaired by Keller, 145

Microbiology, Chaired by Vennes, 10

Neuroscience, Chaired by Christofferson, 71

Obstetrics and Gynecology, Chaired by Carter*, 28

*Carter resigned in 1983 and a replacement has not been announced.

Pathology, Chaired by Wasdahl**, 32 **a replacement for Wasdahl is being sought at this writing.

Pediatrics, Chaired by Atwood, 43

Pharmacology, Chaired by Boelkins, 6

Physiology, Chaired by Brumleve, 7

Radiology, Chaired by Blank*, 42

*Chairmanship of Radiology has recently been assumed by Dr. N.J. O'Keefe, Bismarck.

Surgery, Chaired by James, 145

In the Allied Health Curriculum:

Cytotechnology, Directed by Wasdahl, 2

Medical Technology, Directed by Dillenburg, 7

Physical Therapy, Chaired by Wessman, 77

Human Nutrition Research Center, Directed by Sandstead, 6

The Anatomy Department received the University Research Award this year at the Founder's Day Banquet, as it had once before in 1975. Mark D. Olson, Associate Professor of Anatomy, was appointed Vice Chairman in 1983.

Vice President for Academic Affairs Conny Nelson resigned his University post and Alice Clark, Ph.D., Professor of Psychology was appointed in his place. This change occurred in 1980.

The School of Medicine announced resident only fees of $1,585 per year for all 4 years.

Medical Library holdings were now 48,000 volumes and a "growing audiovisual collection". No announcement of periodical journals is made in the Catalogue for this biennium. The subscriptions were rapidly increasing, however.

One event of note which affected the Department of Anatomy in 1982 was the initiation of participation of the Department in the Resident Training Program in the

Department of Surgery. This participation has taken the form of a series of lectures presented to the Residents and fourth year medical students at the nearby United Hospital. During Autumn of 1982 and Spring of 1983 the lecture series was presented by Dr. Matthies and has covered Anatomy and surgical approaches to Thoracic and Abdominal Regions plus the Pelvis and Perineum. The next series will deal with the Surgical Anatomy of the Head and Neck regions. A unique feature of this inter-department program is the adjournment by Staff and Residents from the hospital lecture room directly to the Dissection Room at the Medical Science Building where two of the residents assigned to a region of the body, demonstrate their own dissections to their colleagues and preceptors. The Department places diagrams on a nearby blackboard to facilitate their dissections and demonstrations and makes other teaching aids available.

From the time of the decision to expand the School to a four year program utilizing Community Physicians as faculty there had been considerable discussion of utilization of Basic Science Faculty in the various clinical training programs.

Dr. Edwin C. James, Chairman of Surgery was the first to introduce Basic Science Faculty directly into a Clinical Training Program, i.e., his Surgical Residency Program. There has been, for the past three years, a required course for first and second year students which had a clinical format. It is called Focal Problems and the concept was apparently brought to UND by Dean Johnson from Michigan State. It involves a clinician and a member of Basic Science Faculty acting as "Facilitators" in small groups of students whose goal is to work out a diagnosis and treatment program for fictitious patients using a Problem Oriented approach. Dr. James' utilization of Anatomy Department resources, however, was the first involvement of

Basic Science Faculty with training of Graduate Clinicians. Dr. Matthies has been pleased to represent the Anatomy Department in both of the above described programs. The Basic Science Courses had been supplementing their instructional program for years with contributions from clinicians but we see only recently examples of how this participation can be, in a sense, reversed.

Summary

Interest on the part of UND in establishing a School or College of Medicine must have existed from the time of its founding. It appears that a first step in this direction was taken in 1885 when the University was only two years old. In this year the Territorial Assembly set aside $1,000 to establish a "Chair in Medicine". In 1886, the issue was pressed by Henry Montgomery, the Chairman of Natural Science, claiming that the University needed only a dissecting room to establish a School of Medicine. Nothing came of these efforts, however. In 1902 a School of Pharmacy was announced in the Catalogue. It is said that this curriculum was actually a pre-medical course which lasted only while the medical program was being worked out by Brannon and approved by the faculty. (A School of Pharmacy is presently located at NDSU in Fargo.) It is not clear from historical accounts, however, whether the University and the people of the state were more interested in providing a population of North Dakota-native physicians or in providing an opportunity for professional medical training for its young people. Both rationales prevail to this day and in the biennial legislative skirmishing over budget, sometimes become mutually antagonistic.

Most physicians in North Dakota at the time of founding of the UND College of Medicine had been trained on the East Coast of the United States. By 1900 there were 457

Medical Schools in the United States and Canada compared with 140 at present.

During this time the total population had risen from 80 to 225 million. Many new schools were being established during the first decade of this century. The State of Illinois had 39 medical schools, 19 in Chicago alone. There were no national standards with which to comply so that these schools were turning out large numbers of physicians with variable training and a whole spectrum of degrees of competence. Many of the schools were frankly proprietary, run for profit, and admitted anyone who could pay the tuition. Candidates for admission frequently had only a grammar school education and their training sometimes consisted only of a series of apprentice-like experiences. In too many cases such an apprenticeship was served under a physician who, himself, was poorly trained. It was into this milieu of medical training that UND established its entry.

There is indirect evidence that in founding the UND School, the intention was to ease a physician shortage in North Dakota, or at least a problem of distribution. There are reports of towns in the U.S. as a whole where populations of only a few hundred were served by two or three physicians but this ratio was encountered more often in the "mainstream" of U.S. population than in the rural Dakotas which only 16 years earlier had been an unsubdivided and sparsely settled "Territory". The University apparently saw itself in a favorable position for establishing a College of Medicine.

There were no rivals among other State schools for establishing such a curriculum. Nor were there any other American schools closer than Minneapolis-St. Paul whose University of Minnesota College of Medicine and Surgery had been established in 1883. Further, there were no proprietary or "stock" schools in North Dakota which could lower admission standards

in order to successfully compete with the State School for candidates.

Necessary resources for establishing a Medical College were considered minimal in those days; especially if we compare them with the complexities of curriculum, laboratories, and clinics which are required today. The experiences encountered in establishing a College of Medicine was already well-trod ground in other regions so that much could be learned from the experiences of others. Further, the first Dean, Brannon, although personally inexperienced in such matters as organization of a Professional School, had access to the advice as well as the support of a number of practicing physicians in the community of Grand Forks and environs, whose own experiences were 100% acquired elsewhere and whose training probably represented a wide diversity.

Whatever the source of interest in establishing a College of Medicine, the commitment seems not to have been very deep considering the $1,000 appropriation in 1885 and the designation of a dissecting room as the sole necessary physical resource in 1886 and other criteria to be cited below.

In 1905 and 1906 the College of Medicine Catalogue listed as faculty of the College of Medicine the Instructors who taught what were in effect pre-medical courses, i.e., courses which were to have been finished in order to qualify for admission to Medicine. Thus the teacher of French (MacNie), Philosophy (Kennedy), English (Squires), German (Tingelstad), Mathematics (Chandler) and Physics (Stewart) were listed on the faculty at "The Medical College". This practice terminated with the Bulletin for 1907 when only Instructors teaching courses in the medical curriculum were cited as College of Medicine Faculty.

In reviewing the report "Medicine and Society in America" by Abraham Flexner and

commissioned by the Carnegie Foundation in 1910 (the so-called Flexner Report) curiosity is raised in regard to the manner in which the new UND Medical College staffing had been presented to him on his 1909 survey trip to Grand Forks. Flexner could be considered generous in his evaluation of the newly formed schools in both Dakotas. His citation of 9 Professors and 7 Instructors for the North Dakota Schools appears impressive alongside the small number (9) of students attending. There are indeed 17 faculty slots assigned to the College of Medicine in the 1908 Bulletin, the documentary resource which must have been available to Flexner on his visit which was in May of 1909. An examination of this roster might, however, be appropriate at this point. it is reproduced here for reference.

Webster Merrifield, M.A. was listed by nature of his being President of the University. If Merrifield taught at all in the College of Medicine it would have to have been in Greek in which he had been trained at Yale. Melvin A. Brannon, M.A. was, to be sure, Dean of Medicine, but his University appointment was in the Department of Biology and he was trained as a Botanist. Earl J. Babcock, B.S., although listed as a teacher of Chemistry in the College of Medicine had become involved in studies of sugar beet culture in North Dakota soils and also in lignite and clay deposits. To quote Geiger, "Babcock was to carve out a career in research in coal and clay that was to become the source of whatever early reputation the University of North Dakota made in science and technology". The sugar beet studies were later transferred to the "Agricultural College". Babcock was also involved with establishing a city water-filtering system after an epidemic of "Red River Fever" (typhoid) in 1893-94 which killed more than 100 residents of Grand Forks including three students as well as sickening 10% of the population, approximately 500 people. Babcock was to become Director of the

School of Mines in 1896, State Geologist in 1897, and Dean of the College of Engineering in 1909. He also served as Interim President of the University in 1917-18.

Archibald L. McDonald, M.D. took his degree from Johns Hopkins and is described elsewhere in this account. He was listed for Anatomy and was the only full-time faculty member in the College of Medicine until 1907 when the name of Ruediger appears. Gustav E. Ruediger, M.D. (Rush Medical Center) and Ph.D. (Chicago) appears on the faculty roster as Director of the State Public Health Laboratory and Professor of Bacteriology and Pathology. He was the second "full-time" appointment in the Medical College but it is not known how much time he had for teaching Bacteriology and Pathology in light of his duties as Director of the State Laboratory. Brannon, the botanist, became the third full-time faculty member when Young was appointed to the Department of Biology in 1907.

Robert T. Young with a Ph.D. from Nebraska, was listed in the 1908 Bulletin as teaching Embryology and Histology in the College of Medicine. His appointment, however, was in the Department of Biology and he became head of that unit in 1914 on the departure of Brannon. Although Young is listed as teaching Embryology and Histology in the College of Medicine, his training and interests might be reflected in his apparently unsuccessful project of developing a "mussel industry" on the Red River. He had taken over the Biological Station which had been established in 1909 from Brannon.

A blank space for Physiology is present on the roster in the 1908 Bulletin. It was filled in the 1909 catalogue by George H. Caldwell, M.D., almost certainly one of the Community Physicians who contributed so heavily to the teaching program during the early days of the College.

Henry Wheeler, M.D. was listed as instructing in surgery. He was an associate of William T. Collins, M.D., one of the first physicians to come to Grand Forks and considered one of the founders of the University. How much surgery was taught at UND to Basic Sciences students in that time is difficult to discern from this perspective. The course description describes "a study of the Principles of Surgery and it is based upon demonstrations in hospital practice, lectures, textbooks and quizzes". The course schedule cites four hours per week in the second semester of the second year. Wheeler was a practicing surgeon in Grand Forks.

John Duncan Taylor, M.D. was listed as teaching Pharmacology and Materia Medica. Considerable time was allotted to these subjects; six hours per week in first semester and five hours per week in second semester of the second year. Taylor also was a practicing physician in Grand Forks. He had earned the reputation of being a more or less official guardian of University interests in the legislature where he had been State Senator. He had been responsible also for advocating the establishment of the State Public Health Laboratory. He was a member of the State Board of Trustees, one of the predecessors of the current Board of Higher Education.

August Eggers, M.D. was listed as instructing in Medicine and he was surely another practicing physician in the community as were Bates, Campbell, Crane, Grassick, Healy, O'Keefe, and Woutat who were designated Special Lecturers. It is known from Woutat's son Philip who is a contemporary of this writing that H.G. Woutat taught Roentgenology as well as practicing this new specialty. He was first listed in the Bulletin of the College of Medicine in 1907.

This review of faculty members indicates that at the time of Flexner's visit in 1909, UND College of Medicine had only one of a total of 17 faculty members whose total efforts were assigned to medical education. The other 16 listed on the faculty roster had what seems to be substantial commitments to other activities of the University and to the community. Flexner spoke time and again, usually by implication, of the desirability of full-time faculty appointments to medical education programs. Indeed, a reading of his evaluations of each of the Schools of Medicine he visited suggests that he would even rank schools in terms of the number of their full-time faculty. It is curious, therefore, that he would speak so highly of the North Dakota School. An explanation might be found upon more thorough reading of his "Report" wherein may be discerned his high regard for college preparatory work for admission to the School of Medicine. UND's College of Medicine was one of only 16 nationwide which required two years of college preparation. Further, he expressed on numerous occasions, the problems of the overproduction of undertrained physicians and the advantages of medical education taking place in university-affiliated urban centers where sufficient clinical experience is available. He spoke very highly of the "half-school" or two year basic science school for regions of the U.S. which were thinly populated. He states that for proper clinical training, "Minneapolis must largely carry the weight of the Dakotas and Montana". Besides, he claimed that the Dakotas were already supporting twice as many physicians as are needed. He did not comment on the distribution of these physicians.

It would appear then that Flexner was more positively impressed with factors at UND such as on-campus location, well-planned curriculum, university admission requirements and a plan for physician-production which was appropriate to the rural population density of

the state than he was about the full-time faculty member count. It should be recalled also at this point that the College of Medicine was the first unit of UND to win national accreditation and that, by the Association of American Medical Schools in 1907.

In the Appendix will be found Flexner's descriptions of some other Schools of Medicine in the Western, Midwestern, and Eastern regions of the country which were contemporary with his report on UND and should be of some interest for the purpose of comparisons.

Had there not been a viable Biology Department at UND, the establishment of a College of Medicine at any point in its early history would have been unthinkable. The first Dean of Medicine, Brannon, notwithstanding his lack of direct medical experience was probably the only member of University faculty upon whom the mantle of Dean could credibly have been placed. This, of course, was because of his title and appointment as Biologist. Young's appointment also was in the Department of Biology and, although he had the Ph.D. compared to Brannon's M.A., his name does not appear on the faculty roster until 1907, two years after founding of the school. His responsibilities of teaching Histology and Embryology, however, were critical ones and certainly in those times a strong teaching program in both of those topics was considered essential for medical training. Brannon and Young of Biology, MacDonald of Anatomy (and College of Medicine), Babcock of Chemistry, and ultimately Caldwell the physician teaching Physiology, taught what would now be described as the core basic science courses.

When MacDonald resigned in 1911, he vacated the sole College of Medicine faculty appointment. This created an opportunity to solve several situations which were apparently

thought to be problems. In the first instance, a replacement to teach "Anatomy" was required. In the second place, an anatomist with a medical degree was considered desirable because he could then be made Dean in order to place a professional degree at the head of Medicine, and in the third instance, Brannon could be promoted to Dean of Liberal Arts. All of this without increasing the number of full-time appointments to the College of Medicine beyond one. All that was required was to find an M.D. who did not wish to practice medicine and this challenge was fulfilled in the person of Harley E. French who was to remain as Dean from 1911 to 1948.

Full-time faculty roster in the College of Medicine was increased only slowly and it is an easy matter to trace the painful history of the College of Medicine's attempts to strive for excellence in medical education in the face of almost continuous reluctance of the state to provide the support necessary. (When Potter replaced French as Dean in 1948 he was only the fourth full-time faculty member in the College of Medicine, 43 years after its founding.)

Even as full-time faculty appointments were only slowly increased, problems of faculty turnover became even more serious. Young faculty members very often would stay for only a few years, in effect using UND as a "springboard" in a search for better academic appointments. This was, of course, a University-wide problem, not just one for the College and School of Medicine and remains one today.

