


1980

UA66/8/3 Annual Report

WKU Geography & Geology

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WESTERN KENTUCKY UNIVERSITY

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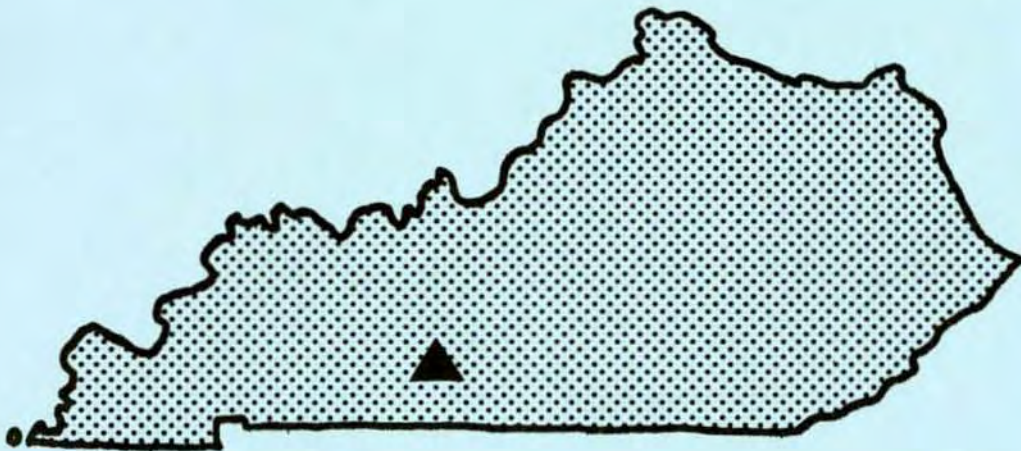
DEPARTMENT OF

GEOGRAPHY AND GEOLOGY



Annual Report

1979-80



WESTERN KENTUCKY UNIVERSITY

Bowling Green, Kentucky 42101

DEPARTMENT
of
GEOGRAPHY AND GEOLOGY

ANNUAL REPORT

1979-1980

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January 1981

ACKNOWLEDGEMENTS

This issue is dedicated to Mr. Willard Cockrill who devoted so many years to the Department and his discipline. I will always appreciate Willard's continued trust and support during my tenure. Special thanks to Dr. Ronald Dilamarter for his editorial work and for bearing part of the burden of producing the report. Finally, to Mrs. Betsy Lowrey my gratitude for setting a tone of friendliness and efficiency matched by few administrative units on this campus.

Wayne L. Hoffman



WESTERN KENTUCKY UNIVERSITY

BOWLING GREEN, KENTUCKY 42101

Department of Geography and Geology

January 19, 1981

Dear Reader:

This is the third of a continuing series of Department of Geography and Geology Annual Reports. The purpose of the series is to provide the administration with an assessment of our current status in instruction, research and public service. Moreover, the report provides an exchange of information regarding alumni, student, faculty, and the geography and geology programs.

The department was saddened by the retirement of two outstanding faculty during the past year. After long and distinguished service, Mr. Willard Cockrill has retired to part-time teaching and occasional weather readings. Dr. James Taylor also retired after more than a decade of service. The department welcomes their replacements - Dr. Conrad T. Moore, Ph.D. from U.C.L.A. and Dr. L. Michael Trapasso, Ph.D. from Indiana State University.

The Geography and Geology faculty continued their commitment to excellence in teaching, applied research, and public service activities during the 1979-80 academic year. For the second straight year, Al Petersen was nominated and was Ogden College representative for the Outstanding Teaching Award. Jim Bingham was the departmental nominee for the Faculty Excellence Award.

Faculty in the department published eighteen journal articles, monographs, or reports during the past year. Nick Crawford's efforts produced the majority of these studies. Reza Ahsan, Jim Bingham, Ron Dilamarter, Noland Fields, Wayne Hoffman, Al Petersen, and Ron Seeger also contributed in this area. Twelve professional papers were presented to state and national organizations.

Reza Ahsan, Glen Conner, Nick Crawford, Jim Davis, Wayne Hoffman, Mark Lowry, and Ron Seeger participated in this effort.

In other areas, the department was successful in officially creating a Center for Cave and Karst Studies. University and other funding has been attained to launch research and public service efforts pertaining to the physical environment of our region. Dr. Crawford is to be commended for his efforts and dedication to the Center's creation. Glen Conner continues as director of the Kentucky Climate Center and as our computer resource person. Glen serves as the departmental representative on the college CAUSE committee. Through his efforts the department has received a micro computer and related equipment.

The establishment of a Summer at Mammoth Cave academic program was a highlight of our program development efforts during the past year. Under the direction of Nick Crawford, the program attracted leading cave and karst authorities from throughout North America. Student response was excellent and we envision an expanded program for the coming year.

Yet another highlight of the year was the department's participation in the annual meeting of the Association of American Geographers held in Louisville. Several of the faculty served on the Local Arrangements Committee or in other capacities. The success of the meeting attests to the ability and work of these individuals.

The department looks to the coming year with confidence and optimism. We intend to redouble our efforts to attract new majors and minors into our programs. In a period of limited resources we intend to do more with less.

We invite you to visit us and see the activity of this dynamic area. Any suggestions you may have to improve the report would be appreciated.

Sincerely,

Wayne S. Hoffman
Wayne S. Hoffman, Chairman
Department of Geography and Geology

CENTER FOR CAVE AND KARST STUDIES

The Department was gratified by the recent administrative decision to create and modestly fund the Center for Cave and Karst Studies. For our records, Dr. Nicholas Crawford has written a report detailing the objectives and recent accomplishments of this area.

