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Redefining healthcare education: Perspectives and accomplishments

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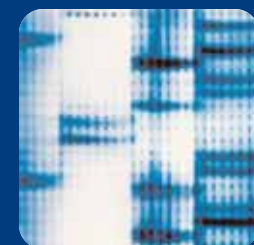
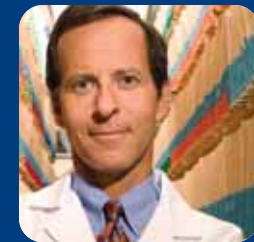
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Thomas Jefferson University

2007 Annual Report

Redefining Healthcare Education

Perspectives and Accomplishments



Mission

Thomas Jefferson University is dedicated to the health sciences. We are committed to:

- Educating professionals in a variety of disciplines who will form and lead the integrated healthcare delivery and research teams of tomorrow
- Discovering new knowledge that will define the future of clinical care through investigation from the laboratory to the bedside, and into the community
- Setting the standard for quality, compassionate and efficient patient care for our community and for the nation

We accomplish our mission in partnership with Thomas Jefferson University Hospitals, our education and clinical care affiliate.

Vision

- To be among the premier educators of healthcare practitioners in the nation
- To be a leading innovator in the provision of compassionate clinical care
- To be a major center for patient-oriented research and clinical trials
- To be a knowledge leader in selected areas of basic research

On the Cover: The Dorrance H. Hamilton Medical Education Building is an impressive, 136,000 square-foot, state-of-the-art facility that supports a restructured curriculum which brings together students from Jefferson's three colleges to learn in an environment that employs integrated teaching modalities and simulated team experiences. It will position Jefferson to prepare a greater number of health professional students to meet regional and national changes and growing healthcare needs. Also pictured are Elisabeth J. Van Bockstaele, PhD, Professor, Department of Neurological Surgery, top, David B. Nash, MD, MBA, Chair, Department of Health Policy, center, and Vijay Rao, MD, Chair, Department of Radiology, bottom.



A message from Brian G. Harrison and Robert L. Barchi, MD, PhD

With pride and distinction, for 183 years, Thomas Jefferson University has educated and nurtured some of the brightest leaders in the healthcare field. The opening of the Dorrance H. Hamilton Medical Education Building in October 2007 places our new education facilities at the very heart of our campus to support our core teaching mission and marks another critical chapter in our longstanding history at the forefront of medical education.

To support our academic mission, the long-term plan, developed in conjunction with our clinical partner, Thomas Jefferson University Hospitals, is already transforming Jefferson's campus into a more visibly recognized community for learning and clinical care.

To attract the brightest students, Jefferson is increasing the number of scholarships offered, through the creation of the Eakins Legacy fund that provides matching funds for endowed chairs and scholarships.

Our research scientists have made numerous discoveries that have gone from the laboratory to the patient bedside and out into the community. Our investigational studies will continue our emphasis in the areas of cancer

and cancer biology; cardiac and cardiovascular biology; neuroscience, population and public health; and infectious diseases and vaccines.

Jefferson's future success not only depends on realizing our research, education and patient care goals, but it is also reliant on the continued dedication of our faculty and employees, the commitment of our donors, the strategic alliances we have formed throughout the community and the support and vision of our leadership and board members.

Collective and collaborative – this teamwork has strongly positioned us today and will continue to move Jefferson forward to achieve our goal of redefining healthcare.

Brian G. Harrison
Chair, Board of Trustees

Robert L. Barchi, MD, PhD
President and Chief Executive Officer

Strengthening the Social Contract Between Medicine and Society

Thomas J. Nasca, MD, MACP, *The Anthony F. and Gertrude M. DePalma Dean, Jefferson Medical College, Senior Vice President for Academic Affairs, Thomas Jefferson University*

I am confident that a Jefferson medical education prepares young physicians to become the leaders in tomorrow's healthcare system. That system will be characterized by complexity and rapid evolution. In order to prepare students for the challenges in delivering excellent patient-centered care over careers spanning the first half of the 21st century, we must equip them with not only knowledge and skills of the rapidly evolving science of medicine, but also the values and virtues characteristic of the 'Virtuous Physician.'