Geiger cites an increasing reliance on graduate students elevated to faculty rank to fill in the gaps in the faculty roster. Careful scrutiny of the College of Medicine faculty rosters and the academic degrees held by faculty members when compared with graduating class lists, however, revealed that the practice of engaging graduating students as faculty members began in 1918 and continued into the 1950's. A few students of the College of Medicine each year

would not transfer to 4 year schools to complete their medical training but would stay at UND for a year or two as Instructors while holding only the Bachelor of Medicine Degree and/or a Certificate of Completion from the two year Basic Science School. It is not known whether these students had been unsuccessful in their attempts to transfer or if they simply found the inducement to serve as faculty members attractive as an interim activity before finishing their training. Whatever device was used, and we have cited several, the roster of the College of Medicine in its early days always managed to get filled out by names.

Geiger was an historian and, as acknowledged earlier, his book has served as a major resource for this historical perspective of UND's School of Medicine and its Department of Anatomy. As historian, Geiger appears not to have been expected to put a face on the history of UND which was not accurate. He seems to have been able to bring to his readers' attention most of the many achievements of the faculty and administration but he also rightfully cites the many handicaps under which these achievements were made. Discarding such trivial considerations as remoteness of the region, climate, etc., his history of the University, as well as of the School of Medicine is a history of achievement but often in the face of seemingly overwhelming obstacles. The greatest of those obstacles was, of course, inadequate fiscal support. On page after page of Geiger's History can be found examples of a University manned by dedicated men and women trying to achieve high standards of education and training with very limited and unpredictable resources. This frugality on the part of North Dakota's citizens had many rationalizations, some of which were cited in the preface of this paper. In furtherance of our attempts at fairness, a last statement on this facet of the history of our University is in order.

There is always, in every community, a persistent demand for "tax relief" regardless of the amount of taxes paid and the ability of its citizens to pay taxes. As observed earlier, North Dakota has for most of its history, been an agricultural state and, lacking a more stable industrial base of productivity, the ability of its citizens to pay taxes was largely dependent upon an agricultural economy. More recently, of course, coal and oil have figured as economic factors, but not all of the value of these resources remains in North Dakota. There is no question that there have been periods of poverty in North Dakota. Certainly one cannot impugn, universally the motives of those representatives who were elected by the citizens of the State to represent their interests, including the degree of their support of higher education. It must be noted, however, that to some degree this frugality represented "short-sightedness" since it very often (and even at this writing) kept units of the University on the sharp edge of denial of accreditation. The School of Medicine had very nearly lost its accreditation and was probably enabled to survive mostly by nature of its reputation for strong teaching which was maintained by French, Saiki, and Talbert. The question continues to be raised periodically regarding the ability of the State to support a School of Medicine even in these "relatively prosperous" times when the nation has an unemployment rate running between 10% and 15% and North Dakota suffering only 4%.

To deny, however, or ignore the fact that economic support for higher education has been a somewhat chronic problem would be to deny recognition of those whose votes went to more adequate support for this enterprise over the years. Further, such denial would deprive the University Staff of recognition for their professional dedication and personal sacrifices in bringing up this great university from the wilderness. Support for the University is better now

after a period of strong growth with George Starcher as President from 1954 to 1971 and with President Thomas Clifford's subsequent interest in strengthening faculty and research resources. The University budget has risen under Clifford's leadership from $24.4 million in 1970-71 to $91.7 million in 1981-82. A substantial portion of this increase has gone to the Medical Program. It should be pointed out also that in recent decades a higher proportion of the population has been able to benefit by higher education in the forms of personal education for themselves and their children and the benefits of research which has been generated by its institutions. Certainly these circumstances have made the people more receptive to appeals for support of higher education. A major effort on the part of University representatives is still required at each biennial meeting of the legislature to obtain this support. In the view of this author there is still much unseemly and undesirable posturing at legislative meetings by members of both major parties when it comes time for appropriations for higher education. It appears that a good deal of this posturing is nothing more than electioneering for return to office at the ensuing statewide elections, and may be indulged at the expense of education. And faculty members and other staff of UND continue to support the University and School of Medicine at this writing not only by dedicated professionalism but also economically by means of substandard frozen salaries. Farm prices are depressed at present but for reasons that have proven chronic: surpluses. When and if a solution to this problem is found, or the establishment of an industrial base occurs, perhaps the University can move ahead more rapidly than in the past toward celebration of its second centennial with a bit more stability than it has enjoyed in its first. But move ahead it will, if without adequate fiscal support, then by the sheer energy of its dedicated faculty.

Appendix

Dr. Henry Woutat - Taught Anatomy and Radiological Anatomy from 1907 - 1937.

Dr. Phillip Woutat - Taught Radiological Anatomy from 1951 - 1978.

Graduate Student Peer Reviewed Articles, National and Regional
(Full Length Publications)
1983 - 2001

1983 **McDonnell, Timothy J.** and J.O. Oberpriller. "The ultrastructure of the atrium in the adult newt, *Notophthalmus viridescens* (Amphibia:Salamandridae)". Journal of Morphology, 175:235-251.

McDonnell, Timothy J. and J.O. Oberpriller. "The atrial proliferative response following partial ventricular amputation in the heart of the adult newt. A light and electron microscopic autoradiographic study". Tissue and Cell, 15:351-363.

1984 **McCann, LaVaun M.**, B.C. Albright and T.R. Gest. "A quantitative analysis of the synaptic arrangements in the adult cat cuneate nucleus". Journal of Neuroscience Research, July.

McDonnell, Timothy J. and J.O. Oberpriller. "The response of the atrium to direct mechanical wounding in the heart of the adult newt, *Notophthalmus viridescens*. An electron microscopic autoradiographic study". Cell Tissue Research, 235:583-592.

Sinning, Allan R., M.D. Olson and H.H. Sandstead. "The effects of zinc deficiency on developing photoreceptors in the rat retina: A scanning electron microscopy study". SEM/Vol. II/AMF O'Hare, pp. 867-873.

1985 Oberpriller, J.O., **Timothy J. McDonnell** and J.C. Oberpriller. "Activation of DNA synthesis and mitotic events in atrial myocytes following atrial and ventricular injury". In: **Pathology of Cardiovascular Injury**, H.L. Stone and W.B. Weglicki (eds:), Boston, Martinus Nyhoff Publishing Company, pp. 410-421.

1987 **Tate, John M., Timothy J. McDonnell**, J.C. Oberpriller and J.O. Oberpriller. "Isolation of cardiac myocytes from the adult newt, *Notophthalmus viridescens*. An electron microscopic and quantitative light microscopic analysis". Tissue and Cell, 19:577-585.

1988 **Sinning, Allan R.** and M.D. Olson. "Surface coat material associated with the developing otic placode/vesicle in the chick". Anatomical Record, 220:198-207.

1989 **Marion, M. Susan** and E.C. Carlson. "Ultrastructural analysis of isolated glomerular basement membranes in a spontaneously diabetic rhesus monkey". Acta Anatomica, 135:119-128.

Graduate Student Peer Reviewed Articles Continued:

1989 **Tate, John M.** and J.O. Oberpriller. "Primary cell culture and morphological characterization of ventricular myocytes from the adult newt, *Notophthalmus viridescens*". Anatomical Record, 224:29-42.

Tate, John M., J.O. Oberpriller and J.C. Oberpriller. "Analysis of DNA synthesis in cell cultures of the adult newt cardiac myocyte". Tissue and Cell, 21:335-342.

1990 **Berger, Walter J.** and E.C. Carlson. "High resolution SEM studies of rat glomerular basement membranes following pepsin digestion: Intrinsic fibrillar structures". Histology and Histopathology, 5:289-297.

1991 **Rada, Jody A.** and E.C. Carlson. "Electron microscopic histochemical and immunochemical analyses of heparan sulfate proteoglycans distribution in renal glomerular basement membrane". Histology and Histopathology, 6:149-160.

Rada, Jody A. and E.C. Carlson. "Anionic site and immunogold quantitation of heparan sulfate proteoglycans in glomerular basement membranes of puromycin aminonucleoside nephrotic rats". Anatomical Record, 231:35-47.

1992 **Forsman, Allan D.** and J.T. McCormack. "Microcorrosion casts of hamster luteal and follicular vasculature throughout the estrous cycle". Anatomical Record, 233:515-520.

Soonpaa, Mark H., J.O. Oberpriller and J.C. Oberpriller. "Stimulation of DNA synthesis by PDGF in the newt cardiac myocyte". Journal of Molecular and Cellular Cardiology, 24:1039-1046.

Jackson, Jon A. and E.C. Carlson. "Inhibition of bovine retinal microvascular pericyte proliferation *in vitro* by adenosine". American Journal of Physiology, 263 (Heart and Circulatory Physiology 32):H634-H640.

1993 **Soonpaa, Mark H.**, J.O. Obperiller and J.C. Oberpriller. "Factors altering DNA synthesis in the cardiac myocyte of the adult newt, *Notophthalmus viridescens*". Cell Tissue Research, 275:377-382.

1994 **Marion, M. Susan** and E.C. Carlson. "Immunoelectron microscopic analyses of Maillard reaction products in bovine anterior lens capsule and Descemet's membrane". Biochimica et Biophysica Acta, 119:33-42.

Oberpriller, J.O., J.C. Oberpriller, **Donald G. Matz** and **Mark H. Soonpaa**. "Stimulation of proliferative events in the adult amphibian cardiac myocyte". Ann. NY Academy of Science, 752:30-46.

Graduate Student Peer Reviewed Articles Continued:

1997 **Lou, Yanqin**, J.C. Oberpriller and E.C. Carlson. "The effect of hypoxia on the proliferation of retinal microvessel endothelial cells in culture. Anatomical Record, 248:366-373.

1998 McCormack, J.T., **Matt G., Friederichs**, S.D. Limback and G.S. Greenwald. "Apoptosis during spontaneous luteolysis in the cyclic golden hamster: biochemical and morphological evidence". Biology of Reproduction, 58:255-260.

1999 Rada, J.A., C.A. Perry, **Michelle L. Slover** and V.R. Achen. "Gelatinase A and TIMP-2 expression in the fibrous sclera of myopic, recovering and control chick eyes". Investigative Ophthalmology Visual Science, 40:3091-3099.

Rada, J.A., V.R. Achen, S. Penagonda and **Bobbie A. Mount**. "Proteoglycan composition in the human sclera during growth and aging". Investigative Ophthalmology Visual Science, 41:1639-1648.

2000 **Austin, Bobbie A.**, P.J. Roughley and J.A. Rada. "Alternative forms of lumican core protein are present in the human sclera". Proceedings of the 8th International Conference on Myopia, pp. 205-210.

Carr, P.A., **Meifang Liu** and **Richard A. Zaruba**. "Emzyme histochemical profile of immunohistochemically identified Renshaw cells". Brain Research Bulletin, 54:669-674.

Carr, P.A., M.J. Roller and **Richard A. Zaruba**. "Peptidergic input to immunohistochemically identified Renshaw cells". Brain Research, 887:194-198.

Graduate Student National or International Presentations
1983 - 2001

1983 **McGee, Robert S.** and M.S. Joshi. "Concentration and localization of immunoglobulins in aging and vasectomized rats". Anatomical Record, 205:118A, presented at the American Association of Anatomists meetings, April 3-7 in Atlanta, Georgia.

Culberson, J.L., B.C. Albright and **LaVaun M. McCann.** "A comparative study of fiber sorting in cervical dorsal column afferents". Anatomical Record, 205:41, presented at the American Association of Anatomists meetings, April 3-7 in Atlanta, Georgia.

Sinning, Allan R., M.D. Olson and H.H. Sandstead. "The effects of zinc deficiency in developing photoreceptors in the rat". Anatomical Record, 205:186A, presented at the American Association of Anatomists meetings, April 3-7 in Atlanta, Georgia.

1984 **McDonnell, Timothy J.**, J.C. Oberpriller and J.O. Oberpriller. "Isolation of cardiac myocytes from the adult newt heart. An electron microscopic and quantitative light microscopic analysis". Anatomical Record, 208:109A, presented at the American Association of Anatomists meetings, April 8-12 in Seattle, Washington.

Olson, M.D. and **Allan R. Sinning**. "Surface coat material (SCM) associated with the early lens placode". Anatomical Record, 208:131A, **Invited paper** at the Ocular Tissue Symposium in Philadelphia, Pennsylvania, April 15-20.

Sinning, Allan R. and M.D. Olson. "Surface coat material (SCM) associated with the invaginating auditory (otic) placode". Anatomical Record, 208:168A, presented at the American Association of Anatomists, April 8-12 in Seattle, Washington.

1985 Carlson, E.C., J.L. Audette and **M. Susan Marion**. "Diabetic glomerulopathy in rhesus monkey. Ultrastructural analysis of isolated basement membrane". Anatomical Record, 211:34a-35a, presented at the American Association of Anatomists meetings, May 5-9 in Toronto, Ontario, Canada.

Jyring, Ronald K., L.A. Repesh and E.C. Carlson. "Interactions of tumor cells with kidney glomeruli and glomerular basement membrane: A new model for metastasis". Anatomical Record, 211:94a-95a, presented at the American Association of Anatomists meetings, May 5-9 in Toronto, Ontario, Canada.

National and International presentations continued:

1985 **Sinning, Allan R.** and M.D. Olson. "Visualization of surface coat material associated with the invaginating otic placode by freeze-substitution and Con A binding". Anatomical Record, 211:179a, presented at the American Association of Anatomists meetings, May 5-9 in Toronto, Ontario, Canada.

Berger, Walter J. and E.C. Carlson. "Scanning electron microscopy of renal basement membranes following enzyme dissection". **Invited paper** presented at the Proceedings of International Symposium on Renal Basement Membranes in London, England, September 16-20.

1986 **Berger, Walter J.** and E.C. Carlson. "High resolution SEM of acellular renal basement membranes followng Streptomyces griesus protease (SGP) dissection". Anatomical Record, 214:11a, presented at the American Association of Anatomists meetings, April 5-10 in Reno, Nevada.

Tate, John M. and J.O. Oberpriller. "The cell culture of ventricular myocytes of the adult newt, *Notophthalmus viridescens*". Anatomical Record, 214:132a, presented at the American Association of Anatomists meetings, April 5-10 in Reno, Nevada.

Jackson, Jon A. and M.D. Olson. "The effects of 6-diazo-5-oxo-L-norleucine (DON) on the in vitro development of the otic placode in the chick. Anatomical Record, 214:59a, presented at the American Association of Anatomists meetings, April 5-10 in Reno, Nevada.

1987 **Jyring, Ronald K.**, L.A. Repesh and E.C. Carlson. "In vitro quantitation of tumor cell attachment to isolated glomerular basement membranes". Anatomical Record, 218:69a, presented at the American Association of Anatomists meetings May 10-14 in Washington, D.C.

Block, Jeff A. and E.C. Carlson. "Retinal pigment epithelial cell conditioned medium (RPECM) promotes growth of retinal microvessel endothelial cells (RMEC) in vitro". Anatomical Record, 218:17a-18a, presented at the American Association of Anatomists meetings May 10-14 in Washington, D.C.

Berger, Walter J. and E.C. Carlson. "A high resolution SEM analysis of acellular glomerular basement membrane following pepsin digestion". Anatomical Record, 218:16a, presented at the American Association of Anatomists meetings May 10-14 in Washington, D.C.

National and International presentations continued:

1987 **Rada, Jody A.** and E.C. Carlson. "Ultrastructural analyses of detergent soluble anionic sites in glomerular basement membrane". Journal of Cell Biology, 105:40a, presented at the American Society for Cell Biology meetings November 16-20 in St. Louis, Missouri.

Tate, John M. and J.O. Oberpriller. "A light microscopic autoradiographic study of adult newt ventricular myocytes in cell culture". American Journal of Anatomy, 218:135a-136a presented at the American Association of Anatomists meetings May 10-14 in Washington, D.C.