* * * * *

The Department of Geography and Geology at Western Kentucky University has always recognized the significance of being located in the world's most famous karst area, the need for studying karst problems, and its potential for becoming a recognized center for cave and karst studies. The momentum leading to the establishment of a Center for Cave and Karst Studies began in the spring of 1976 when the Department received considerable recognition by hosting the International Symposium on Hydrologic Problems in Karst Regions.

The Center was established in the Department during the 1978-79 academic year, but did not receive a budget and official recognition until the 1979-80 academic year. The following are the objectives of the Center for Cave and Karst Studies:

1. Promote research on all aspects of cave and karst studies, with an emphasis upon solving environmental problems associated with karst terrain.
2. Provide educational programs concerning cave and karst studies:
a) undergraduate and graduate instruction, b) cooperative education program with Mammoth Cave National Park, c) sponsor seminars and scientific meetings.
3. Provide an effective center for compilation and preservation of scientific data concerning cave and karst studies.
4. Publish research reports entitled: "Cave and Karst Studies Series" and "Report of Investigations."

The Center achieved the following accomplishments during the 1979-80 academic year.

1. Publications. The Center has published four research publications, and has four more ready for typing and printing.
2. Carlsbad Expedition. Dr. Crawford received a Faculty Development Committee Grant to study caves and karst of the Guadalupe Mountains of New Mexico, taking ten students with him on a sixteen-day expedition.
3. Summer University at Mammoth Cave. This program is described elsewhere in this report.
4. Consultation. On numerous occasions the Center has provided free consultation to homeowners concerning cave and karst problems such as flooding and sinkhole collapse.
5. Research. The Center has been involved in several community service oriented research projects.
 - a) Glendale Stormwater Management Project. This project involved setting up and monitoring four stream gauges and one rain gauge in order to investigate karst flooding problems. The Center received \$1200 for this research.
 - b) Investigation of stormwater drainage wells in the Bowling Green area. This inventory of over 300 "dry wells" is ready to be typed and presented to the city.
 - c) Investigation of karst flooding problems at Hinton Sub-division, Rockfield.

In addition to faculty research conducted by Drs. Crawford, Dilamarter, and Quinlan, five graduate students are presently involved with M.S. theses dealing with cave and karst studies. They are:

- James Cabbage - Hydrology of the Sinking Creek System, Logan County, Kentucky.
Advisor: Dr. Dilamarter
- Nancy Tucker - Pollution of Karst Aquifers by Agricultural Landuse.
Advisor: Dr. Crawford
- James Goodbar - Cave Management: Caves as Underground Wilderness.
Advisor: Dr. C. Moore
- Donald Rice - Pollution of Karst Aquifers by Urban Stormwater Runoff.
Advisor: Dr. Crawford
- Gregory Powell - Karst Hydrology in South Central Kentucky.
Advisor: Dr. Crawford

6. Attracted Students. The Center for Cave and Karst Studies has been successful in attracting graduate and undergraduate students to Western. Five graduate and six undergraduate students are currently enrolled at Western primarily because of the Center. They are from New Mexico, Texas, Louisiana, Pennsylvania, North Carolina, Tennessee, and Kentucky. The Center is presently corresponding with prospective students from California, Nevada, Missouri, New York, and Virginia.

The Center for Cave and Karst Studies is off to a good beginning. It is anticipated that the Center's activity will increase significantly in the coming years bringing students, funds, and recognition to the Department and Western Kentucky University.

FACULTY

- S. Reza Ahsan, Ph.D. (Florida), Professor. Cartography, Air Photo, South Asia.
- James M. Bingham, Ph.D. coursework (Indiana State), Assistant Professor. Economic, Location Theory, Planning.
- D. Glen Conner, M.S. (Western Kentucky University), Assistant Professor. Meteorology, State Climatologist.
- Nicholas C. Crawford, Ph.D. (Clark), Associate Professor. Geomorphology, Hydrology.
- James L. Davis, Ph.D. (Northwestern), Professor. Urban, Transportation, North America.
- Ronald R. Dilamarter, Ph.D. (Iowa), Professor. Geomorphology, Soils, Hydrology.
- Noland E. Fields, Jr., Ph.D. (Louisiana State), Professor. Environmental Geology, Sedimentary Geology, Paleontology.
- Edmund E. Hegen, Ph.D. (Florida), Professor. Resources and Conservation, Cultural, Field Methods, Latin America.
- Wayne L. Hoffman, Ph.D. (Florida), Head, Professor. Urban, Economic, Planning.
- Mark Lowry II, Ph.D. (Syracuse), Professor. Urban, Social, Planning.
- Jack D. McGregor, Ph.D. (Illinois), Professor. Mineralogy, Petrology, Petroleum Geology.
- Conrad T. Moore, Ph.D. (U.C.L.A.), Associate Professor. Resource Management, Biogeography, Environmental Perception.
- Tyrel G. Moore, Ph.D. Candidate (Tennessee), Instructor. Planning, Historical, Cultural.
- Albert J. Petersen, Jr., Ph.D. (Louisiana State), Professor. Cultural, Rural Settlements, the Great Plains.
- Claude E. Pickard, Ph.D. (Nebraska), Professor. Economic, Settlement Patterns, North America.
- James Quinlan, Ph.D. (Texas), Adjunct Professor. Hydrogeology.
- C. Ronald Seeger, Ph.D. (Pittsburgh), Professor. Planetology, Lunar Geology, Structural Geology, Geophysics.
- L. Michael Trapasso, Ph.D. (Indiana State), Assistant Professor. Physical Geography, Climatology, Geomorphology, Remote Sensing.