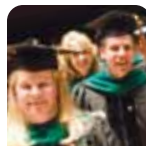
While knowledge and skills can be taught in the classroom or in simulations of the clinical setting, the affirmation of values is best learned in the care of patients at the shoulder of superior clinicians who model virtuous behaviors. The fundamentals of principle based ethics: Beneficence, Justice, Non-Malificence, and Autonomy; coupled with the virtues of Altruism, Benevolence, Compassion, Courage, Humility, Integrity and Intellectual Honesty are the underpinnings of the behaviors and actions of the Virtuous Physician.

At Jefferson, we are as serious about excellence in values as we are about excellence in surgery. We are as serious about knowing how to help a person cope with his or her illness as we are about making the proper diagnosis.

Caring about and for our patients is our legacy, and teaching the next generation of physicians our values is our responsibility.

Professional principles and values are the broad-based levers which influence the direction of our complex system of education, and in the broader sense our healthcare delivery system. As the facts and technologies evolve, the principles and values remain durable. They provide the conceptual scaffolding which places the patient at the center of our activities, and continually draw on and reinforce the altruistic and empathetic tendencies of our students, faculty, and practitioners. Our faculty reinforce that medicine is a freely given service, rather than a task.

There is no question that the values and principles that underlie Virtuous behavior and ethical deportment are not options, but part of the core responsibilities of every physician, regardless of specialty. These values are the common bond among members of the profession. They are the basis for the social contract between medicine and society, and the glue that creates the trust between the profession and society. These principles and values are what the Faculty of Jefferson Medical College stand for and aspire to demonstrate each day and, through our actions, inculcate in our students the desire to become Virtuous Physicians.

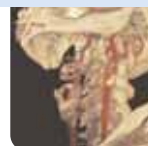


Jefferson Medical College received full accreditation for eight years from the Liaison Committee on Medical Education (LCME).



The Jefferson InterProfessional Education Center, created in January 2007, is one of only a few such centers in the nation. Director Christine Arenson, MD and Co-Director Molly Rose, RN, CRNP, PhD spearheaded campus-wide efforts to institutionalize interprofessional education, including didactic instruction, clinical simulation and skills training, team-based clinical care, faculty development, and networking opportunities.

Accomplishments



The Department of Radiology was ranked first in the United States in Resident Education by the American Board of Radiology based on cumulative performance of Jefferson's residents over the last five years.



Jefferson Medical College received Accreditation with Commendation from the Accreditation Council for Continuing Medical Education (ACCME). Less than 12 percent of all CME providers in the United States and Canada receive this designation.



Thomas J. Nasca, MD, MACP, Dean of Jefferson Medical College, with Jefferson Medical College students from left, Amber Johnson, Samuel Grodofsky, Andrew Rosner and Kenika Robinson.

Growing on All Fronts to Meet the Ever-Expanding Demand for Health Professionals

James B. Erdmann, PhD, *Dean, Jefferson College of Health Professions*



Marcia Levinson, PhD, Assistant Professor of Physical Therapy in the Jefferson College of Health Professions, teaches OT student Jamilyn Ambrosky, left, and PT student Gillian Blaney, right, to work with children who are delayed or at-risk for delay to achieve age-appropriate functional activities as part of a Department of Education, Special Education Programs grant. This grant provides tuition assistance to prepare occupational and physical therapy students to specialize in early intervention and school-based practice.

As part of Jefferson College of Health Professions' efforts to support our enterprise-wide goal of becoming a comprehensive academic health institution, we continue to move our programs toward higher-end competencies in key health professions, as well as to offer new degreed curricula.

We achieved significant milestones in 2007. It marks the second year of record-breaking enrollment; we graduated the first class to earn its Doctor of Physical Therapy (DPT) – a program combining classroom work with clinical experiences to prepare students to practice in all clinical areas of physical therapy; and, collaborating with the Council for Relationships, we developed a master's level curriculum in Couple and Family Therapy.