1989 **Forsman, Allan D.** and J.T. McCormack. "Angiogenesis in the corpus luteum of the Golden Hamster as revealed by a microcorrosion casting technique". Journal of Cell Biology, 107:579a presented at the American Society for Cell Biology meetings Jan. 29 - Feb. 3 in San Francisco, California.

Forsman, Allan D. and J.T. McCormack. "A morphological description of angiogenesis in the corpus luteum of the Golden Hamster, *Mesocricetus auratus*, as revealed by microcorrosion casting". Anatomical Record, 223:40a presented at the American Association of Anatomists meetings April 8-13 in New Orleans, Louisiana.

Jackson, Jon A. and E.C. Carlson. "Regulation of retinal microvascular pericyte proliferation by adenosine". Journal of Cell Biology, 109:312a presented at the American Society for Cell Biology meetings Jan. 29 - Feb. 3 in San Francisco, California.

Jackson, Jon A. "Adenosine and hypoxia inhibit retinal microvascular pericyte proliferation in vitro". Poster presentation at the **Gordon Research Conference** titled *Molecular and Genetic Basis of Cell Proliferation* July 10-14 in New London, New Hampshire.

1990 **Marion, M. Susan** and E.C. Carlson. "Nonenzymatic glycation in calf and adult bovine ocular basement membranes". Anatomical Record, 226:65a-66a presented at the American Association of Anatomists meetings April 22-25 in Philadelphia, Pennsylvania.

Soonpaa, Mark H. and J.O. Oberpriller. "Agents affecting the proliferative behavior of the adult newt cardiac myocyte". Anatomical Record, 226:96a presented at the American Association of Anatomists meetings April 22-25 in Philadelphia, Pennsylvania.

1991 **Lou, Yanqin** and E.C. Carlson. "The effect of hypoxia on the proliferation and cytoskeletal arrangement of retinal microvessel endothelial cells in vitro". Anatomical Record, 229:95a. Poster presentation at the American Association of Anatomists meetings April 20-24 in Chicago, Illinois.

National and International presentations continued:

1991 **Marion, M. Susan** and E.C. Carlson. "A correlation between thickening of two ocular basement membranes and non-enzymatic glycosylation". Association of Vision and Research in Ophthalmology, 32:856, presented at the ARVO meetings in March in Ft. Lauderdale, Florida.

Rodacker, Mark W. and J.T. McCormack. "An immunohistochemical study of the hamster oviduct". Anatomical Record, 229:74a presented at the American Association of Anatomists meetings April 20-24 in Chicago, Illinois.

Forsman, Allan D. and J.T. McCormack. "Immunoglobulin binding in the hamster zona pellucida". Anatomical Record, 229:27a, presented at the American Association of Anatomists meetings April 20-24 in Chicago, Illinois.

Soonpaa, Mark H. and J.O. Oberpriller. "Alteration of DNA synthesis in the adult newt ventricular myocyte". Anatomical Record, 229:85a, presented at the American Association of Anatomists meetings April 20-24 in Chicago, Illinois.

Soonpaa, Mark H. and J.O. Oberpriller. "DNA synthetic control in the adult newt cardiac myocyte". Journal of Cell Biology, 115:279a, presented at the American Society for Cell Biology meetings December 8-12 in Boston, Massachusetts.

1992 **Matz, Donald G.**, J.O. Oberpriller and J.C. Oberpriller. "Characterization of the dividing newt cardiac ventriculomyocyte". Anatomical Record, 232:57a, presented at the American Association of Anatomists meetings March 11-14 in New York, New York.

Valder, Ann M. and M.D. Olson. "Cellular precursors supporting coronary vessel vasculogenesis". Anatomical Record, 223:88a-89a, presented at the American Association of Anatomists meetings March 11-14 in New York, New York.

Rodacker, Mark W. and J.T. McCormack. "A possible regulatory role for immunocytes in ovarian function of the Golden Hamster". Anatomical Record, 232:75a, presented at the American Association of Anatomists meetings March 11-14 in New York, New York.

1993 **Valder, Ann M.** and M.D. Olson. "Immunogold localization of endothelial precursors during coronary vasculogenesis within the subepicardial space of the quail heart". Anatomical Record, 235:117a, presented at the American Association of Anatomists meetings March 27-31 in San Diego, California.

National and International presentations continued:

1993 Rieke, G.K. and **Wendy C. Perryman.** "The kynurenines are endogenous neurotoxins that spare selective populations of neurons in the rat striatum". Anatomical Record, 235:98, presented at the American Association of Anatomists meetings March 27-31 in San Diego, California.

Ruit, K.G. and **Yuri F. McKee.** "Prenatal dendritic development of rat sympathetic preganglionic neurons". Society for Neuroscience Abstracts, 19:1713, presented at the 23rd Annual Meeting of the Society for Neuroscience, November 7-12 in Washington, D.C.

Rodacker, Mark W. and J.T. McCormack. "Structural luteolysis in the hamster". Anatomical Record, 235:99a, presented at the American Association of Anatomists meetings March 27-31 in San Diego, California.

Bakken, Naomi A. and C.D. Hunt. "Dietary boron modified the effects of vitamin D3 nutriture on bone morphology in the chick". FASEB Journal, 7:A204, presented at the Experimental Biology meetings March 31 in New Orleans, Louisianna.

Rieke, G.K., **Wendy C. Perryman**, S.M. Walker and T. Menisher. "Performance deficits in a delayed spatial orientation task in rats with chronic bilateral injection of quinolinic acid into the medial striatum". Society for Neuroscience Abstracts, 19:366, presented at the 23rd Annual Meeting of the Society for Neuroscience, November 7-12 in Washington, D.C.

1994 **Matz, Donald G.**, J.O. Oberpriller and J.C. Oberpriller. "The cytoskeleton in the cultured newt ventricylomyocyte". FASEB Journal, 8:A620, presented at the Experimental Biology Meetings April 24-28 in Anaheim, California.

Valder, Ann M. and M.D. Olson. "Immunogold of vascular smooth muscle precursors during coronary vasculogenesis in the embryonic quail heart". FASEB Journal, 8:A394, presented at the Experimental Biology 1994 Meetings, April 24-28 in Anaheim, California.

Rodacker, Mark W. and J.T. McCormack. "Nonspecific esterase activity is increased in ovarian follicular atresia and corpus luteum regression in the cyclic Golden Hamster". FASEB Journal, 8:A905, presented at the Experimental Biology Meetings, April 24-28 in Anaheim, California.

Friederichs, Matthew G. and J.T. McCormack. "Morphological evidence of apoptosis during early structural luteolysis in the Golden Hamster". FASEB Journal, 8:A905, presented at the Experimental Biology Meetings, April 24-28 in Anaheim, California.

National and International presentations continued:

1994 **Perryman, Wendy C.** and G.K. Rieke. "Afferent connections of the globus pallidus as defined by a retrograde, transsynaptic tracer". Society for Neuroscience Abstracts, 20:333, presented at the Society for Neuroscience meetings November 13-18 in Miami Beach, Florida.

Walker, S.M., **Wendy C. Perryman** and G.K. Rieke. "Intrastriatal injections of Quinolinic acid show marked choline acetyl-transferase and NADPH-diaphorase cell loss". Society for Neuroscience Abstracts, 20:989, presented at the Society for Neuroscience meetings November 13-18 in Miami Beach, Florida.

Ruit, K.G. and **Michael Bennett**. "Cortical efferent projections to spinal cord autonomic centers in the rat". Society for Neuroscience Abstracts, 20:1374, presented at the Society for Neuroscience meetings November 13-18 in Miami Beach, Florida.

McKee, Yuri F., K.J. Townley and K.G. Ruit. "Prenatal development of spinal visceral afferents in the rat". Society for Neuroscience Abstracts, 20:959, presented at the Society for Neuroscience meetings November 13-18 in Miami Beach, Florida.

Cameron, Craig and K.G. Ruit. "Morphology of sympathetic ganglion neurons in spontaneously hypertensive rats". Society for Neuroscience Abstracts, 10:1370, presented at the Society for Neuroscience meetings November 13-18 in Miami Beach, Florida.

1995 **Nomeland, Julie C.**, E.C. Carlson and J.C. Swinscoe. "Collagen production by bovine retinal microvessel pericytes includes type II". FASEB Journal, 9:607A, presented at the Experimental Biology meetings April 10-13 in Atlanta, Georgia.

Matz, Donald G., J.O. Oberpriller and J.C. Oberpriller. "Mitosis in the cultured newt ventricular myocyte". FASEB Journal, 9:A828, presented at the Experimental Biology meetings April 10-13 in Atlanta, Georgia.

1996 **Perryman, Wendy C., Yuri F. McKee**, C.A. Perry, J.A. Rada, and K.G. Ruit. "Temporally-regulated gene expression in embryonic rat thoracic spinal cord revealed by differential display". Society for Neuroscience Abstratcs, 22:1737, presented at the Society for Neuroscience meetings, November 16-21.

Ressler, Michael J., J.L. Audette, S.D. Adkins, R.C. Vari and E.C. Carlson. "Ultrastructural analysis of nephropathy in the BB/Wistar diabetic rat". Journal of American Society of Nephrology, 7:1877, presented at the American Society of Nephrology.

National and International presentations continued:

1997 **Ressler, Michael J.**, M.A. Schroeder, J.L. Audette, S.D. Adkins, R.C. Vari and E.C. Carlson. "Ultrastructural and functional analyses of nephropathy in the diabetic BB/Wistar rat". FASEB Journal, 11:A617, presented at the Experimental Biology Meetings.

Rodaker, Mark W. and J.T. McCormack. "Ultrastructural evidence shows luteolysis proceeds by apoptosis in the cyclic hamster". FASEB Journal, 11:A620, presented at the Experimental Biology Meetings.

Perry, C.A., **Michelle L. Slover**, S. Laducer and J.A. Rada. "Expression of gelatinase A in the sclera of chick eyes during the induction and recovery of form deprivation myopia". Investigative Ophthalmology Visual Science, 38:S290, presented at the ARVO meetings in Fort Lauderdale, Florida.

1998 **Rutherford, Julie C.** and E.C. Carlson. "Type II collagen is secreted by bovine retinal pericytes and glomerular mesangial cells in vitro, and is found in pericytic and mesangial matrices in vivo". FASEB Journal, 12:A3, presented at the Experimental Biology meetings.

Carlson, E.C., J.L. Audette, M.A. Schroeder, S.D. Adkins, R.C. Vari and **Michael J. Ressler**. "Significant glomerular basement membrane thickening accompanies normal GFR in normoglycemic BB/Wistar (diabetic prone) rats". FASEB Journal, 13:A341, presented at the Experimental Biology meetings.

1999 **Mount, Bobbie A.** and J.A. Rada. "Corneal keratan sulfate proteoglycan (lumican) is present in the human sclera as both proteoglycan and glycoprotein forms". Investigative Ophthalmology Visual Science, 40:S452, presented at the ARVO meetings in Fort Lauderdale, Florida.

Huang, Yuan and J.A. Rada. "Identification of proteins secreted by the choroid during the recovery from experimentally induced myopia". Investigative Ophthalmology Visual Science, 40:S451, presented at the ARVO meetings in Fort Lauderdale, Florida.

2000 Carr, P.A., **Meifang Liu** and **Richard A. Zaruba**. "Enzyme activity in immunohistochemically-identified Renshaw cells. Society for Neuroscience Abstracts, Vol. 26, presented at the Society for Neuroscience meetings in San Diego, California.

2001 **Yan, Xiaohong (Peter)**, M. Walkieqicz and B.D. Grove. "Localization of gravin at intercellular junctions". Presented at the Experimental Biology meetings in New Orleans, Louisiana.

Regional Presentations for Anatomy & Cell Biology Graduate Students
1983 - 2001

1985 Olson, M.D. and **Allan R. Sinning**. "Otic placode morphogenesis". Presented at the Annual Frank Low Research Day, UNDSM, April 13.

1986 **Tate, John M.** "The cell culture of ventricular myocytes of the adult newt, *Notophthalmus viridescens*". Presented at the UNDSM Student Research Day, April 24.

Jackson, Jon A. "The effects of 6-diazo-t-oxo-L-norleucine on chick otic placode development in vitro". Presented at the UNDSM Student Research Day, April 24.

1987 **Block, Jeff A.** "Retinal microvessel endothelial cell growth in vitro is promoted by retinal pigment epithelial cell conditioned medium". Presented at the joint meetings of the North Dakota and Minnesota Academy of Science meetings in Moorhead, Minnesota, April 23-25. Awarded the A. Rodger Denison Award for this presentation.

1988 **Tate, John M.** "The cell culture, morphological characterization and analysis of proliferative potential of ventricular myocytes from the adult newt, *Notophthalmus viridescens*". Presented at the North Dakota Academy of Science meetings in Bismarck, North Dakota, April 28-30. Awarded the A. Rodger Denison Award for this presentation.

1989 **Jackson, Jon A.** and E.C. Carlson. "Inhibition of retinal proliferation in an in vitro model of local tissue hypoxia". Presented at the North Dakota Academy of Science meetings in Grand Forks, ND, April 27-28.

Jackson, Jon A. "Regulation of retinal capillary pericyte proliferation by adenosine and hypoxia". Presented at the 6th Annual UND/UM Anatomy Exchange Day in Winnipeg, Manitoba, Canada, September 9th.

1990 **Soonpaa, Mark H.** "Agent affecting the proliferative behavior of the adult newt cardiac myocyte". Presented at the 10th Annual Frank Low Research Day in Fargo, ND, April 19, at the UND Medical Education Center.

Marion, M. Susan. "Nonenzymatic glycation of bovine lens capsule and Descemet's membrane". Presented at the 7th Annual UND/UM Anatomy Exchange Day, September 8 in Grand Forks, ND.

Forsman, Allan D. "Immunohistochemical staining for hamster IgG throughout the estrous cycle of the Golden Hamster". Presented at the 7th Annual UND/UM Anatomy Exchange Day, September 8 in Grand Forks, ND.

Regional Presentations of Graduate Students continued:

1990 **Lou, Yanqin** and E.C. Carlson. "The effect of hypoxia on the proliferation and cytoskeletal arrangement of retinal microvessel endothelial cells in vitro". Presented at the 11th Annual Frank Low Research Day, May 3, in Fargo, ND.

Soonpaa, Mark H. and J.O. Oberpriller. "Alteration of DNA synthesis in the adult newt ventricular myocyte". Presented at the 11th Annual Frank Low Research Day, May 3, in Fargo, ND.

1991 **Valder, Ann M.** "Coronary vasculogenesis: A light and electron microscopic study". Presented at the 8th Annual UND/UM Anatomy Exchange Day in Winnipeg, Manitoba, Canada, September 7th.

Soonpaa, Mark H. "Alteration of DNA synthesis in the adult newt ventricular myocyte". Presented at the 8th Annual UND/UM Anatomy Exchange Day in Winnipeg, Manitoba, Canada, September 7th.

1992 **Rodacker, Mark W.** "Characteristics of the inflammatory response associated with follicular atresia and corpus luteum regression". Presented at the 9th Annual UND/UM Anatomy Exchange Day, September 12, in Grand Forks, ND.

Matz, Donald G. "Immunofluorescent localizations in the newt heart". Presented at the 9th Annual UND/UM Anatomy Exchange Day, September 12, in Grand Forks, ND.

1993 **Valder, Ann M.** and M.D. Olson. "Immunogold localization of endothelial precursors during coronary vasculogenesis with the subepicardial space of the quail heart". Presented at the 13th Annual Frank Low Research Day, April 19 in Fargo, ND.