GRAUDATE STUDENTS, FALL - 1980

Kashi Banifatami, Western Kentucky University
John W. Borders, Western Kentucky University
David Bosse, SUNY at Oneonta
Alice Faye Brooks, Austin Peay State University
Billy E. Cooper, Western Kentucky University
James C. Cabbage, Western Kentucky University
James R. Goodbar, Texas A&M
Davood Goldassteh, Western Kentucky University
Y. Y. Hour, Central Police College, Republic of China
Mohammad Reza Judalizadeh, Tehran College of Insurance
Ghodratollar Karimian, Morehead State University
Gary Wayne Larimore, Western Kentucky University
Ali M. Mahramfar, Golan College of Management, Kerman, Iran
Napoleon Momodu, Western Kentucky University
Gregory Powell, Western Kentucky University
Donald Rice, Allegheny College
Ahmad A. Shirizi, Western Kentucky University
Sherree L. Tipton, Western Kentucky University
Kenneth T. Trinkler, College of the Ozarks
Nancy Tucker, Western Kentucky University

MASTERS DEGREES AWARDED - 1979-80

Master of Science

Kenneth H. Beeler

Alan L. Little

Jeffrey R. Ewell - Thesis Title. "School District Performance in Erie County and Buffalo, New York: The Socio-Spatial Dimensions of Educational Quality."

Master of Public Service (City and Regional Planning)

Moosavi S. Ghasemi

William L. Scott

Wade H. Whitley

Master of Arts in Education (Geography Minor)

Louis L. Carter

Dale M. Houchin

Donald A. Sprowles

DEPARTMENT GRADUATES
1979-1980

Geography Majors

Timothy Asher
Dennis Bond
Robert Bueker
John Carmichael
Charlotte Cook
Teresa Craig
Carl Dalton
John Hale
Patrick Haugh
Jerry Johnson
Timothy Kelly
Darrell Lancaster
Terry Maples
Karen Marcroft
Diane Raef
Sherree Tipton
Kimberly Urbanek
Terry Wease

Geology Majors

Joseph Cash
Monty Hancock
Tracy King
James Noon
Carol Norton
Sherrill Powell
Valerie Timmons

Earth Science Minors

Cheryl Anderson
Kimberly Urbanek

Geography Minors

Gregory Brown
Marjorie Haskell
Philip Holland
Michael Marlow
Jeffrey McKinley
James Noon
Carol Norton
Michael Omotosho
Sherrill Powell
Timothy Sears
Timothy Smith
Gary Wheat

Geology Minors

John Carmichael
Tommy Cocanougher
Dennis Rouse

Meteorological Tech - Associate Degree Majors

Jeffrey Morris
Donald Schroering
Kimberly Urbanek

Cartographic and Mapping Techniques - Associate Degree Majors

Russell Causey

City and Regional Planning Option
Administrative Services Area of
Concentration

Teresa Craig
Timothy Kelly
Valerie Van Eaton

The Department takes particular pride in the many outstanding students who have elected to major in our various disciplines. Below is a listing of the outstanding senior awards in Geography and in Geology.

OUTSTANDING SENIOR AWARD IN GEOGRAPHY - 1979-1980

- 1974 - Frederick H. Mader
- 1975 - Fred W. Westbrook
- 1976 - No award given
- 1977 - Gordon D. Dunbar
- 1978 - John H. Mathews
and
Robbie L. Sarles
- 1979 - John K. Carmichael
- 1980 - Timothy E. Kelly

OUTSTANDING SENIOR AWARD IN GEOLOGY - 1974-1980

- 1974 - Paul D. Anderson
- 1975 - Gregory W. Theirl
- 1976 - No award given
- 1977 - John R. Day
- 1978 - Joseph M. Hayden
- 1979 - No award given
- 1980 - Robert L. Dyer
and
Joseph T. Cash

UNDERGRADUATE ENROLLMENT DATA

Program Enrollment

Program enrollment within the Department of Geography and Geology continued its inexorable surge upward (Table 1). Comparing the past three year period, Spring 1978 data indicates 135 majors and minors or students seeking associate degrees concentrating in the various departmental programs. Spring 1980 data shows an enrollment of 216. This is an absolute increase of 81 students and a percentage increase of 60% (Figure 1).

TABLE 1
Historical Perspective

	Fall '77	Spr '78	Fall '78	Spr '79	Fall '79	Spr '80
Earth Science---Major	3	1	1	2	2	1
Geography---Major	31	37	43	55	52	75
Geology---Major	31	28	35	43	49	49
Geophysics---Major	1	2	4	4	4	4
Hydrology---Area	0	0	2	1	2	2
Earth Science---Minor	3	2	1	2	1	1
Geography---Minor	24	20	19	29	30	35
Geology--Minor	6	11	12	16	13	16
Cartographic & Mapping Technology--- Associate Degree	5	4	5	5	5	7
Meteorological Technology--- Associate Degree	<u>34</u>	<u>30</u>	<u>27</u>	<u>26</u>	<u>23</u>	<u>26</u>
TOTAL	138	135	149	183	181	216

In the 1978-1979 Annual Report a 25% increase in geography and in geology majors was projected for the coming year. Continued outstanding employment opportunities, individual faculty dedication to their chosen disciplines, and intensified departmental efforts to publicize the various programs available were expected to attract students in significant numbers. We were not disappointed in our prognostications.