In September, the college also enrolled students in newly developed doctoral programs in nursing (DNP) and occupational therapy (OTD). These dedicated students will have the opportunity to achieve a degree of specialization that does not exist at the master's level. Their higher level of training and expertise will make them more valuable as clinicians and as teachers within an interdisciplinary setting.

We also continue to drive forward our plans to offer Doctor of Pharmacy (PharmD) degrees at our School of Pharmacy slated to open in 2008.

I am pleased to report that Jefferson College of Health Professions is uniquely positioned for strategic growth and development, and to meet the demand for superbly trained professionals to staff and train tomorrow's integrated healthcare delivery teams.



Recent Nursing graduates (MSN) had a 100 percent pass rate on national certification exams and BSN graduates had a 96 percent pass rate on 2006 licensing exams, well above the national average of 88 percent.

Accomplishments



Jefferson College of Health Professions is the only institution in the region to offer academic healthcare programs in cytotechnology, biotechnology and medical technology.

Expertly Launching Tomorrow's Biomedical Science Explorers Toward Discovery

James H. Keen, PhD, *Dean of the Jefferson College of Graduate Studies and Vice President for International Affairs*



Laurence C. Eisenlohr, VMD, PhD, Professor of Microbiology and Immunology, top, instructs Jefferson College of Graduate Studies student, James S. Testa, center, and post-doctoral fellow, Kerstin Kandler in the use of the confocal microscope to review digital images from a tissue sample.

What makes the Jefferson College of Graduate Studies a supportive and pioneering home for future discoverers of new knowledge?

It's our mission to train students to embrace a lifelong passion for discovery. Discoveries that may revolutionize the way we treat cancer; help patients with Parkinson's disease retain their ability to move and function normally; or lead to an understanding of what triggers autoimmune diseases.

These future advances start with a thirst for knowledge and leaders who light the way, sharing their passion and excitement for finding answers to serve the greater good. Our students benefit from being taught by individuals who are skilled researchers and teachers, as well as hands-on caregivers and health practitioners.

Our goal is to offer PhD, master's and postdoctoral biomedical science programs that will prepare our students to meet the challenges of a rapidly changing research environment. In support of this, our public health program, now directed by a recognized leader in the field, Robert Simmons, DPH, MPH, CHES, offers both full-time and part-time options leading to an MPH degree; our postdoctoral programs are attracting national attention; our PhD students receive national recognition for their work and the interdisciplinary orientation of our PhD programs continues to evolve.

As we grow, sharing our excitement for discovery and educating those future explorers who may, one day, help all of us lead healthier, more productive lives has been – and continues to be our singular passion.



Our new PhD flexible entry pathway allows entering students to choose among the college's eight PhD programs.

Accomplishments



Expanded Postdoctoral Fellow Research Symposium Day enjoyed broad participation by Jefferson postdocs.

A Biomedical Revolution

Steven E. McKenzie, MD, PhD, *Vice President for Research*

At Jefferson, we are fortunate to be within a short walk of Washington Square and Independence Hall. Several times a week, I will take a walk around those places and I am reminded of the intellectual prowess and courageous action displayed by those who launched the American Revolution. The impact of the foresight and single-mindedness of purpose of those individuals has shaped our country into what it is today.

Currently, we are in the midst of a different kind of revolution, but one that is no less important to the future and well-being of our population – a biomedical revolution. We are encouraged and inspired by the intellects of those who are moving a molecular and genetic understanding of disease into better care of our patients. In all areas of medical specialties, you will find our biomedical investigators tirelessly searching for improved diagnostic evaluations, better treatment options and more desirable outcomes.

The current work of these contemporary explorers and thinkers must also be perpetuated by the continual training of future scientists – men and women who will carry on the work and lead the search through the unknown to what is waiting to be discovered.

Dr. Scott Waldman has restructured and spearheads Jefferson's MD/PhD program, positioning it to compete for National Institutes of Health (NIH) funding for a Medical Scientists Training Programs grant to expand our enrollment. The dual-degree program trains future physician scientists,

not just to make discoveries in the lab, but to bring these breakthroughs to the bedside and, ultimately, into the community – translational medicine in its purest sense.