McKee, Yuri F. "Prenatal dendritic development of rat sympathetic preganglionic neurons". Presented at the 10th Annual UND/UM Anatomy Exchange Day, September 11 in Winnipeg, Manitoba, Canada.

1994 **McKee, Yuri F.** "Prenatal dendritic development of rat sympathetic preganglionic neurons". Presented at the 14th Annual Frank Low Research Day, April 15, in Fargo, ND.

Valder, Ann M. "Immunolocalization of endothelial and vascular smooth muscle precursors during coronary vasculogenesis in the embryonic heart". Presented at the 14th Annual Frank Low Research Day, April 15, in Fargo, ND.

Regional Presentations of Graduate Students continued:

1994 Leff, M.A., D.J. Buckley, J.T. McCormack, **Matt G. Friederichs** and A.R. Buckley. "2,3,7,8-tetrachlorodiphenyl-P-Dioxin (TCDD) induced apoptosis in growth factor dependent and resistance in autonomous rat Nb2 lymphoma cells". Presented at the North Dakota Academy of Science meeting in Fargo, ND, April 29th.

Cameron, Craig D. "Introductory morphometric analysis of superior cervical ganglion cells from spontaneously hypertensive rats". Presented at the 11th Annual UND/UM Anatomy Exchange Day, September 10th in Grand Forks, ND.

Friederichs, Matthew G. "Morphological evidence for apoptosis during early structural luteolysis". Presented at the 11th Annual UND/UM Anatomy Exchange Day, September 10th in Grand Forks, ND.

1995 **McKee, Yuri F.**, K.J. Townley and K.G. Ruit. "Prenatal development of spinal visceral afferent in the rat". Presented at the 15th Annual Frank Low Research Day, April 7th in Grand Forks, ND.

Perryman, Wendy C. and G.K. Rieke. "Extrastriatal and intrastriatal connections as defined by retrograde tracers and applied immunocytochemistry". Presented at the 15th Annual Frank Low Research Day, April 7th in Grand Forks, ND.

Nomeland, Julie C.. E.C. Carlson and J.C. Swinscoe. "Collagen production by bovine retinal microvessel pericytes in vitro includes type II". Presented at the 15th Annual Frank Low Research Day, April 7th in Grand Forks, ND.

Nomeland, Julie C.. E.C. Carlson and J.C. Swinscoe. "Collagen production by bovine retinal microvessel pericytes in vitro includes type II". Presented at the 12th Annual UND/UM Anatomy Exchange Day in Winnipeg, Manitoba, Canada on September 9th.

1996 **Nomeland, Julie C.** and E.C. Carlson. "Type II collagen is included in the secretory profiles of bovine retinal microvessel pericytes and renal glomerular mesangial cells in vitro. Presented at the 16th Annual Frank Low Research Day, April 12th in Grand Forks, ND.

Hyjek, David H. "Coronary blood vessel development within the epicardium of the embryonic quail heart". Presented at the 13th Annual UND/UM Anatomy Exchange Day in Grand Forks, ND on September 7th.

Ressler, Michael J. "Ultrastructural and functional analyses of nephropathy in the BB/Wistar rat". Presented at the 13th Annual UND/UM Anatomy Exchange Day in Grand Forks, ND on September 7th.

Regional Presentations of Graduate Students continued:

1996 Grandalen, D.L., **David H. Hyjek, Michelle L. Slover** and M.D. Olson. "Coronary blood vessel development within the epicardium of the embryonic quail heart. Presented at the ND Science, Engineering and Maathematics session held in Fargo, ND on July 31.

1997 **Perryman, Wendy C., Yuri F. McKee,** C. Perry, J. Rada, and K. Ruit. "Temporally-regulated gene expression in embryonic rat thoracic spinal cord revealed by differential display". Presented at the 17th Annual Frank Low Research Day in Grand Forks, ND on April 11th.

Ressler, Michael J., M. Schroeder, J. Audette, R. Vari and E.C. Carlson. "Ultrastructural and functional analyses of nephropathy in the diabetic BB/Wistar rat". Presented at the 17th Annual Frank Low Research Day in Grand Forks, ND on April 11th.

Ressler, Michael J. and E.C. Carlson. "Ultrastructural and functional analyses of nephropathy in the spontaneously diabetic BB/Wistar rat". Presented at the ND Academy of Science meetings on September 15-16th.

Perryman, Wendy C., Yuri F. McKee, C. Perry, J. Rada, and K. Ruit. "Temporally-regulated gene expression in embryonic rat thoracic spinal cord revealed by differential display". Presented at the North Dakota Academy of Science, September 15-16.

1998 **Huang, Yuan** and J.A. Rada. "Role of the choroid in ocular growth regulation". Presented at the 18th Annual Frank Low Research Day, April 3rd in Grand Forks, ND.

Jeno, Susan H.N., and J.A. Rada. "A regional comparison of proteoglycan composition of the human glenohumeral joint capsule". Presented at the 18th Annual Frank Low Research Day, April 3rd in Grand Forks,. ND.

Mersch, Dawn, J.T. McCormack and J. O. Oberpriller. "Apoptosis in ventricular myocytes of the adult newt". Presented at the 18th Annual Frank Low Research Day, April 3rd in Grand Forks,. ND.

Perry, C.A., **Michelle A. Slover**, S. Ladoucer and J.A. Rada. "Expression of gelatinase A in the sclera of chick eyes during the induction and recovery of form deprivation myopia". Presented at the 18th Annual Frank Low Research Day, April 3rd in Grand Forks,. ND.

Rada, J.A., V.R. Achen, **Bobbie A. Mount** and P.W. Fox. "Age-related changes in scleral proteoglycan synthesis and accumulation". Presented at the 18th Annual Frank Low Research Day, April 3rd in Grand Forks,. ND.

1998 **Rutherford, Julie C.** and E.C. Carlson. "Type II collagen is secreted by bovine retinal pericytes and glomerular mesangial cells in vitro and is found in pericytic and mesangial matrices in vivo. Presented at the 18th Annual Frank Low Research Day, April 3rd in Grand Forks,. ND.

1999 Carlson, E.C., P.N. Epstein, R.C. Vari, **Michael J. Ressler**, J.L. Audette, M.A. Schroeder and S.D. Adkins. "Glomerular basement membrane thickening in diabetes: a tale of two models". Presented at the 19th Annual Frank Low Research Day, April 9th in Grand Forks, ND.

Huang, Yuan. "Identification of proteins secreted by the choroid during recovery from experimentally induced myopia in chicks". Presented at the UND/UM Anatomy Exchange Day on September 11th in Grand Forks, ND.

2000 **Siegel, Sandra M.**, B.D. Grove and P.A. Carr. "SseCKS-immunolabelling in the rat nervous system". Presented at the 20th Annual Frank Low Research Day, April 5th, in Grand Forks, ND.

Liu, Meifang, and B.D. Grove. "Expression of Gravin in SH-SY5Y neuroblastoma cells". Presented at the 20th Annual Frank Low Research Day, April 5th, in Grand Forks, ND.

Zaruba, Richard A., M.J. Roller and P.A. Carr. "The distribution of p-immunoreactie boutons on immunohistochemically identified Renshaw cells in cat and rat lumbar spinal cord". Presented at the 20th Annual Frank Low Research Day, April 5th, in Grand Forks, ND.

Aadland, Sally A. and M.M. Atkinson. "Stability of gap junctions during plasma membrane remodeling". Presented at the Basic Sciences Retreat held on May 19-21 in Walhalla, ND.

Johnson, Janell M. and J.A. Rada. "The production and purification of fibromodulin in a baculovirus system". Presented at the Basic Sciences Retreat held on May 19-21 in Walhalla, ND.

Liu, Meifang, and B.D. Grove. "Expression of Gravin in SH-SY5Y neuroblastoma cells". Presented at the Basic Sciences Retreat held on May 19-21 in Walhalla, ND.

Traiser, Nancy L. and M.M. Atkinson. "Behavior and associations of a connexin 43 chimera in cultured cells". Presented at the Basic Sciences Retreat held on May 19-21 in Walhalla, ND.

Regional Presentations of Graduate Students continued:

Regional Presentations of Graduate Students continued:

2000 **Yan, Xiaohong (Peter)**, M. Walkiewicz and B.D. Grove. "Effect of gravin expression on expression of E-cadherin in AN3CA cells". Presented at the Basic Sciences Retreat held on May 19-21 in Walhalla, ND.

Austin, Bobbie A., P.J. Roughley and J.A. Rada. "Alternative forms of lumican core protein are present in the human sclera". Presented at the Basic Sciences Retreat held on May 19-21 in Walhalla, ND.

Austin, Bobbie A., P.J. Roughley and J.A. Rada. "Alternative forms of lumican core protein are present in the human sclera". Presented at the UND/UM Anatomy Exchange Day on September 9th in Winnipeg, Manitoba, Canada.

Aadland, Sally A. and M.M. Atkinson. "Stability of gap junctions during plasma membrane remodeling". Presented at the UND/UM Anatomy Exchange Day on September 9th in Winnipeg, Manitoba, Canada.

Siegel, Sandra M., B.D. Grove and P.A. Carr. "SseCKS-immunolabelling in the rat nervous system". Presented at the UND/UM Anatomy Exchange Day on September 9th in Winnipeg, Manitoba, Canada.

Yan, Xiaohong (Peter), M. Walkiewicz and B.D. Grove. "Effect of gravin constructs in AN3CA cells". Presented at the UND/UM Anatomy Exchange Day on September 9th in Winnipeg, Manitoba, Canada.

Zaruba, Richard A., Meifang Liu, and P.A. Carr. "Enzyme activity in immunohistochemically-identified Renshaw cells". Presented at the UND/UM Anatomy Exchange Day on September 9th in Winnipeg, Manitoba, Canada.

2001 **Siegel, Sandra M.**, B.D. Grove and P.A. Carr. "Localization of SseCKS-immunolabelling within rat primary sensory neurons". Presented at the 21st Annual Frank Low Research Day on April 19th in Grand Forks, ND.

Zaruba, Richard A. and P.A. Carr. "Distribution and quantification of Renshaw cell interneurons in the rat brainstem and spinal cord". Presented at the 21st Annual Frank Low Research Day on April 19th in Grand Forks, ND.

Traiser, Nancy L. and M.M. Atkinson. "Localization of Cx43-fluorescent protein chimeras and their response to cAMP levels in a moues mammary tumor cell line. Presented at the 21st Annual Frank Low Research Day on April 19th in Grand Forks, ND.

Regional Presentations of Graduate Students continued:

2001 **Aadland, Sally A.** and M.M. Atkinson. "Stability of gap junctions during plasma membrane remodeling of NEK cells". Presented at the 21st Annual Frank Low Research Day on April 19th in Grand Forks, ND.

Johnson, Janell M. and J.A. Rada. "The productionand purification of fibromodulin in a baculovirus system. Presented at the 21st Annual Frank Low Research Day on April 19th in Grand Forks, ND.

Yan, Xiaohong (Peter), M. Walkiewicz and B.D. Grove. "Effect of gravin constructs in AN3CA cells". Presented at the 21st Annual Frank Low Research Day on April 19th in Grand Forks, ND.

Austin, Bobbie A., C.H. Coulon, W-Y Kao, C.Y. Liu and J.A. Rada. "Analysis of scleral collagen fibrils in normal and lumican-deificient mice". Presented at the 93rd Annual North Dakota Academy of Science meetings in Bismarck, ND on April 26-27th.

M.S.

Name	Month/Year	Thesis Title
*Eidbo, Walter B.	Aug. 1953	An Investigation of the Bronchial Pattern of the Lungs of the Adult
		Mongrel Dog
Ahlness, Doris L.	Aug. 1955	The Effects of Adrenalectomy and Hypophysectomy on
		Lathyrism in the Rat
Anderson, D.	Aug. 1955	(Not Titled)
*Parisi, Raymond J.	Jul. 1957	Initial Histological Changes of Lymph Nodes of Lathyric Rats:
		With Observations on Changes Induced by Hydrocortisone and
		Somatotropin
*Neuenschwander, A. Roger	Aug. 1958	Origin of Hematopoiesis and Hematopeietic Tissues in Exostoses
		Produced in Rats by a Diet of Sweet Peas
*Miller, Douglas A.	Aug. 1959	Influence of Muscle Tension on the Position and Histology of the
		Proximal Tibial Epiphyseal Cartilage of Lathyric Rats
*Bauman, C. Gottfried	Aug. 1959	The Influence of the Tenuissimus and Adductor Magnus Muscles
		on the Femur of Lathyritic Rats
*Goertzen, Eugene W.	Aug. 1961	A Study of the Oseofascial Compartments of the Thigh
Pettersen, James C.	Aug. 1961	The Distribution of Non-specific Estrases in the Spleen of the
		Normal Rat
Sether, Lowell A.	Jun. 1962	Succinic Dehydrogenase Activity of Cardiac and Skeletal Muscle
		and Periosteum of Normal and Lathyritic Rats
Hillman, Dean E.	Jun. 1962	A Light and Phase Microscopy Study of Normal and Degenerating
		Peripheral Nerves
Burkel, William E.	Jun. 1962	Ovarian Changes Associated with Vitamin A Deficiency in the Rat
Skjonsby, Harold S.	Aug. 1962	Histology of Lymph Nodes of Lathyritic Rats
Ollerich, Dwayne A.	Aug. 1962	A Histochemical Study of Nucleic Acids in the Periosteum of
		Normal and Lathyric Rats
*Boade, W. Allen	Aug. 1962	The Angiography of the Pectineus and Adductor Longus Muscles
		and Their Related Exostosis in Lathyrism in the Rat
Jacobsen, Glenn D.	Jun. 1963	A Comparative Histochemical and Morphological Study of
		Ellipsoid Sheaths of Dog and Cat Spleens
*entered Med. School after degree		

Name	Month/Year	Thesis Title
Erickson, Kay M.	Jun. 1963	The Metalophil, Non-specific and Acid Phosphatase Reactions in
		the White Rat Thymus
Shervey, Paul D.	Aug. 1963	A Morphological and Histochemical Study of the Intestinal
		Epithelium of the Starved Rat
Severson, Arlen R.	Aug. 1963	Cytochrome Oxidase Activity of Skeletal Muscle and Periosteum of
		Normal and Lathyric Rats
*Purtillo, David T.	Aug. 1963	The Histology of the Squirrel Spleen as Compared with Other
		Mammals
*Lisk, Sharadan E.	Jun. 1965	The Spleen of the Genus Citellus: A Histological and Histochemical
		Study
Snodgrass, Michael J.	Aug. 1966	The Histochemistry and Reaction to Particular Matter of the
		Reticuloendothelial System of the Rabbit's Spleen
*Rosen, William C.	Aug. 1966	The Morphology of Blood Vessels Traversing the Subarachnoid
		Space
*Gunderson, Leonard L.	Aug. 1966	Light Microscopy of Peripheral Nerve Adequately Fixed for
		Electron Microscopy
Bason, Charles R.	Aug. 1966	Light Microscopy of the Normal Rat Ovary Adequately Fixed for
		Electron Microscopy
Peterson, Richard G.	Aug. 1967	The Development of Basement Membranes Associated With
		Vascular Invasion of the Brain in the Chick Embryo
Ingli, James E.	Aug. 1967	An Autoradiographic Study of the Effect of Beta-Aminopropionitrile
		on the Prelabeled Mature Collagen of the Prepartum Rat Uterus
*McCabe, John S.	Aug. 1968	The Subarachnoid Space: An Area of Transition in Peripheral Nerve
Holm, Dan A.	Aug. 1968	The Effects of Non-thermal Radio Frequency Radiation on Human
		Lymphocytes In Vitro
Haller, Frederick R.	Aug. 1968	The Effects of Laser Irradiation on Human Lymphocytes In Vitro
Frederickson, Richard G.	Aug. 1968	Blood Vessels and Tissue Space Associated with the Brain of the Rat
Steven, W.M.	Jun. 1968	(Not Titled)
*entered Med School after degree		