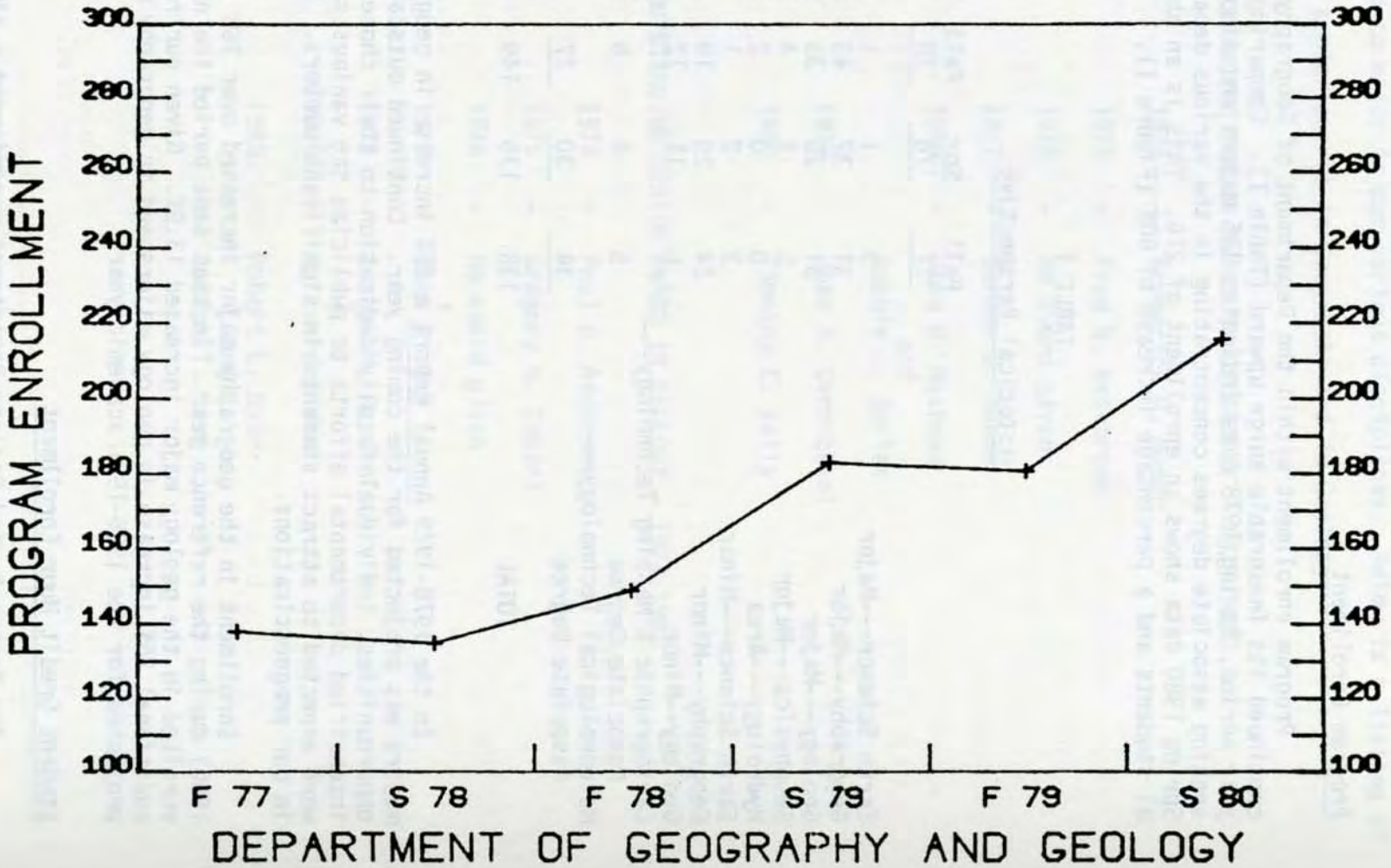
Enrollment in the geography major increased over 36% (Spring 1979 - Spring 1980) during the reference year. In that same period the number of students enrolled in the geology major increased 13.9%. Given our recent success an additional 25% increase in geology majors and in geography majors is confidently projected for the 1980-1981 academic year.

Student Credit Hour Enrollment

The Geography and Geology Department experienced a significant enrollment increase during the 1979-80 year (Table 2). Indeed, the Spring 1980 student credit hour enrollment (SCH) of 4864 hours was one of the highest recorded in the 1970's.

FIGURE 1

UNDERGRADUATE PROGRAM ENROLLMENT 1977-1980



Comparing the 1978-79 academic year (8142 SCH) and the 1979-80 academic year (9357 SCH) a 14.9% increase in credit hours is noted. An additional factor to be considered in this increase is that the majority of the increased hours are being derived from upper level and major and minor oriented courses. The dependence of the department on general education, while still important, is on the wane. With the increase in student credit hours, this department enjoyed a student-faculty ratio of 21.7 compared to a university wide average of 16.3 for the Spring Semester 1980.

TABLE 2

Historical Perspective

	<u>Fall</u> <u>'77</u>	<u>Spr</u> <u>'78</u>	<u>Fall</u> <u>'78</u>	<u>Spr</u> <u>'79</u>	<u>Fall</u> <u>'79</u>	<u>Spr</u> <u>'80</u>
Geography	3633	3279	3141	3401	3735	3896
Geology	<u>890</u>	<u>929</u>	<u>741</u>	<u>859</u>	<u>758</u>	<u>968</u>
TOTAL	4523	4208	3882	4260	4493	4864

PROGRAM DEVELOPMENT

New Programs

The proposal for the establishment of the Master of Science degree in Geology continues to experience difficulty. The recent budget short fall has the university reevaluating costs and the need of not only new, but present programs. We are optimistic, however, that this review will strengthen our position and that the proposal will soon be transmitted to the Council on Higher Education.

During the past year the Department, through its Center for Cave and Karst Studies, and in cooperation with Mammoth Cave National Park personnel, also established a summer program specializing in cave and karst landscapes. With the aid of a faculty research unit grant, Dr. Nick Crawford developed and directed our effort. Taught entirely at Mammoth Cave National Park, courses were created stressing onsite investigation and research at this world famous area. Five internationally recognized speleologists were employed to teach the courses. The instructors and their classes were: Dr. Derek Ford, Karst Geomorphology; Professor Roger Brucker, Speleology; Dr. Thomas Barr, Jr., Cave Ecology; Dr. James Quinlan, Karst Hydrology; and Dr. Arthur Palmer, Karst Geology.