Additionally, NIH and Department of Defense funding support the discovery of Halgeir Ruik, MD, PhD, Professor of Cancer Biology at Jefferson Medical College and Lynn Neilson, PhD, a postdoctoral fellow in Cancer Biology, showing that the pituitary hormone prolactin activates the protein Jak1 to initiate a new “signaling pathway” that may regulate the growth and survival of breast cancer cells. The scientists are investigating the potential usefulness of Jak1 as a new drug target for patients.

A shining example of translational medicine – one that truly goes beyond the bedside into the community – is the work of Dr. Kathleen Squires. She is leading a new wave of approaches to treating HIV/AIDS in the community through Jefferson's recently unveiled HIV/AIDS clinic, which she jointly manages with Dr. Joseph DeSimone. Reaching out to community-based organizations, minority groups and local healthcare centers, Dr. Squires treats patients as well as educates Jefferson residents and fellows in the care and complexity of the HIV/AIDS patient.

In medicine, our challenges are many: from infectious diseases to cancer to reduced research funding. However, let us draw from the dedication of talented Jefferson researchers and join the excitement of this new revolution.



The Department of Radiology was ranked first in the United States by the Radiology Society of North American (RSNA) in research presentations over the past 10 years.

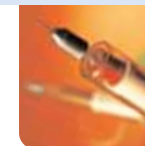


The Department of Orthopaedic Surgery's research program ranked number two in the United States in National Institute of Health (NIH) funding and number one in the United States in the number of research grants funded by the NIH.

Accomplishments



Urologists are studying whether a neo-bladder construct grown from a patient's own cells can improve bladder function for adult spinal cord injury patients. Jefferson is only one of six sites in the United States enrolling participants in the trial that will involve a total of 10 patients.



Jefferson established the Vaccine Center to create an infrastructure for all of the university's research and clinical efforts, while hoping to spur new collaboration and innovation.



Steven E. McKenzie, MD, PhD, Professor of Medicine and Pediatrics and Vice President for Research visits Carpenter's Hall, an iconic Philadelphia landmark representing a revolutionary time in history, and a symbolic foreshadowing of the evolution of research.



Kathleen Squires, MD, Director, Division of Infectious Diseases, Department of Medicine, left, and Joseph A. DeSimone Jr., MD care for patients with a wide variety of infectious diseases such as AIDS, Lyme Disease, Osteomyelitis, Endocarditis, and Chronic Fatigue Syndrome. The Division also has an active clinical research program that brings state-of-the-art treatments to patients.

Kimmel Cancer Center at Jefferson – an Epicenter of Change

Richard G. Pestell, MD, PhD, FRACP, *Professor and Chair of the Department of Cancer Biology, Associate Dean for Cancer Programs, Vice President for Oncology Services, and Director of the Kimmel Cancer Center at Jefferson*

Integrated, multidisciplinary clinical care, research, education and training are what Jefferson and the Kimmel Cancer Center are all about. No program is guided by that mission more than the Kimmel Cancer Center. The growth in staff, programs and funding is key to our success in our work against cancer. That's why I am so excited to share our center's outstanding progress with you.

The magnitude of change here and the commitment to the biomedical infrastructure are apparent in increased new discoveries and improved patient care. Over the last two years, we have experienced a doubling of investigator-initiated clinical trials, growth in the Jefferson Cancer Network membership and significant new clinical research projects.

Since joining Jefferson two years ago, the center has recruited 55 new full-time faculty members, stimulated an approximate doubling of NCI grant funding and formed two new programs in breast and prostate cancer and radiation oncology and radiology. New eminent cancer researchers bring passion, curiosity and distinguished research achievements to Jefferson's fight against cancer. We have been granted more than 50 pioneering patents for cancer discoveries.

One of the leading cell biologists in the world is a new member of the Kimmel Cancer Center at Jefferson. Michael P. Lisanti, MD, PhD, Professor

of Cancer Biology, identified by Thomson Scientific as the last decade's 13th most cited researcher, is studying the Caveolin-1 (Cav-1) gene mutation, shedding light on how breast cancer develops and what can be done to alter the process. His Kimmel Cancer Center team discovered the most common mutation in estrogen receptor expressing human breast cancer which occurs in the Cav-1 gene. Dr. Lisanti is also investigating whether the Cav-1 mutation may relate to therapy resistance.