Name	Month/Year	Thesis Title
*Johnson, Peter D.	Jun. 1969	An Autoradiographic Study of Tritiated-Thymidine Uptake in the
		Mitral Valve of Prenatal and Postnatal Rats
Haller, Ann C.	Jun. 1969	Developmental Relationships of the Mesonephric and Metanephric
		Ducts of the Urethra and Bladder in the Pig
*O'Connell, James J.	Aug. 1969	A Histochemical and Fine Structural Study of Extracellular Fibrils
		in the Developing Chick Embryo
*Carlson, Mark J.	Aug. 1969	The Incidence of Tritiated Thymidine Reutilization and the
		Probability of Epidermal Transformation in the Regenerating Limb
		of the Newt, Diemictylus viridescens
Evan, A.P.	Aug. 1969	(Not Titled)
Olson, Mark D.	Aug. 1970	The Fine Structure Associated with Developing Cartilage in the
		Perinotochordal Area of the Chick Embryo
*Himango, William A.	Aug. 1970	The Fine Structure of the Subarachnoid Angle of a Lateral Recess
		of the Subarachnoid Space
Pope, R.S.	Dec. 1970	(Not Titled)
Crissman, R.S.	Aug. 1971	(Not Titled)
Morse, Dennis E.	Aug. 1971	The Fine Structure of the Pia Mater of the Rat
*Heltne, C.T.	Aug. 1972	(Not Titled)
McNeilis, Thomas M.	Aug. 1972	The Origin and Differentiation of the Thrombocytes of the
		Chicken (Gallus Domesticus)
*Lerfeld, Sidney C.	Aug. 1972	Early Differentiation of the Myotome in the Chick: A Study in
		Fine Structure
*Newman, Timothy L.	Aug. 1972	The Effect of Enzymes on Extracellular Connective Tissues in the
		Developing Chick Aorta
Malloy, John J.	May. 1973	Spinal Nerve Root Exits from the Subarachnoid Space in the Dog
Gloyd, Miles W.	Aug. 1973	The Linings of the Spinal Subarachnoid Space in the Dog as
		Revealed by Scanning Electron Microscopy
*Larson, Larry P.	Dec. 1973	Effect of Lithium on Structure and Function of the Rat Biliary
		System
*entered Med School after degree		

Name	Month/Year	Thesis Title
*Peine, Craig L.	Aug. 1974	A Study of the Endothelium of the Young Dog Heart by Scanning
		Electron Microscopy
*Harri, James E.	Aug. 1974	Scanning Electron Microscopy of the Blastoderm of Early Chick
		Embryos
Melander, Michael H.	Aug. 1975	Cranial Nerve Exits from the Subarachnoid Space in the Dog
*Kennedy, Christopher J.	Aug. 1975	The Effect of Continuous Long-term Hyperbaric He-O2 Exposure on
		Endocrine Function of Rats
Hunt, Curtiss D.	May. 1976	Morphology of Cartilage Canals in the Chick Proximal Tibial
		Epiphyseal Plate
Merchant, Randall E.	May. 1976	Scanning Electron Microscopy of Subarachnoid Macrophages in the
		Dog: Activation by Bacillus Calmette-Guerin (BCG)
Bader, David M.	Aug. 1976	Repair and Reorganization of Minced Cardiac Muscle in
		Notophthalmus viridescens
Bates, Christopher A.	Aug. 1976	Uterine Vascular Adaptations Providing for Embryonic Nutrition
		During Implantation in the Rat
Stagno, Paul A.	Aug. 1976	The Effects of Cytochalasin B on the Fine Structure of Organized
		Entodermal Cells of the Early Chick Embryo
Buell, Stephen J.	Aug. 1976	Some Effects of Zinc Deficiency on the Development of the
		Cerebellum and Hippocampus
Repesh, Lillian A.	Dec. 1976	Scanning Electron Microscopy of Epidermal Cell Migration in the
		Wound Healing Process of the Adult Newt
Lim-Spiker, Soo-Siang	Dec. 1976	(Not Titled)
Olson, Gregg	May. 1977	None Listed
Dravland, J. Eric	May. 1977	The Histology of the Spleen of the Bush Baby, Galago senagalensis
Persky, Bruce	Dec. 1977	A Scanning Electron Microscopic Study of the Choroid Plexus of
		Certain Laboratory Mammals
VanRybroek, John J.	Aug. 1978	An Electron Microscopic Study of the Developing Lens Vesicle in
		the Chick
*entered Med School after degree		

Name	Month/Year	Thesis Title
Kraft, Kim C.	Dec. 1979	Immunohistochemical Staining of Placental Lactogen-Like
		Proteins in the Rat
McDonnell, Timothy J.	Aug. 1980	The Response of the Atrial Myocardium to Ventricular
		Amputation Injury in the Adult Newt
Sinning, Allan R.	Aug. 1983	The Effects of Dietary Zinc Deficiency on the Development of Rod
		Photoreceptor Cells in the Rat Retina
McGee, Robert S.	Aug. 1983	A Study on Immunoglobulins in the Male Reproductive Tissues of
		the Sprague-Dawley Rat
*McCann, LaVaun M.	Dec. 1983	A Quantitative Analysis of the Sympatic Arrangements in the
		Adult Cat Cuneate Nucleus
Jackson, Jon A.	Aug. 1986	The Effects of 6-Diazo-5-OXO-L-Norleucine on the Development of
		the Otic Vesicle in the Chick Embryo: An In Vitro Study
Voss, Mildred E.	Aug. 1987	Isolation, Culture, and Partial Identification of Extracellular Matrix
		Products of Bovine Epididymal Epithelial Cells
*Block, Jeffrey A.	Dec. 1987	The In Vitro Effects of Homologous Pigment Epithelial Cell
		Conditioned Medium on Retinal Microvessel Endothelial Cells
Forsman, Allan D.	Dec. 1988	A Morphological Description of Angiogenesis in the Corpus
		Luteum of the golden Hamster, Mesocricetus auratus, as Revealed
		by Microcorrosion Casting
Lou, Yanqin	Aug. 1991	The Effect of Hypoxia on the Proliferation and Cytoskeletal
		Arrangement of Retinal Microvessel Endothelial Cells In Vitro
*Friederichs, Matthew G.	Dec. 1994	Morphological Evidence of Apoptosis During Early Structural
		Luteolysis in the Golden Hamster
*Bakken, Naomi A.	Dec. 1995	Dietary Boron Modifies the Effect of Vitamin D Nutriture on
		Energy Metabolism and Bone Morphology in the Chick
McKee, Yuri F.	Dec. 1995	Sympathetic Preganglionic Neuronal Migration and Process
		Outgrowth in the Embryonic Rat
Ressler, Michael J.	Dec. 1996	Ultrastructural and Functional Analyses of Nephropathy in the
		Diabetic BB/Wistar Rat
*entered Med School after degree		

Name	Month/Year	Thesis Title
*Hyjek, David H.	Aug. 1997	Coronary Blood Vessel Development within the Epicardium of the
		Epicardium of the Embryonic Quail Heart
*Bennett, Mike E.	Dec. 1997	A Neuroanatomical Investigation of Medial Frontal Cortical
		Projections to Spinal Cord in the Rat
*Mersch, Dawn K.	Aug. 1997	Apoptosis in Ventricular Myocytes of the Adult Newt
*Streng, Lara A.	Aug. 1998	A Biochemical Analysis of Proteoglycans Synthesized by Bovine
		Retinal Pericytes in Culture
*Reed, Kamilla L.	May, 1999	Epicardial Epithelial-Mesenchymal Transformations Support
		Coronary Vasculogenesis in the Embryonic Quail Heart
Huang, Yuan	Dec. 1999	Identification of Proteins Secreted by the Choroid During
		Recovery from Experimentally Induced Myopia in Chicks
Aadland, Sally A.	Aug. 2001	Stabilization of Gap Junctions During Plasma Membrane
		Remodeling of NRK Cells
*Bratvold, Jared M.	Dec. 2001	Morphological Analysis of Alterations in the Recovering Chick
		Choroid Following Experimentally Induced Myopia
Liu, Meifang	Dec. 2001	Identification of the Interaction Between Gravin and u-Opioid
		Receptor
*entered Med School after degree		

Name	Month/Year	Dissertation Title
Yeager, Vernon L.	Aug. 1955	(None Listed)
Pettersen, James C.	Jun. 1963	Histochemical Studies of the Spleens of Typhoid and
		Adjuvant-Treated Rats
Hillman, Dean E.	May. 1964	A Study of the Mesodermal Elements in the Developing,
		Adult and Injured Rat Brain
Skjonsby, Harold S.	Aug. 1964	Influence of Protein Diets on the Development of
		Abnormalities of the Aorta and Skeleton of Mature
		Lathyric Rats
Sether, Lowell A.	Aug. 1964	The Effect of Hypervitaminosis A on the Skeletal Lesions of
		Lathyric Rats
Ollerich, Dwayne A.	Aug. 1964	An Autoradiographic Study of Lathyrism Using Tritiated
		Thymidine
McFadden, Kenneth D.	Aug. 1964	A Histological and Histochemical Study of the Developing Rat
		Spleen: With Special Reference to the Macrophage System
Burkel, William E.	Aug. 1964	The Fine Structure of the Extrahepatic Biliary Tract
		Epithelium of Rat and Mouse
Severson, Arlen R.	Aug. 1965	A Study of the Regression of the Adductor Longus-Pectineus
		Exostosis of Lathyric and Surgically Stimulated Rats
Jacobsen, Glenn D.	Jun. 1965	Studies on the Structure and Function of Ellipsoid Sheaths of
		Dog and Cat Spleen
Shervey, Paul D.	Jan. 1966	A Morphological and Histochemical Study of the Intracellular
		Inclusion Bodies in the Intestinal Epithelium of the Prenatal
		and Postnatal Rat
Basom, Charles R.	Aug. 1968	The Fine Structure of Aortic Elastogenesis in the Chick Embryo
Snodgrass, Michael J.	Jun. 1969	Some Cytochemical Aspects of the Red Pulp Sinus Lining Cells
		of the Normal and Stimulated Rabbit Spleen
Peterson, Richard G.	Jun. 1969	Fine Structure and Permeability of Developing Blood Vessels
		in the Chicken Brain
*entered Med School after degree		

*Haller, Frederick R.	Jun. 1970	The Fine Structure of the Peripheral Nerve Root Sheath in the
		Subarachnoid Space in the Rat and Other Laboratory Animals
Carlson, Edward C.	Jun. 1970	The Effect of Hydrocortisone on Extracellular Connective
		Tissue Fibrils in the Early Chick Embryo: A Study in Fine
		Structure
Steven, William M.	Jun. 1970	Morphological and Functional Effects of Diethylstilbesterol and
		Diethylstilbesterol Diphosphate on Reticulo-endothelial Cells
		of the Rat Spleen
Frederickson, Richard G.	Aug. 1970	A Study of the Fine Structure of Perinotochordal Microfibrils
		in Normal and Enzyme-Treated Chick Embryos
Evan, Andrew P.	May. 1971	The Effect of Lithium Carbonate on the Rat Kidney: An
		Ultrastructural, Functional and Biochemical Study
Hay, Don A.	Aug. 1971	Fine Structure of Area of Fusion of Endocardial Cushions and
		Dividing Myocardial Cells of Chick Embryos Incubated Five
		and Six Days
Olson, Mark D.	May. 1973	Morphogenesis of Photoreceptors in the Chick Retina: An
		Electron Microscopic Study
Pope, Robert S.	May. 1973	(None Listed)
Morse, Dennis E.	Aug. 1973	The Growth of Unit Collagenous Fibrils in the Chick
Crissman, Robert S.	Aug. 1973	A Study of Fine Structural Changes in the Cartilage-to-Bone
		Transition Within the Developing Chick Vertebra
Fowler, Donald R.	Aug. 1974	A Study of the Dilated Splenic Lymphatic Follicular Capillaries
		and Related Vasculature of the Citellus richardsonii richardsonii
Allen, Delmas J.	Aug. 1974	Scanning Electron Microscopy of Selected Meningeal and
		Ventricular Surfaces of the Dog Brain
*Malloy, John J.	Aug. 1975	The Functional Identity of the Subarachnoid Free Cells in the
		Dog: A Study in Transmission and Scanning Electron Microscopy
*entered Med School after degree		

Litke, Larry L.	Dec. 1976	Electron Microscopy of Chick Embryos During the First 48 Hours
		of Incubation: The Ventral Surface Under Normal and
		Experimental Conditions
Merchant, Randy	Aug. 1978	(None Listed)
Bader, David M.	Aug. 1978	Autoradiographic and Electron Microscopic Studies of Minced
		Cardiac Muscle Grafts in the Adult Newt, Notophthalmus
		viridescens
Repesh, Lillian A.	May. 1979	Histochemical and Ultrastructural Studies on Migrating
		Epidermal Cells During the Wound Healing State of
		Regeneration in the Adult Newt, Notophthalmus viridescens
Lim-Spiker, Soo-Siang	May. 1979	(None Listed)
Hunt, Curtiss D.	Aug. 1979	The Effect of Dietary Vanadium on 48V Metabolism and
		Proximal Tibial Growth Plate Morphology in the Chick
Friedenbach, David J.	Aug. 1979	Quantitative Analysis of the Neuropil of Nucleus Gracilis
		and Nucleus Z
*Bates, Chris	Aug. 1979	(None Listed)
*Stagno, Paul	Aug. 1979	(None Listed)
Muckey, Beverly	Dec. 1979	Developmental Histology of the Rat Epididymis and Testis
Dravland, Jonas Eric	Aug. 1980	A Study of the Sperm-Coating Antigens of Rat Spermatozoa:
		Antigens of Epididymal, Seminar Vesicle, and Uterine Origin
Olson, Gregg E.	Aug. 1980	The Developing Chick Aorta: Fine Structural and Histochemical
		Considerations
Persky, Bruce	Aug. 1980	Stereo-Scanning Electron Microscopy of the Canine
		Subarachnoid Space After Injection of Defibrinated Chicken
		Red Blood Cells
*VanRybroek, John J.	Aug. 1980	Analysis of Junctional Complexes of the Developing Arachnoid
		Membrane in the Chick Embryo by Means of Electron Microscopy
*entered Med School after degree		

Johnson, Roger B.	Aug. 1980	Development of Transalveolar Fibers in the Mourse
		Periodontium
Dvergsten, Christopher L.	Dec. 1980	Alterations in Cerebellar Basket, Stellate and Purkinji Cell
		Development Produced by Zinc Deficiency in the Suckling Rat
		the Adult Newt, Notophthalmus viridescens
*McDonnell, Timothy J.	Aug. 1982	The Atrial Response to Ventricular and Atrial Amputation in
		the Adult Newt, Notophthalmus viridescens
Sinning, Allan R.	Aug. 1985	Surface Coat Material Associated with the Developing Otic
		Vesicle
Thorne-Tjomsland, Gro	Dec. 1986	Effects of Zinc Deficiency on Sertoli Cell Number and
		Ultrastructure: An In Vivo and In Vitro Study
*Berger, Walter J.	Dec. 1987	Basement Membrane Heterogeneity: A High Resolution SEM
		Study of Renal Basement Membrane Ultrastructure Following
		Enzyme Microdissection
*Tate, John M.	May. 1988	The Primary Cell Culture, Morphological Characterization, and
		Analysis of Proliferative Potential of Ventricular Myocytes from
		the Adult Newt, Notophthalmus viridescens
Jyring, Ronald K.	Dec. 1988	An In Vitro Analysis of Melanoma Cell Attachment to
		Isolated Glomerular Basement Membranes
Rada, Jody A.	Aug. 1989	Experimental Ultrastructural Analyses of Glomerular Basement
		Membrane Heparan Sulfate Proteoglycans Under Proteinuric
		and Nonproteinuric Conditions
*Statton, Maria K.	Dec. 1989	A Morphological Study of Paracrine Interactions in the
		Anterior Pituitary of Lactating Rats Using Immunogold
		Techniques
Jackson, Jon A.	Dec. 1989	A Quantitative Analysis of the Effects of Adenosine and
		Hypoxia on the Proliferative Capacity of Bovine Retinal
		Microvascular Pericytes In Vitro
*entered Med School after degree		