By all standards, the first year of this program was an unqualified success. Some eighty-six students were attracted to the courses from the United States and Canada. Student comments were unanimous in their praise and urged continuation of our efforts. Toward that end six courses are planned for the coming year.

Course Developments

New Courses (1979-80)

Geography 404 & 404G. Computer Cartography

Geography 488 & 488G. Rural Planning.

Changes in Programs

Minimum student entrance requirements for the Master of Science in Geography and the Master of Public Service (City and Regional Planning Option) Degree were increased. Requirements for the two cited degrees are: 1) overall grade point average of 2.8 or above, 2) or grade point of 2.8 or above in last sixty hours, 3) or a GRE score of 800 or above.

A program change in the course requirements leading to the graduate planning degree was also initiated. Planning Practicum (Geography 595) which had been required was made optional. In lieu of the Practicum, a student may elect to take six hours of coursework.

The Hydrology Program remains under review. A decision will soon be made to either terminate the program or offer to the appropriate curriculum committees significant program revision.

VISITORS TO THE DEPARTMENT

Mr. George Lumley, Defense Mapping Agency, Louisville, Kentucky.

Dr. Richard Stearns, Department of Geology, Vanderbilt University, Nashville, Tennessee.

The remainder of the annual report documents the involvement of the faculty in various professional activities outside the classroom, beginning with last year's faculty publications and ending with this year's research activities.

PUBLICATIONS

- Ahsan, S. Reza, "Sugar Cane and Indentured Labor in the West Indies," Clyde Kohn, (ed), Latin America, National Council for Geographic Education. (Forthcoming).
- Bingham, James M., (co-author), "Nashville to Louisville," Ronald Marionneaux (ed), AAG 1980 Corridors to Louisville, Eastern Kentucky University, 1980, pp. 64-70.
- Conner, Glen, Wet and Dry Day Probabilities in Kentucky, Publication Number 23, Kentucky Climate Center, Western Kentucky University, Bowling Green, Kentucky, 1980, 4 pp.
- Crawford, Nicholas, Karst Hydrogeology of the Cumberland Plateau Escarpment in the Lost Creek Cove and Grassy Cove Areas of Tennessee, Safford Centennial Society Field Trip Guidebook, 1979, 49 pp.
- Crawford, Nicholas, The Karst Hydrogeology of the Cumberland Plateau Escarpment of Tennessee, Part I: Subterranean Stream Invasion, Conduit Cavern Development, and Slope Retreat in the Lost Creek Cove Area, White County, Tennessee, Cave and Karst Studies Series Number 1, Center for Cave and Karst Studies, Western Kentucky University, Bowling Green, Kentucky, 1979, 75 pp.
- Crawford, Nicholas, The Karst Hydrogeology of the Cumberland Plateau Escarpment of Tennessee, Part II: Karst Valley Development and the Headward Advance of the Sequatchie Valley in the Grassy Cove Area, Cumberland County, Tennessee, Cave and Karst Studies Series Number 2, Center for Cave and Karst Studies, Western Kentucky University, Bowling Green, Kentucky, 1979, 50 pp.
- Crawford, Nicholas, The Karst Hydrogeology of the Cumberland Plateau Escarpment of Tennessee, Part III: Karst Valley Development in the Lost Cove Area, Franklin County, Tennessee, Cave and Karst Studies Series Number 3, Center for Cave and Karst Studies, Western Kentucky University, Bowling Green, Kentucky, 1980. 21 pp.
- Crawford, Nicholas, The Karst Hydrogeology of the Cumberland Plateau Escarpment of Tennessee, Part IV: Erosional Processes Associated with Subterranean Stream Invasion, Conduit Cavern Development and Slope Retreat, Cave and Karst Studies Series Number 4, Center for Cave and Karst Studies, Western Kentucky University, Bowling Green, Kentucky, 1980, 160 pp.
- Crawford, Nicholas and J.K. Carmichael, The Sinking Creek Drainage System, Simpson County, Kentucky, Report of Investigations Number 1, Center for Cave and Karst Studies, Western Kentucky University, Bowling Green, Kentucky. (Forthcoming).

- Crawford, Nicholas and K. Beeler, The Lost River Drainage System, Warren County, Kentucky, Report of Investigations Number 2, Center for Cave and Karst Studies, Western Kentucky University, Bowling Green, Kentucky. (Forthcoming).
- Crawford, Nicholas, "Karst Geomorphology," Speleology Workshop Manual, Southwest Missouri State University, 1980, pp. 29-52.
- Dilamarter, Ronald R., (co-editor), Field Trip Guide, 1980, Association of American Geographers, 1980, 96 pp.
- Dilamarter, Ronald R., (co-author), "Nashville to Louisville," Ronald Marionneaux (ed), AAG 1980 Corridors to Louisville, Eastern Kentucky University, 1980, pp. 64-70.
- Fields, Noland E., Preliminary Geological Evaluations of Landfill Sites: Taylor and Russell Counties, Kentucky, Lake Cumberland Area Development District, 1980, 22 pp.
- Hoffman, Wayne L., (co-editor), Field Trip Guide, 1980, Association of American Geographers, 1980, 96 pp.
- Petersen, Albert J., "The German-Russian House in Kansas: A Study in Persistence of Form," Jan H. Brunvard (ed), Readings in American Folklore, New York: Norton, 1979, pp. 374-386.
- Petersen, Albert J., "Western Kentucky Coal Field," in Field Trip Guide, 1980, Association of American Geographers, 1980, pp. 53-64.
- Seeger, C. Ronald, "Geological Content of the Skylab Lunar Multispectral Scanner Data," Proceedings of the Lunar Highlands Crust Conference. (Forthcoming).