Soonpaa, Mark H.	Dec. 1991	Alteration of DNA Synthesis in the Adult Newt Ventricular
		Myocyte
Forsman, Allan D.	Dec. 1991	The Blood-Oocyte Barrier: Morphological Evidence Implicating
		the Zona Pellucida
Marion, M. Susan	Dec. 1992	Localization and Quantitation of Maillard Reaction Products in
		Bovine Anterior Lens Capsules and Descemet's Membranes by
		Immunoelectron Microscopy
Valder, Ann M.	Aug. 1994	Cellular Precursors Supporting Coronary Vessel Vasculogenesis
		in the Embryonic Quail Heart
Matz, Donald G.	Dec. 1994	Cytoskeletal and Morphological Characterization of Mitosis in
		the Cultured Adult Newt Ventricular Myocyte
*Rodacker, Mark W.	May. 1995	Spontaneous Luteolysis in the Cyclic Golden Hamster: Evidence
		for Mediation Through Inflammation and Apoptosis
Rutherford, Julie C.	May, 1998	A Comparative Immunocytochemical Analysis of the Secretory
		Profiles of Bovine Retinal Pericytes and Glomerular
		Mesangial Cells in Vitro
Perryman, Wendy C.	Aug. 1998	Temporally Regulated Gene Expression in the Embryoic Rat
		Thoracic Spinal Cord
Cameron, Craig D.	Aug. 1998	
Jeno, Susan H.N.	May, 1999	Isolation and Identification of Proteoglycans in Human
		Glenohumeral Joint Capsule
Slover, Michelle L.	Aug. 2000	Localization of Endothelial Cells and Their Precursors in the
		Embryonic Chick Heart During Coronary Vasculogenesis
		Utilizing an mRNA Specific Probe
Traiser, Nancy L.	Aug. 2001	Gap Junctional Responses to Increased Cyclic AMP Levels in a
		Mouse Mammary Tumor Cell Line
Austin, Bobbie A.	Aug. 2002	Characterization an Role of Lumican in Scleral Extracellular
		Matrix
*entered Med School after degree		

FY 1982 - 1983

Faculty Listing:

Edward. C. Carlson - Professor and Chairman
Dwayne A. Ollerich - Professor
Bruce C. Albright - Associate Professor
Madhusudan S. Joshi - Associate Professor
Donald L. Matthies - Associate Professor
Jean C. Oberpriller - Associate Professor
John O. Oberpriller - Associate Professor
Mark D. Olson - Associate Professor
Arnold W. Keck - Instructor
Timothy J. McDonnell - Instructor

Thomas R.Gest, Post-Doctoral Student working with Dr. Bruce Albright.

Happenings:

The Faculty of the Department of Anatomy met and voted to adopt a policy for implementing the Guidelines for Faculty Evaluation and Promotion on 7/29/82.

Students taught for FY 1982-83: Men - 364; Women - 699; with the breakdown as follows: Undergraduate students - 473; Medical students - 56; Graduate students - 7.

A major piece of equipment, Hitachi S-800 field emission Scanning Electron Microscope, was purchased and installed in the Ireland Research Laboratory that greatly facilitated faculty research.

The Department of Anatomy was honored at the Centennial Founders Day Banquet on February 17, 1983, when it was presented with The University Award for Excellence in Research and Creative Activity.

Guest Speakers:

Dr. Lillian Repesh, University of Minnesota - Duluth
Dr. Mary Hendrix, University of Arizona
Dr. Robert Scott, Mayo School of Medicine

FY 1983 - 1984

Faculty Listing:
Edward C. Carlson, Professor and Chairman
Dwayne A. Ollerich, Professor
Bruce C. Albright, Associate Professor
Madhusudan S. Joshi, Associate Professor
Donald L. Matthies, Associate Professor
Jean C. Oberpriller, Associate Professor
John O. Oberpriller, Associate Professor
Mark D. Olson, Associate Professor
John T. McCormack, Temporary Assistant Professor
Arnold W. Keck, Instructor
Thomas R. Gest, Post Doctoral Student with Dr. Bruce Albright

Happenings:

Students taught for FY 1983-1984 are: Men - 441, Women - 685; with the breakdown as follows: Undergraduate - 832; Medical Students - 59; Graduate Students - 7.

The Department of Anatomy hosted the INMED Summer Institute Biology class for a six week session.

An Interment Service was held in fall 1983 for the ashes of the persons who bequeathed their bodies to the UND School of Medicine Deeded Body Program, administered by the Department of Anatomy.

Dr. Jean Oberpriller developed a graduate student handbook, "A Manual for Graduate Students Regarding Policies and Expectations of the Faculty of the Department of Anatomy" that described the graduate program in the department and assisted incoming graduate students.

Two new undergraduate courses were developed: Anatomy 490, Directed Studies in Anatomy and Anatomy 498, Internship in Anatomy to involve undergraduate students in the research programs of the department. A new graduate course was developed: Anatomy 512, Ultrastructural Biology of Cells and Extracellular Matrix.

Dr. John T. McCormack was appointed Temporary Assistant Professor for Fall Semester to assist teaching Histology and Developmental Anatomy to medical and graduate students.

Estelle T. Goldstein, M.D., a neurosurgery resident, assisted in the Spring Semester with the Neuroscience course for medical students and also taught graduate students a "mini" course in Neurochemistry. **(Dr. "Greasy" was the only human being I know that proceeded to "excercise" on the dance floor of a Fargo establishment and was asked to LEAVE THE PREMISES!!!!! However, she DID transform a "hunk-o-cheese" into a brain at a Halloween party held at Jan's house)**

Dr. John O. Oberpriller received the SAMA Golden Apple Award for outstanding teacher of the year by the class of 1986.

Guest Speakers:

Dr. Margo Cohen, New Jersey Medical School

FY 1984 - 1985

Faculty Listing:

Edward C. Carlson, Professor and Chairman
Madhusudan S. Joshi, Professor
John O. Oberpriller, Professor
Dwayne A. Ollerich, Professor
Bruce C. Albright, Associate Professor
Donald L. Matthies, Associate Professor
Jean C. Oberpriller, Associate Professor
Mark D. Olson, Associate Professor
John T. McCormack, Temporary Assistant Professor
Arnold W. Keck, Instructor

Happenings:

Students taught for FY 84-85 are: Men, 391, Women, 572, with the breakdown as follows, Undergraduate Students - 702; Medical Students - 52; Graduate Students - 12.

The Department of Anatomy hosted the INMED Summer Institute Biology class for a six week session.

A multi-user Tissue Culture Laboratory was established in the Ireland Research Laboratory staffed by Mr. David Meyer.

Dr. John T. McCormack was appointed temporary Assistant Professor for Fall Semester to assist teaching Histology and Developmental Anatomy to medical and graduate students.

On September 29, 1984, the Department of Anatomy hosted the **First North Dakota/Manitoba Anatomy Picnic Day**. The day featured 10 faculty and graduate student research presentations in the morning followed by a luncheon at the UND Memorial Union, an afternoon of recreation at Turtle River State Park followed by an evening socializer which featured a slide presentation from Dr. Donald May (visiting speaker from the Tulane University School of Medicine) on his recent trips to the People's Republic of China to upgrade retina surgical techniques.

Dr. John Oberpriller was the invited symposium speaker at the Annual Meeting of the American Section of the International Society for Heart Research in Oklahoma City, Oklahoma.

Dr. Bruce Albright presented his research at the International Symposium on Development and Plasticity of the Mammalian Spinal Cord in Spoleto, Italy.

Dr. Steve Mitchell, a neurosurgery resident, assisted teaching medical and graduate students in the Neuroscience course for the Spring Semester.

Both Dr. John Oberpriller and Dr. Madhusudan Joshi were promoted to Professor of Anatomy by the President's Office. Dr. Oberpriller is a nationally recognized expert in cardiac muscle regeneration and Dr. Joshi was the first to successfully culture epididymal cells.

Dr. John T. McCormack was appointed Assistant Professor in May, 1985.

Dr. John Oberpriller was awarded the Class Portrait Award by the Class of 1987.

Guest Speakers:

Dr. Donald R. May, Tulane University School of Medicine
Dr. Thomas Nielsen, National Heart, Lund and Blood Institute
Dr. George Martin, Ohio State University
Dr. Leo E. Hollister, Stanford University
Dr. Stephen I. Rennard, University of Nebraska
Dr. Judson Sheridan, University of Minnesota - Minneapolis
Dr. James C. McKenzie, Vanderbilt University
Dr. Irene Tschismadia, Ohio University
Dr. Roger Markwald, Medical College of Wisconsin

FY 1985 - 1986

Faculty Listing:

Edward C. Carlson, Professor and Chairman
Madhusudan S. Joshi, Professor
John O. Oberpriller, Professor
Dwayne A. Ollerich, Professor
Bruce C. Albright, Associate Professor
Donald L. Matthies, Associate Professor
Jean C. Oberpriller, Associate Professor
Mark D. Olson, Associate Professor
John T. McCormack, Assistant Professor
Curtiss D. Hunt, Adjunct Assistant Professor
Arnold W. Keck, Instructor

Happenings:

Students taught for FY 85-86 are: Men, 334; Women, 600; with the breakdown as follows: Undergraduate Students - 689; Medical Students - 54; Graduate Students - 7.

The Department of Anatomy hosted the INMED Summer Institute Biology class for a six week session.

Dr. Curtiss D. Hunt was appointed Adjunct Assistant Professor to assist in teaching Histology and Developmental Anatomy.

Dr. Edward C. Carlson was an invited speaker at the International Symposium on Renal Basement Membranes in London, England. Dr. Carlson not only gave a talk but also made a poster presentation at the meetings.

The 2nd Annual Anatomy Exchange Day was hosted by the University of Manitoba in Winnipeg, Manitoba where Dr. Persaud, Chairman of Anatomy at the University of Manitoba, was presented with a "traveling reminder" of the connections between the two departments consisting of a tankard from each department separated by a clock that was built by Mr. Arnold Keck a member of the Anatomy Department at UND.

A **video system** was installed in the Histology/Neuroanatomy laboratory for maximum flexibility in video projections for medical and graduate students.

Mr. **Gordon Greene**, diener for the Anatomy Department for 11 years, was chosen by the Class of 1988 to receive the portrait award.

Guest Speakers:

Dr. John C. Swinscoe, California Primate Research Center
Dr. Billy G. Hudson, University of Kansas
Dr. Frank N. Low, Louisiana State University
Dr. Harvey E. Grotjan, Jr., University of South Dakota
Dr. Hugh C. Hensleigh, University of Minnesota - Minneapolis
Dr. Randall J. Mrsny, University of Oregon

FY 1986 - 1987

Faculty Listing:

Edward C. Carlson, Professor and Chairman
Madhusudan S. Joshi, Professor
John O. Oberpriller, Professor
Dwayne A. Ollerich, Professor
Bruce C. Albright, Associate Professor
Donald L. Matthies, Associate Professor
Jean C. Oberpriller, Associate Professor
Mark D. Olson, Associate Professor
John T. McCormack, Assistant Professor
Curtiss D. Hunt, Adjunct Assistant Professor
Arnold W. Keck, Instructor

Happenings:

Students taught for FY 86-87 are: Men, 370; Women, 527; with the breakdown as follows: Undergraduate Students - 607; Medical Students - 57; Graduate Students - 7.

The Department of Anatomy hosted the INMED Summer Institute Biology class for a five week session.

The Anatomy Departmental Tissue Culture Laboratory received a new Olympus inverted phase contrast microscope equipped with fluoresence capability. Also Room 102 has been remodeled to accommodate cell culture, electrophoresis and column chromatographic work.

Dr. Madhusudan Joshi was invited to present a poster at the Gordon Conference in Plymouth, NH.

Dr. John Swinscoe was appointed as Research Cell Biology in the Department of Anatomy.

The 3rd Annual Anatomy Exchange Day was held in Grand Forks with not only the University of Manitoba Department invited but also the University of Minnesota - Duluth Anatomy Department.

Both Mildred Voss and Maria Statton were awarded Graduate and Professional Opportunities Program (GPOP) Fellowships by the UND Graduate School. John Tate and Ron Jyring were awarded Hamre Graduate Fellowships by the Anatomy Department.

The Department of Anatomy was given a gift by Mrs. Woutat in memory of her husband, Dr. Philip Woutat, who served as Clinical Associate of Anatomy from 1951 to 1978. The gift will be used to award a medical student for outstanding achievement in Gross Anatomy and Radiology.

Dr. Bruce Albright was a Visiting Scientist to the University of Manitoba, Winnipeg, Canada and made a presentation and also carried out research experiments with Dr. Bill Anderson.

A chromatography refrigerator designed to carry out column chromatographic experiments at reduced temperatures and a stereo microscopy with custom made stand to be used for microsurgery were purchased.

The Annual Frank Low Research Day was held on 4/11/87 at the Memorial Union with departmental presentations by Dr. Edward Carlson and Dr. Donald Matthies.

Jeff Block (Anatomy Graduate Student) was awarded the A. Rodger Denison award at the ND/MN Academy of Science meeting held in Moorhead, Minnesota.

Dr. Donald Matthies was an invited speaker at the University of North Carolina.

Dr. Mark Olson was awarded the Golden Apple Award for teaching excellence by the sophomore medical students.

Guest Speakers:

Dr. Al Fivizzani, University of North Dakota
Dr. Steve Downing, University of Minnesota - Duluth
Dr. Roger Johnson, University of Manitoba
Dr. Jim Thliveris, University of Manitoba
Dr. Charlie Braekevelt, University of Manitoba
Dr. Marc DelBigio, University of Manitoba
Dr. Dale Redmer, North Dakota State University
Dr. Larry Reynolds, North Dakota State University
Dr. Andrew G. Hendrickx, University of California - Davis
Dr. Leslie Klevay, USDA Human Nutrition Laboratory
Dr. Peter Petrusz, University of North Carolina
Dr. Bruce Carlson, University of Michigan
Dr. Kevin Young, University of North Dakota
Dr. Mary Ellen Gerritsen, New York Medical College
Dr. William C. Claycomb, Louisiana State University
Dr. David Bader, Cornell University Medical College

FY 1987 - 1988

Faculty Listing:

Edward C. Carlson, Professor and Chairman
Madhusudan S. Joshi, Professor
John O. Oberpriller, Professor
Dwayne A. Ollerich, Professor
Bruce C. Albright, Associate Professor
Donald L. Matthies, Associate Professor
Jean C. Oberpriller, Associate Professor
Mark D. Olson, Associate Professor
John T. McCormack, Assistant Professor
Curtiss D. Hunt, Adjunct Assistant Professor
Arnold W. Keck, Instructor

Happenings:

Students taught for FY 87-88 are: Men, 293; Women, 490 with the breakdown as follows: Undergraduate Students - 519; Medical Students - 54; Graduate Students - 7.

The Department of Anatomy hosted the INMED Summer Institute Biology class for a five week session.

The 4th Annual Anatomy Exchange Day was held at the University of Manitoba in Winnipeg, Manitoba with more than 20 UND Department of Anatomy members attending.

Dr. Edward Carlson was appointed to head a task force to develop plans for a new Basic Science Medical Building to be placed near or associate with Medical Sciences North that would allow all departments housed in Medical Sciences South and the Primary Care Training Center to be located under one roof.

The Annual Frank Low Research day was held on April 15, 1988, in Fargo, ND, with the following Anatomy presenters: Dr. Madhu Joshi, Dr. Bruce Albright, Allan Forsman, Ron Jyring and Jody Rada (graduate students).

John Tate, Anatomy Graduate Student, was awarded the Rodger Denison Award at the ND Academy of Science meetings in Bismarck, ND for his presentation.

Drs. Edward Carlson and John Swinscoe were invited to attend the Gordon Conference on Basement Membranes in Plymouth, New Hampshire.

A backscatter device was added to the departmental scanning electron microscope that has the capability of collecting electrons and secondary electrons from the same field which will allow for qualitative analyses of SEM specimens using high resolution immunogold and immunosilver techniques.

Guest Speakers:

Dr. Donald May, Tulane University
Dr. Joseph Madri, Yale University
Dr. William Smith, Michigan State University
Dr. John Leppi, University of Minnesota - Duluth
Dr. Victor Mitashov, Koltzov Institute of Developmental Biology, Russia
Dr. Hynda Kleinman, National Institute of Dental Research
Dr. Helen Henry, University of California - Riverside
Dr. Thomas A. Borg, University of South Carolina
Dr. Helene Sage, University of Washington - Seattle
Dr. Vincent Monnier, Case Western Reserve University

FY 1988 - 1989

Faculty Listing:

Edward C. Carlson, Professor and Chairman
Madhusudan S. Joshi, Professor
John O. Oberpriller, Professor
Dwayne A. Ollerich, Professor
Bruce C. Albright, Associate Professor
Donald L. Matthies, Associate Professor
Jean C. Oberpriller, Associate Professor
Mark D. Olson, Associate Professor
John T. McCormack, Assistant Professor
Curtiss D. Hunt, Adjunct Assistant Professor
Arnold W. Keck, Instructor

Happenings:

Students taught for FY 88-89 are: Men, 319; Women, 484 with the breakdown as follows: Undergraduate Students - 537; Medical Students - 53; Graduate Students - 6.

The Anatomy Department hosted the INMED Summer Institute Biology class.

Dr. Donald Matthies contracted with Tyson & Associates of Santa Monica, CA to carry out toxicity tests using high doses of tryptophan.

Dr. Madhusudan Joshi was a visiting scientist at the Enzyme Institute at the University of Wisconsin in Madison under the supervision of Dr. Henry Lardy.

The 5th Annual North Country Anatomy Interchange Day was held in Grand Forks with the Department of Anatomy hosting the University of Manitoba Department of Anatomy faculty and students. The day consisted of morning research presentations, lunch at the Memorial Union, a ride aboard the River Queen and a cookout at the home of Dr. John T. McCormack.

Dr. John Oberpriller and Dr. Jean Oberpriller are co-editors with Dr. Alex Mauro on a **book** titled, "**The Development and Regenerative Potential of Cardiac Muscle**".

The Annual Frank Low Research Day was held on April 21, 1989 in Fargo, ND with the following Departmental members presenting: Dr. Donald Matthies, Dr. Curtiss Hunt and graduate student, Jon Jackson.

Dr. Mark Olson made a presentation at a conference sponsored by the New York Academy of Science in Arlington, Virginia.

Dr. Edward Carlson and Jan Audette attended an intensive training course on "Colloidal Gold Cytochemistry" held at the University of Montreal.

Dr. John McCormack was awarded the Student Portrait Award by the sophomore medical student at their dinner in June, 1989.

Guest Speakers:

Dr. Richard Lyttle, University of Pennsylvania
Dr. Mary Kleppel, University of Minnesota Health Center
Dr. John Hassell, University of Pittsburgh
Dr. Joseph Wells, University of Vermont
Dr. Lee Peachy, University of Pennsylvania
Dr. Jeffrey Rosenstein, Washington University Medical Center

FY 1989 - 1990

Faculty Listing:

Edward C. Carlson, Professor and Chairman
Madhusudan S. Joshi, Professor
John O. Oberpriller, Professor
Dwayne A. Ollerich, Professor
Bruce C. Albright, Associate Professor
Donald L. Matthies, Associate Professor
Jean C. Oberpriller, Associate Professor
Mark D. Olson, Associate Professor
John T. McCormack, Assistant Professor
Curtiss D. Hunt, Adjunct Assistant Professor
Arnold W. Keck, Adjunct Assistant Professor
Clarence E. Thompson, Instructor

Happenings:

Students taught for FY 89-90 are: Men, 311; Women, 469 with the breakdown as follows: Undergraduate Students - 509, Medical Students - 56, Graduate Students - 6.

Faculty changes: Mr. Arnold W. Keck resigned as Instructor of Anatomy and assumed the position of Assistant Professor in Physical Therapy but is maintaining an appointment as Adjunct Assistant Professor in Anatomy and Cell Biology. Mr. Clarence E. Thompson has been appointed Instructor of Anatomy and Cell Biology for Anatomy 204. Dr. Dwayne A. Ollerich resigned as Professor of Anatomy to assume the position of Associate Dean for Student Affairs at the University of Kansas, Kansas City, Missouri. Dr. Bruce C. Albright resigned as Associate Professor of Anatomy to assume the position of Chairman, Department of Physical Therapy at East Carolina University in Greenville, North Carolina.

The Department of Anatomy hosted the INMED Summer Institute Biology class.

Mr. Jon Jackson (Anatomy Graduate Student) presented a poster at the Gordon Research Conference held in New London, New Hampshire.

The 6th Annual UND/UM Anatomy Exchange Day was held in Winnipeg, Manitoba, Canada with numerous graduate students and faculty attending.

An Interment Service for people who had donated their bodies to the Deeded Body Program at the Department of Anatomy and Cell Biology at UNDSM was held on September 28, 1989.

Dr. Madhusudan Joshi received the Golden Apple Award for teaching excellence from the sophomore Medical Students.

Dr. Edward C. Carlson made a presentation at the Gordon Research Conference held in Plymouth, New Hampshire.

Guest Speakers:

Dr. Soo-Siang Lim, Laboratory of Molecular Biology University of Wisconsin, Madison
Dr. Donald Hay, Stephen F. Austin University, Nacagdoches, Texas
Dr. David Bolender, Medical College of Wisconsin
Dr. Allan Sinning, Medical College of Wisconsin
Dr. Andrei Borisov, Academy of Sciences, Russia

FY 1990 - 1991

Faculty Listing:

Edward C. Carlson, Professor and Chairman
Madhusudan S. Joshi, Professor
John O. Oberpriller, Professor
Donald L. Matthies, Associate Professor
Jean C. Oberpriller, Associate Professor
Mark D. Olson, Associate Professor
Garl K. Rieke, Associate Professor
John T. McCormack, Assistant Professor
Curtiss D. Hunt, Adjunct Assistant Professor
Arnold W. Keck, Adjunct Assistant Professor
Clarence E. Thompson, Instructor

Faculty Changes: Dr. Garl K. Rieke was appointed Associate Professor and the course director for Neuroscience in December 1990.

Happenings:

Students taught for FY 90-91 are: Men, 326; Women, 534 with the breakdown as follows: Undergraduate Students - 575; Medical Students - 58; Graduate Students - 7.

The Department of Anatomy and Cell Biology hosted the INMED Summer Institute of Biology class.

The 7th Annual UND/UM Anatomy Exchange Day was held in Grand Forks with scientific presentations in the morning, a luncheon held at the Royal Fork in Columbia Mall and a pool party/barbecue held at the home of Dr. Mark Olson.(This is where Randall, the one semester wiz, [the briefcase guy] dove into the water with a HOLE in his trunks that was noticed by all [ask Jan])!!!!!!!!!Guess it was NOT a very pretty sight.

The Annual Frank Low Research Day was held in Fargo, ND with presentations by the Department of Anatomy and Cell Biology graduate students and faculty as follows: Dr. Edward Carlson and Yanqin Lou; Dr. John Oberpriller and Mark Soonpaa; Dr. Garl Rieke; Dr. Donals Matthies..

Dr. Mark Olson received the Golden Apple Award from the Sophomore Medical Students for teaching excellence.

Guest Speakers:

Dr. James A. Hammarback, Worcester Foundation for Experimental Biology
Dr. Christopher L. Dvergsten, University of North Carolina at Chapel Hill
Dr. Wolf Krebs, Columbia University, New York
Dr. Gilbert S. Greenwald, University of Kansas Medical Center
Mr. Kim Kraft, Research Specialist at NDSU
Dr. Ward Casscells, Cardiology Branch, NHLBI-NIH
Dr. John Tilton, NDSU
Dr. Larry Reynolds, NDSU
Dr. Dale Redmer, NDSU
Dr. Susan Semple-Rowland, University of Florida
Dr. Kenneth G. Ruit, Washington University School of Medicine

FY 1991 - 1992

Faculty Listing:

Edward C. Carlson, Professor and Chairman
Madhusudan S. Joshi, Professor
John O. Oberpriller, Professor
Jean C. Oberpriller, Professor
Donald L. Matthies, Associate Professor
Mark D. Olson, Associate Professor
Garl K. Rieke, Associate Professor
John T. McCormack, Assistant Professor
Kenneth G. Ruit, Assistant Professor
Curtiss D. Hunt, Adjunct Assistant Professor
Arnold W. Keck, Adjunct Assistant Professor
Clarence E. Thompson, Instructor

Faculty Changes: Dr. Kenneth G. Ruit was appointed Assistant Professor in January 1992, to teach in the Neuroscience course. Dr. Jean C. Oberpriller was promoted to Full Professor in Spring Semester 1992.

Happenings:

Students taught for FY 91-92 are: Men, 363; Women, 591, with the breakdown as follows: Undergraduate Students - 703; Medical Students - 59; Graduate Students - 7.

The Department of Anatomy and Cell Biology hosted the INMED Summer Institute Biology class.

The 8th Annual UND/UM Anatomy Exchange Day was hosted by the University of Manitoba in Winnipeg with research presentations in the morning followed by lunch and an evening fest at the home of Dr. Ed Bruni.

The Annual Frank Low Research Day was held on April 12, 1991, with a presentation by Dr. Ken Ruit.

Dr. Madhusudan S. Joshi was awarded the Portrait Award by the sophomore medical students for his excellence in teaching.

Guest Speakers:

Dr. Arthur J. Weber, University of Wisconsin
Dr. Loren Field, University of Indiana
Dr. Jon A. Jackson, Vanderbilt University
Dr. Steven M. Fredman, Meharry Medical College
Ms. Donna Young, University of Manitoba

FY 1992 - 1993

Faculty Listing:

Edward C. Carlson, Professor and Chairman
Madhusudan S. Joshi, Professor
John O. Oberpriller, Professor
Jean C. Oberpriller, Professor
Donald L. Matthies, Associate Professor
Mark D. Olson, Associate Professor
Garl K. Rieke, Associate Professor
John T. McCormack, Assistant Professor
Kenneth G. Ruit, Assistant Professor
Curtiss D. Hunt, Adjunct Assistant Professor
Arnold W. Keck, Adjunct Assistant Professor
Clarence E. Thompson, Instructor

Happenings:

Students taught for FY 92-93 are: Men, 430; Women, 614; with the breakdown as follows: Undergraduate Students - 744; Medical Students - 60; Graduate Students - 6.

The Department of Anatomy and Cell Biology hosted the INMED Summer Institute Biology class.

The 9th Annual UND/UM Anatomy Exchange Day was held on September 12, 1992 and hosted by the Department of Anatomy and Cell Biology with scientific presentations in the morning followed by a luncheon at the Ray Richards Golf Course and a evening feast at the home of Dr. John and Carolyn McCormack.

An Interment Service was held on September 17, 1992, for persons who donated their bodies to the Deeded Body Program (administered by the Department of Anatomy and Cell Biology) at UNDSM.

The Annual Frank Low Research Day was held April 19, 1993, with the following presenters from the Anatomy Department: Ann Valder and Dr. Mark Olson, and Dr. John McCormack.

Dr. Ken Ruit was awarded the Golden Apple Award in June 1993 by the sophomore medical students for excellence in teaching.

Guest Speakers:

Dr. Jody A. Rada, University of Pittsburgh, Eye and Ear Institute
Dr. Dale R. Abrahamson, University of Alabama, Birmingham
Dr. Gro Thorne-Tjomsland, University of Manitoba
Dr. Irving Shapiro, University of Pennsylvania
Dr. Barbara Lukert, University of Kansas Medical Center

FY 1993 - 1994

Faculty Listing:

Edward C. Carlson, Professor and Chairman
Madhusudan S. Joshi, Professor, Emeritus (7/1/94)
John O. Oberpriller, Professor
Jean C. Oberpriller, Professor
Donald L. Matthies, Associate Professor, Retired (12/31/93)
Mark D. Olson, Associate Professor
Garl K. Rieke, Associate Professor
John T. McCormack, Assistant Professor
Kenneth G. Ruit, Assistant Professor
Curtiss D. Hunt, Adjunct Assistant Professor
Arnold W. Keck, Adjunct Assistant Professor
Clarence E. Thompson, Instructor

Faculty Changes: Dr. Donald Matthies was honored at a retirement reception on December 7, 1993 in the Harley French Library.

Happenings:

Students taught for FY 93-94 are: Men, 485; Women, 633; with the breakdown as follows: Undergraduate Students - 807, Medical Students - 64, and Graduate Students - 8.

The Anatomy Department hosted the INMED Summer Institute Biology classes.

The 10th Annual UND/UM Anatomy Exchange Day was held in Winnipeg, Manitoba on September 11, 1993, with morning scientific presentations made by the following UND Anatomy Department members: Yuri McKee, Dr. Jean Oberpriller and Dr. John McCormack, followed by a luncheon and evening happenings at the home of Dr. Jim Thliveris.

The Annual Frank Low Research Day was held on April 15, 1994 with Anatomy and Cell Biology presentations made by the following individuals: Dr. Ken Ruit and Yuri McKee, and Dr. Mark Olson and Ann Valder.

Dr. Ken Ruit was awarded the Golden Apple Award (June 1994) by the sophomore medical students for excellence in teaching for the second consecutive year.

The Department spent most of the months of May, June and almost the entire month of July packing and moving from Medical Science South into new facilities at the Edwin C. James Research Center in Medical Science North.