PAPERS PRESENTED

- Ahsan, S. Reza, "Sugar Cane and the Indenture System in the West Indies," National Council for Geographic Education, Mexico City, Mexico, 1979.
- Conner, Glen, "The Kentucky Climate Program," Association of American State Climatologists, Asheville, North Carolina, 1979.
- Crawford, Nicholas, "Karst Hydrogeology of the Cumberland Plateau Escarpment in the Lost Creek Cove and Grassy Cove Area of Tennessee, Safford Centennial Society Field Trip Guidebook, 1979.
- Crawford, Nicholas, "Sinkholes: Management and Protection," Seminar on Water Systems and Waste Water Disposal in Rural Karst Areas, Barren River Area Development District, Bowling Green, Kentucky, 1980.
- Crawford, Nicholas, "Karst Geomorphology: Landscape Evolution in Areas Where Carbonate Rock is Overlain by Clastic Caprock," Speleology Workshop, Southwest Missouri State University, 1980.
- Crawford, Nicholas, "Subterranean Stream Invasion, Conduit Cavern Development and the Growth of Karst Valleys in the Grassy Cove Area of Tennessee," Association of American Geographers, Louisville, Kentucky, 1980.
- Crawford, Nicholas, "Karst Flooding Problems in Urban Areas," Symposium on Water Resources in Kentucky, Lexington, Kentucky, 1980.
- Davis, James L., "Carpooling in a Small City: A Planners Dilemma," Kentucky Academy of Science, Northern Kentucky University, 1979.
- Hoffman, Wayne L., "Carpooling in a Small City: A Planners Dilemma," Kentucky Academy of Science, Northern Kentucky University, 1979.
- Hoffman, Wayne L., "Where Do We Go From Here?," Seminar on Water Systems and Waste Water Disposal in Rural Karst Areas, Barren River Area Development District, Bowling Green, Kentucky, 1980.
- Lowry, Mark II. "Sociological Profile and Attitudinal Analysis of 100th Division Drill Sergeants," Kentucky Academy of Science, Northern Kentucky University, 1979.
- Seeger, C. Ronald, "Geological Content of the Skylab S-192 Multispectral Scanner Data," Conference on the Lunar Highlands Crust, Houston, Texas, 1979.

PROFESSIONAL WORKSHOPS ATTENDED

- Ahsan, S. Reza - Western Kentucky University Grant Conference, 1979.
- Bingham, James M. - Legislative Research Council Workshop, Bowling Green, Kentucky, 1979.
- Land Use Issues on Non Metropolitan America, College Park, Maryland, 1980.
- Conner, D. Glen - Techniques and Application of Water Budget Calculations, Association of American Geographers, Louisville, Kentucky, 1980.
- Crawford, Nicholas - Field Hydrology Workshop, University of Ohio, Athens, Ohio, 1980.
- National Ground Water Geothermal Heat Pump Workshop, Ohio State University, Columbus, Ohio, 1980.
- Seminar on Water Systems and Waste Water Disposal in Rural Karst Areas, Western Kentucky University, 1980.
- Speleology Workshop, Springfield, Missouri, 1980.
- Fields, Noland E. - Environmental Geology Workshop
Alabama Geological Survey, Birmingham, Alabama, 1979.
- Remote Sensing Workshop, Geological Society of America, Birmingham, Alabama, 1980.
- Hoffman, Wayne L. - Seminar on Water Systems and Waste Water Disposal in Rural Karst Areas, Western Kentucky University, 1980.
- Pickard, Claude - Cooperative Education Workshop, Western Kentucky University, 1979.

POSITIONS HELD IN PROFESSIONAL ORGANIZATIONS

Ahsan, S. Reza

Steering Committee of Cartography Special Interest Section
Local Arrangements Committee, 1980
Chairman, Workshop Committee, 1980
Association of American Geographers

Bingham, James

Local Arrangements Committee, 1980,
Association of American Geographers

Steering Committee, Southeastern Division,
Association of American Geographers

Conner, D. Glen

Committee on Publications and Promotions
American Association of State Climatologists

Crawford, Nicholas

Local Arrangements Committee, 1980,
Association of American Geographers

Program and Planning Committee, Eighth International
Congress of Speleology

Dilamarter, Ronald

Local Arrangements Committee, 1980
Co-Chairman, Field Trip Committee, 1980
Association of American Geographers

Secretariat, Local Arrangements Committee,
Eighth International Congress of Speleology

Hegen, Edmund

Geography Representative-Kentucky Academy of Science AAAS

Hoffman, Wayne

Local Arrangements Committee, 1980
Co-Chairman, Field Trip Committee, 1980
Association of American Geographers

Chairman, Program Committee
Kentucky Planning Association

Membership Committee,
Steering Committee,
Southeastern Division, Association of American Geographers

Membership Committee, Kentucky Chapter
American Planning Association

Environmental and Natural Resources Committee
National Association of Regional Councils

Lowry, Mark II
Secretary, Geography Section
Kentucky Academy of Science

Resolutions Committee, Southeastern Division,
Association of American Geographers

McGregor, Jack
Vice President, Geology Area,
Kentucky Society of Natural History

Petersen, Albert
Field Trip Committee, 1980
Association of American Geographers

REPRESENTATION AT PROFESSIONAL MEETINGS

*participated in meeting as chairman of a session, paper presentation, officer, or in some other professional manner.

Governor's Conference on Local Government, Louisville, Kentucky, July, 1979.
Conner, Davis, Hoffman.

Governor's Conference on Environment, Owensboro, Kentucky, September, 1979.
Cockrill, Conner, Davis, Hoffman.

American Association of State Climatologists, Asheville, North Carolina, October, 1979. Conner*.