Guest Speakers:

Dr. F. Richard Ferraro, UND Department of Psychology
Dr. Mary Anne Hunt, Neuropsychiatric Research Institute, Fargo
Dr. Harvey Knull, Dean of the Graduate School, UND
Dr. Benet J. Pardini, University of Iowa College of Medicine
Dr. Robert E. Schmidt, Washington University School of Medicine
Dr. C. George Carlson, UND Department of Physiology
Dr. David Reinitz, UND Department of Microbiology
Dr. Samuel Galewsky, UND Department of Biology
Dr. Albert J. Fivizzani, UND Department of Biology
Dr. Kyung W. Chung, University of Oklahoma Health Sciences Center
Dr. Paul Heidger, University of Iowa
Dr. Jody A. Rada, University of Pittsburgh
Dr. Denise B. Wayne, Duke University
Dr. Robert J. Frysztak, University of Texas Medical School
Dr. Corey H. Mjaatvedt, Johns Hopkins University School of Medicine

FY 1994 - 1995

Faculty Listing:

Edward C. Carlson, Professor and Chairman
Madhusudan S. Joshi, Professor, Emeritus (7/1/94)
John O. Oberpriller, Professor
Jean C. Oberpriller, Professor
John T. McCormack, Associate Professor
Mark D. Olson, Associate Professor
Garl K. Rieke, Associate Professor
Jody A. Rada, Assistant Professor (June 1995)
Kenneth G. Ruit, Assistant Professor
Curtiss D. Hunt, Adjunct Assistant Professor
Arnold W. Keck, Adjunct Assistant Professor
Clarence E. Thompson, Instructor
Donald G. Matz, Lecturer (Spring Semester)

Faculty Changes: Dr. John T. McCormack was promoted to Associate Professor and Dr. Jody A. Rada was appointed Assistant Professor to assist teaching Gross Anatomy, also Dr. Donald Matz was appointed Lecturer for the Spring Semester to assist teaching Histology and Developmental Anatomy.

Happenings:

Students taught for FY 94-95 are: Men, 429; Women, 615, with the breakdown as follows: Undergraduate Students - 775, Medical Students - 55, Graduate Students - 7.

The Department of Anatomy and Cell Biology hosted the INMED Summer Institute Biology class.

Dr. Madhusudan S. Joshi was honored at a retirement reception held in the Harley French Library Conference Room on July 1, 1994.

The Annual 11th UND/UM Anatomy Exchange Day was hosted by the Department of Anatomy and Cell Biology with scientific presentations in the morning, a luncheon at the Westward Ho and the evening continued at the home of Dr. Garl and Judy Rieke. The following made presentations in the morning from the Department of Anatomy and Cell Biology: Dr. Curtiss Hunt, Craig Cameron, and Matt Friederichs.

The 2nd Annual Symposium on Alzheimer's Disease was held in Fargo, ND with the following presenters from Anatomy and Cell Biology: Dr. Garl Rieke and Dr. Ken Ruit.

The Annual Frank Low Research Day was held April 7, 1995 with the following presenters from the Department of Anatomy and Cell Biology: (Slide presentations) Dr. Edward Carlson, Dr. Garl Rieke, (Poster presentations) Don Matz, Drs. Jean and John Oberpriller, Yuri McKee, Kristen Townley and Dr. Ken Ruit, Wendy Perryman and Dr. Garl Rieke, Julie Nomeland, Dr. Carlson, Dr. John Swinscoe, and Dr. Carlson, Jan Audette and Dr. Epstein. Julie Nomeland's poster presentation received a 1st Place Award for Graduate Students.

Guest Speakers:

Dr. David M. Bader, Cornell University Medical Center
Dr. Timothy J. McDonnell, University of Texas M.D. Anderson Cancer Center
Dr. Kersti K. Linask, University of Medicine and Dentistry of New Jersey, Stratford
Dr. Takashi Mikawa, Cornell University Medical Center

FY 1995 - 1996

Faculty Listing:

Edward C. Carlson, Professor and Chairman
Madhusudan S. Joshi, Professor, Emeritus (7/1/94)
John O. Oberpriller, Professor
Jean C. Oberpriller, Professor
John T. McCormack, Associate Professor
Mark D. Olson, Associate Professor
Garl K. Rieke, Associate Professor
Jody A. Rada, Assistant Professor (June 1995)
Kenneth G. Ruit, Assistant Professor
Gerald S. Smyser, Adjunct Associate Professor
Curtiss D. Hunt, Adjunct Assistant Professor
Arnold W. Keck, Adjunct Assistant Professor
Clarence E. Thompson, Adjunct Assistant Professor

Happenings:

Students taught FY 95 - 96 are: Undergraduate Students - 695, Medical Students - 57, and Graduate Students - 7.

The 12th Annual Anatomy Exchange Day was held September 9, 1995 in Winnipeg, Manitoba, with the following departmental presenters: Dr. Edward Carlson and Dr. John Swinscoe; Julie Nomeland, Dr. Carlson and Dr. Swinscoe; Dr. Madhu Joshi.

An Interment Service was held on 9/21/95 for the remains of individuals who had donated their bodies to the Deeded Body Program (under the direction of the Department of Anatomy and Cell Biology) of the UNDSMHS.

The Annual Frank Low Research Day was held on 4/12/96 with the following departmental presenters: Julie Nomeland and Dr. Edward Carlson; Cheryll Perry, Virginia Achen, and Dr. Jody Rada; Dr. Garl Rieke; Drs. John Swinscoe and Edward Carlson; Kristin Townley and Dr. Ken Ruit.

On 4/12/96, the departmental conference room was dedicated to Dr. Frank N. Low, Professor Emeritus of the department. Dr. Low, who was present for the ceremony, served for 17 years at UND teaching in all four major disciplines in Anatomy including Gross Anatomy, Neuroanatomy, Histology, and Embryology. Dr. Low is a Chester Fritz Distinguished Professor.

Guest Speakers:

Dr. Kathryn G. Vogel, The University of New Mexico
Dr. Thomas T. Norton, University of Alabama, Birmingham
Dr. Jon A. Jackson, Vanderbilt University
Dr. John A. Williams, UND Department of Anthropology
Dr. Li-yuan Yu-Lee, Baylor College of Medicine
Dr. Gro Thorne-Tjomsland, University of Manitoba

FY 1996 - 1997

Faculty Listing:

Edward C. Carlson, Professor and Chairman
Madhusudan S. Joshi, Professor, Emeritus (7/1/94)
John O. Oberpriller, Professor
Jean C. Oberpriller, Professor
John T. McCormack, Associate Professor
Mark D. Olson, Associate Professor
Garl K. Rieke, Associate Professor
Jody A. Rada, Assistant Professor (June 1995)
Kenneth G. Ruit, Assistant Professor
Gerald S. Smyser, Adjunct Associate Professor
Curtiss D. Hunt, Adjunct Assistant Professor
Clarence E. Thompson, Adjunct Assistant Professor

Happenings:

Students taught for FY 96-97 are: Undergraduate Students - 690; Medical Students - 58; Graduate Students - 7.

The 13th Annual UND/UM Anatomy Interchange Day was held on 9/7/1996 in Grand Forks, ND. There was a morning of scientific presentations, a luncheon at the Memorial Union, and an evening barbecue at the home of Drs. Edward and Pam Carlson. A good time was had by all.

The Annual Frank Low Research Day was held on 4/11/97 with the following presenters from the Department of Anatomy and Cell Biology: Dr. Carlson, Jan Audette, Dr. Epstein; Wendy Perryman, Yuri McKee, Cheryll Perry, Dr. Rada and Dr. Ruit; Mike Ressler, Michelle Schroeder, Jan Audette, Dr. Vari and Dr. Carlson; Dr. Rieke and Katie Jacobson; Minto Spencer, Dr. Rada and Dr. Carlson; and two posters by Drs. Carlson and John Swinscoe.

THEN THE FLOOD HIT US, HARD AND BELOW THE BELT!!!!!!!!!!!!!!!!!!!!!!!!To the tune of 1,500,000.00!!!!!!!!!!!!!!!!!!!! The Department spent the rest of the FY ordering supplies and equipment lost in the flood and just trying to not only cope with work loss but home loss.

Guest Speakers:

Dr. Bruce M. Carlson, University of Michigan
Dr. Mark H. Soonpaa, University of Indiana
Dr. Erica M. TenBroek, University of Minnesota, St. Paul
Dr. Robert J. Morecraft, University of South Dakota
Dr. James G. McMally, Washington University
Dr. Kevin J. McCarthy, University of Alabama, Birmingham
Dr. Carl J. Terranova, Howard University

FY 1997-1998

Faculty Listing:

Edward C. Carlson, Professor and Chairman
Jean C. Oberpriller, Professor
Michael M. Atkinson, Associate Professor
John T. McCormack, Associate Professor
Mark D. Olson, Associate Professor
Garl K. Rieke, Associate Professor
Jody A. Rada, Assistant Professor
Kenneth G. Ruit, Assistant Professor
Gerald S. Smyser, Adjunct Associate Professor
Curtiss D. Hunt, Adjunct Assistant Professor
Clarence E. Thompson, Adjunct Assistant Professor

Faculty Changes: Dr. Michael Atkinson joined the department in October, 1997, as an Associate Professor.

Happenings:

Students for FY 97-98 are: Undergraduate Students - 352; Graduate Students - 8; and Medical Students - 58.

Anatomy Day with the University of Manitoba was postponed until fall of 1998 due to the ongoing flood recovery process.

The 18th Frank Low Research Day was held on April 3, 1998, with 8 presentations by the department.

On June 30, 1998, after 30 years of service, Dr. Jean C. Oberpriller retired with a reception in the Vennes Atrium and also a dinner at the Ramada Inn.

Guest Speakers:

Dr. Mark P. Mattson, University of Kentucky Medical Center
Dr. Fred Anapol, University of Wisconsin - Milwaukee
Dr. Jinq-May Chen, BBSRC Barbraham Institute, Cambridge, United Kingdom
Dr. Earl W. Godfrey, The Medical College of Wisconsin
Dr. Patrick A. Carr, Wright State University
Dr. David Wan-Cheng Li, Columbia University
Dr. Lori E. Kotch, Johns Hopkins Medical Institute
Dr. Timothy J. Hinterberger, University of Alaska - Anchorage
Dr. Bryon D. Grove, Louisiana State University Medical Center
Dr. Jon A. Jackson, Mullaly Communications
Dr. Thomas H. Rosenquist, University of Nebraska School of Medicine

FY 1998-1999

Faculty Listing:

Edward C. Carlson, Professor and Chairman
Michael M. Atkinson, Associate Professor
John T. McCormack, Associate Professor
Mark D. Olson, Associate Professor
Garl K. Rieke, Associate Professor
Jody A. Rada, Associate Professor
Kenneth G. Ruit, Associate Professor
Patrick A. Carr, Assistant Professor
Bryon D. Grove, Assistant Professor
Jon A. Jackson, Assistant Professor
Gerald S. Smyser, Adjunct Associate Professor
Curtiss D. Hunt, Adjunct Assistant Professor
Clarence E. Thompson, Adjunct Assistant Professor

Faculty Changes: Dr. Jody Rada and Dr. Ken Ruit were promoted to Associate Professor effective 7/1/1998. Also, added to the faculty roster were: Dr. Patrick Carr, Dr. Bryon Grove, and Dr. Jon Jackson.

Happenings:

Students taught in FY 98-99 are: Undergraduate Students - 582; Graduate Students - 9; Medical Students (est.) 58 (due to new curriculum Problem Based Learning).

On September 12, 1998, the 14th Annual University of Manitoba/UND Anatomy Interchange Day was held at the University of Manitoba with scientific sessions in the morning followed by a luncheon and evening activities at the home of Ed Bruni.

On April 9, 1999, the 19th Annual Frank Low Research Day was held in the Vennes Atrium with six poster presentations and one oral presentation by members of the Department of Anatomy and Cell Biology.

NOTE: Do NOT know what to say about the curriculum change.

Guest Speakers:

Dr. Wayne Vogl, University of British Columbia
Dr. Brent Fedirchuk, University of Manitoba, Winnipeg
Dr. John R. Hassell, Director of Research, Shriner's Hospital for Children (Burroughs Wellcome Visiting Lecturer)
Dr. James Cardelli, Louisiana State University

FY 1999-2000

Faculty Listing:

Edward C. Carlson, Professor and Chairman
Michael M. Atkinson, Associate Professor
John T. McCormack, Associate Professor
Mark D. Olson, Associate Professor (Retired, 8/27/99)
Garl K. Rieke, Associate Professor
Jody A. Rada, Associate Professor
Kenneth G. Ruit, Associate Professor
Patrick A. Carr, Assistant Professor
Jane R. Dunlevy, Assistant Professor
Bryon D. Grove, Assistant Professor
Jon A. Jackson, Assistant Professor
Gerald S. Smyser, Adjunct Associate Professor
Curtiss D. Hunt, Adjunct Assistant Professor
Clarence E. Thompson, Adjunct Assistant Professor

Faculty Changes: Dr. Mark Olson retired on 8/27/99 after 22 years of service. Dr. Jane R. Dunlevy joined the faculty on March 1, 2000.

Happenings:

With the new problem based learning curriculum, the following served as not only facilitators but also as Block Directors: Dr. McCormack (Block 3) and Dr. Ruit (Block 1).

Students taught for FY 99-00 are: Undergraduate Students - 653; Graduate Students - 9; Medical Students (est.) 58.

On September 11, 1999, the 15th Annual University of Manitoba/UND Anatomy Interchange Day was held in Grand Forks. There were scientific presentations in the morning followed by a luncheon in the Vennes Atrium and a barbeque at the home of Dr. and Mrs. Atkinson.

The Imaging Center received a new Olympus Flouview III laser scanning confocal microscope to go along with an upright and inverted light microscope equipped for digital photomicrography.

On April 5, 2000, the 20th Annual Frank Low Research Day was held with six presentations made by the department.

On May 19-21, 2000, ten presentations were made by departmental members at the Basic Sciences Retreat in Walhalla.

Guest Speakers:

Dr. James Thliveris, University of Manitoba, Winnipeg
Dr. Al Candia, Stanford University
Dr. Animesh Sahai, University of Manitoba, Winnipeg
Dr. David Zealear, Vanderbilt University
Dr. Ronen Roubenoff, Tufts University

FY 2000-2001

Faculty Listing:

Edward C. Carlson, Professor and Chairman
Michael M. Atkinson, Associate Professor
John T. McCormack, Associate Professor
Garl K. Rieke, Associate Professor
Jody A. Rada, Associate Professor
Kenneth G. Ruit, Associate Professor
Patrick A. Carr, Assistant Professor
Jane R. Dunlevy, Assistant Professor
Bryon D. Grove, Assistant Professor
Jon A. Jackson, Assistant Professor
Gerald S. Smyser, Adjunct Associate Professor
Curtiss D. Hunt, Adjunct Assistant Professor
Clarence E. Thompson, Adjunct Assistant Professor

Staff Members, Positions, Appointment Dates:

Virginia Achen, Med Lab Tech I, 10/1995
Jan Audette, Med Lab Tech II, 11/1979
Julie Horn, Adm Sec, 9/1980
Denelle Kees, Manager, Deeded Body Program, 7/1999
Donna Laturnus, LM/EM Tech (Confocal Imaging Center), 3/2000
Annette Rieder, Adm Clerk, 10/1998
L. Kim Young, Med Lab Tech I, 1/1991

Happenings:

Students taught for FY 00-01 are: Undergraduate Students - 722; Graduate Students - 11; Medical Students (est.) - 58.

On September 9, 2000, the 16th Annual University of Manitoba/UND Anatomy Interchange Day was held in Winnipeg with scientific presentations in the morning, a luncheon and the evening barbeque at the home of Dr. and Mrs. Jim Thliveris.

The departmental 6th Annual Graduate Program Retreat was held on October 17, 2000.

On April 19, 2001, the 21st Annual Frank Low Research Day was held with nine presentations made by members of the department.

On May 23, 2001, Dr. Edward Carlson was awarded a Melvin Jones Fellowship by the Lions Clubs International Foundation. The award was presented by UND President and Mrs. Charles Kupchella.

Guest Speakers:

Dr. Susan Schefchyk, University of Manitoba, Canada
Dr. John McNulty, Loyola University
Dr. Chia-Yang Liu, University of Cincinnati
Dr. Peter Klein, University of Pennsylvania