Cybernetics and Man Conference, Denver, Colorado, October, 1979.
Davis*.

Kentucky Society of Natural History, Lexington, Kentucky, October, 1979.
McGregor*.

National Council of Geographic Education, Mexico City, Mexico, October, 1979.
Ahsan*.

Tennessee Professional Geologists, Cookeville, Tennessee, October, 1979.
Crawford*.

Conference on the Lunar Highlands Crust, Houston, Texas, November, 1979.
Seeger*.

Kentucky Academy of Science, Northern Kentucky University, November, 1979.
Hoffman*, Lowry*, Pickard, Taylor.

Southeastern Division, Association of American Geographers, Nashville, Tennessee, November, 1979. Ahsan, Bingham, Davis, Dilamarter, Hoffman*, Moore, Petersen, Taylor.

Kentucky Planning Association, Louisville, Kentucky, November, 1979.
Hoffman*.

National Association of Regional Councils (Federal Briefing), Washington, D.C., February, 1980. Hoffman*.

Southeast Section, Geological Society of America, Birmingham, Alabama, March, 1980. Fields.

Association of American Geographers, Louisville, Kentucky, April, 1980.
Ahsan*, Bingham*, Conner*, Crawford*, Davis, Dilamarter*, Hoffman*, Lowry, Moore, Petersen*, Pickard, Taylor.

New Madrid Study Group at the Midwest A.G.U. meeting, Bloomington, Indiana, April, 1980. Seeger.

National Association of Regional Councils, San Diego, California, May, 1980. Davis, Hoffman*.

Climate and Risk Conference, Washington, D.C., May, 1980. Conner.

Water Resource Research in Kentucky, Lexington, Kentucky, June, 1980. Crawford*.

GRANTS AND FELLOWSHIPS

- Ahsan, S. Reza - Summer Research Fellow, ASEE and Office of Naval Research at Naval Research Laboratory, Washington, D.C.
- Crawford, Nicholas - Karst Hydrology and Storm Water Management, Greenwood Area, Bowling Green, Barren River Area Development District.
- Glendale Storm Water Management Project. G. Reynolds Watkins Consulting Engineers.
- Hydrology Problems Associated with the Jenning Creek Sewer Interceptor Project. G. Reynolds Watkins Consulting Engineers.
- Storm Water Capacity of the Nahm Avenue Sinkhole. City of Bowling Green.
- Speleology Workshop. Faculty Development Grant, Western Kentucky University.
- Cave and Karst Studies Program at Mammoth Cave. Faculty Research Grant, Western Kentucky University.
- Fields, Noland E. - Landfill Site Selection and Geological Evaluation. Summer Faculty Fellowship, Western Kentucky University.
- Hegen, Edmund E. - Was appointed Extraordinary Professor at Universidad Austral de Chile, Valdivia, Chile.
- Lowry, Mark II. - Evaluation of Private School Systems in Mississippi. Summer Faculty Fellowship, Western Kentucky University.
- Seeger, C. Ronald - Mapping of the Lunar Highlands. Summer Faculty Fellowship, Western Kentucky University.

SERVICE ON OFF-CAMPUS ADVISORY COMMITTEES

- Conner, D. Glen - Kentucky Representative, National Climate Plan.
- Chairman, Allen County Planning Commission.
- Crawford, Nicholas - Ohio River Basin Commission, Citizens Task Force, Cumberland River Plan.
- Davis, James L. - Special Advisor, Barren River Area Development District.
- Hoffman, Wayne L. - Kentucky Representative, Citizens Advisory Committee, Ohio River Basin Commission.
- Board of Directors, Barren River Area Development District (BRADD).
- Chairman, Natural Resource and Environmental Problems Committee, BRADD.
- Chairman, Solid Waste Committee, BRADD.
- Special Advisory Committee on Mammoth Cave, BRADD.
- Ohio River Basin Commission, Citizens Task Force, Green River Plan.
- Petersen, Albert - Board of Directors, Bowling Green-Warren County Landmark Society.
- Central Bowling Green Revitalization Committee.

ACCREDITATION OR EVALUATION TEAM MEMBER

- Ahsan, S. Reza - Evaluator of Cartography and Curriculum Requirements, Association of American Geographers.

Evaluated General Electric Landsat proposals and a remote sensing proposal from the Naval Research Laboratory.
- Seeger, C. Ronald - Peer Group Evaluation, Department of Natural Resources, Frankfort, Kentucky.

OTHER PUBLIC SERVICE AND CREATIVE CONTRIBUTIONS

- Cockrill, Willard - Presentations to Auburn Rotary Club and the Bowling Green Garden Club.
- Several tours of Weather Station for various area schools.
- Weather information and forecasts to countless individuals and organizations during the year.
- Conner, Glen - As State Climatologist provided data and information in response to over 300 requests.
- Tours of Weather Station.
- Presentations to Scottsville Rotary Club, Williamstown Kiwanis Club, and the Natural Resource Council, Northern Kentucky Area Development District.
- Chairman, Scottsville-Allen County Planning Commission.
- Crawford, Nicholas - Kentucky Water Quality Advisory Committee field trip.
- Consultative assistance on water problems to numerous state and local agencies and to individuals.
- Presentations to Beta Sigma Phi, Nashville Grotto, Natural Resource Committee, Barren River Area Development District, Bowling Green Womens Club, and the Glendale Neighborhood public meeting.
- Dilamarter, Ronald - Consultation on potential drainage problems within subdivisions.
- Fields, Noland E. - Consultation on landfills and critical factors for solid waste disposal, Lake Cumberland Development District and the Kentucky Division of Waste Management.
- Hoffman, Wayne L. - Western Kentucky University Carpool Coordinator for Barren River Area Development District.
- Petersen, Albert - Consultation for Central Bowling Green Revitalization.

CURRENT RESEARCH ACTIVITIES

Ahsan, S. Reza

Dr. Ahsan will be working on several projects. Under investigation is a study on the Ethnic Boundaries and Human Geography of South Asia. Work on landuse maps of Kentucky counties using Skylab imageries and high altitude CIR is underway. A color landuse map of Bowling Green is also being prepared.

Bingham, James M.

Mr. Bingham continues work on a spatial analysis of economic growth and development within the Barren River Area Development District and a delineation of agricultural regions of Kentucky based on income generated, production and landuse. Also, a new project has been started examining industrial growth in non-metropolitan counties of Kentucky with an assessment of the role of truck transportation in bringing about this growth.

Conner, D. Glen

Mr. Conner is currently researching the occurrence of snow depths of one inch or more in Kentucky. The data will be analyzed to determine its areal and monthly distribution. He is also working on computer assisted instruction programs for use in meteorology and climatology laboratory exercises. In the spring, after the 1980 climatic data become available on magnetic tape, a major project will be the preparation of climatological summaries for about sixty locations in Kentucky based on the new "normal" period of 1951-1980. Computer programs are being prepared in anticipation of the project.

Crawford, Nicholas C.

Dr. Crawford continues his investigation of the karst-related flooding problems of the Bowling Green area. Other projects include: an investigation of the hydrogeology of the Lost River, Warren County, Kentucky; an investigation of sinkhole collapse in the Bowling Green area; and an investigation of the feasibility of using the large subsurface streams which flow under Bowling Green as a source of geothermal energy which could be utilized through the use of ground water heat pumps to heat and cool factories, shopping centers, and homes. Grant proposals on the latter project have been submitted to state and federal agencies. Funding through the Kentucky Division of Water through BRADD has been received to investigate nonpoint pollution of the carbonate aquifer in the Bowling Green area.

Davis, James L.

Dr. Davis continues to be active in his professional pursuits. Several grant possibilities relating to transportation planning are currently being evaluated.

Dilamarter, Ronald R.

Dr. Dilamarter completed a geomorphic background report on LANDSAT imagery of the western Kentucky Coalfield and adjacent areas under contract to the Environmental Research Institute of Michigan (ERIM).

Fields, Noland E.

Dr. Fields is continuing his studies and field investigations in the area of environmental geology. He is assisting Lake Cumberland Area Development District officials in locating waste disposal sites for multi-county use. He is also working with state officials on waste disposal site problems. His other interests involve western Kentucky coal deposits and mine site reclamation.

Hegen, Edmund E.

During his sabbatical leave in Southern Chile (1979-80), Dr. Hegen completed field work on man-land relationships in an Indian settlement in the Pre-Cordillera of Valdivia Province and on two small islands east of Isla Grande de Chiloe. Results are now being written up in three papers and a monograph. Preparation for a major research project on the potential role of the "General Pinochet Highway" is continuing. This highway will link the southern third of the nation with Central and Northern Chile. The highway's importance lies with development of natural resources use, tourism, but also with strategic considerations.

Hoffman, Wayne L.

Dr. Hoffman has participated in the preparation of several grants during the year. He is hopeful that at least one of these projects will soon be funded.

Lowry, Mark II.

Dr. Lowry is continuing research on "Public and Private School Trends in Mississippi." He will present a paper titled, "City at the Crossroads: Newburgh, New York," at the annual meeting of the Kentucky Academy of Science. Dr. Lowry is also working on a paper titled, "Ethnic Patterns in a New York Village."

McGregor, Jack D.

Dr. McGregor is involved in the application of remote sensing techniques to the discovery of petroleum in south-central Kentucky.

Moore, Conrad T.

Dr. Moore is engaged in manuscript preparation of a book entitled Nineteenth Century American Deserts: Conception, Perception and Reality which should be ready for submission to a publisher in the spring, 1981. Research on several themes related to biological resource use will resume thereafter.

Moore, Tyrel G.

Mr. Moore has participated in the preparation of a grant proposal for an interdisciplinary investigation of the social history of the western Kentucky Coal Field. If funded, this research would begin during the summer of 1981. In the meantime, he is writing the final chapters of his dissertation which deals with the economic development of the eastern Kentucky Coal Field from 1830 to 1940. The dissertation will be completed during the spring semester and portions of it will be prepared for publication as journal articles during the coming year.

Petersen, Albert

Dr. Petersen is in the process of conducting a systematic historic-cultural survey of Simpson County, Kentucky, the results of which will be forwarded to the Kentucky Heritage Commission in Frankfort. Research on the Simpson County Courthouse has led to its being placed on the National Register of Historic Places. He continues as a member of the Board of Directors of the Bowling Green-Warren County Landmark Society.

Pickard, Claude E.

Dr. Pickard plans research on the impact of resource exploitation on the quality of life in the western Kentucky Coal Field. If funded, he will also participate in a social and cultural study of the western Kentucky Coal Field.

Seeger, C. Ronald

Dr. Seeger continued work on the Skylab S-192 multispectral scanner lunar data including a final petrographic mapping of the data interpretations. This work will be published. He submitted a research proposal to the coordinator of the New Madrid Study Group for field work to investigate recent faulting in western Kentucky. This work is to begin in the summer of 1981 and include students in the investigations. He attended the Geological Society of America annual meeting and was able to make a contribution, a comment on a paper by Jason Morgan regarding cryptoexplosion structures in Kentucky, Tennessee and Missouri.

Trapasso, L. Michael

Dr. Trapasso successfully completed his doctoral dissertation oral defense in October 1980. He is presently completing the final changes on his dissertation to prepare for a December graduation from Indiana State University. Dr. Trapasso will present a section of his dissertation research at the national meeting of the Association of American Geographers in April 1981.