Clinical pharmacologist Scott A. Waldman, MD, PhD, Professor and Chair of Pharmacology and Experimental Therapeutics, continues his groundbreaking discoveries in colorectal cancer. His team has shown that if GCC (guanylyl cyclase C) is present in tumors in other areas of the body, the cancer is metastatic colon cancer. Additional studies suggest that colon cancer is a disease of hormone insufficiency and not genetic, leading Dr. Waldman to explore hormone replacement therapy as a potential method for treating or even preventing intestinal cancer formation.

As the energetic and dedicated team of scientists at Jefferson's Kimmel Cancer Center continues their noteworthy accomplishments, they gain prominence, prompting more patients to place their trust in Jefferson for cancer care and prevention.



Using zebrafish, radiation oncologist Adam P. Dicker, MD, PhD, has shown that nanoparticles can regulate damage to normal tissue from radiation.



Kimmel Cancer Center at Jefferson cancer biologists directed by Arthur Buchberg, PhD, and Linda Siracusa, PhD, found a mutation in the gene *Atp5a1* can reduce the number of colon polyps and potentially cut the risk of cancer.

Accomplishments



A multi-institutional team including Jefferson microbiologist and immunologist Linda D. Siracusa, PhD, and research associate Cinzia Sevnigani, PhD, discovered new evidence indicating that small pieces of non-coding genetic material known as microRNAs might influence cancer susceptibility.



Led by Richard G. Pestell, MD, PhD, FRACP, Jefferson researchers identified the protein Akt1 as a key component in helping a quarter of all breast cancers spread.



Richard G. Pestell, MD, PhD, FRACP, Director of the Kimmel Cancer Center at Jefferson, left, and Edith P. Mitchell, MD, FACP, Clinical Professor of Medicine and Medical Oncology, meet with a patient. Led by Dr. Mitchell, a recent Kimmel Cancer Center at Jefferson study of more than 2,200 diagnosed with breast cancer, found that African American women have more advanced breast cancer at the time of diagnosis than Caucasian women.



Michael P. Lisanti, MD, PhD, Professor, Department of Cancer Biology, works collaboratively with his team of researchers to discover new advances and find the cure for breast cancer.

Pioneering New Treatment Strategies

Arthur Michael Feldman, MD, PhD, *Magee Professor and Chair of Medicine*

Identified as the disease responsible for the most deaths of both men and women in the United States, cardiovascular disease remains an important focus for the Jefferson Heart Institute. By leveraging an array of talent and resources, our cardiovascular disease treatment approach targets all fronts. Our primary goal is developing new diagnostic tests and treatment strategies by closely linking laboratory research and discovery with observations and treatments at the patient's bedside.

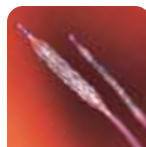
A team led by Thomas G. Force, MD, PhD, The James C. Wilson Professor of Medicine and Clinical Director of the Center for Translational Medicine, has found that a new generation of cancer-fighting drugs called Tyrosine kinase inhibitors (TKI) – such as Gleevec® – can have potentially fatal toxicities to the heart. Dr. Force has found that patients with early symptoms of heart toxicity while on these types of drugs can resume cancer treatment if the therapy is temporarily withdrawn and appropriate heart drugs are administered. To learn more about how to care for these challenging patients, with M.D. Anderson and other facilities, Jefferson is leading a multicenter registry for patients receiving potentially cardiotoxic anti-cancer drugs.

Jefferson is also pioneering the study of pervasive conditions, such as obesity, that are major risk factors for the development of cardiovascular disease. For example, Bonita Falkner, MD, Professor of Medicine and

Pediatrics, is seeking to identify biomarkers that protect against obesity-related diseases, as well as to find those that predict tissue injury. With a \$4 million grant from the Commonwealth of Pennsylvania's national tobacco settlement, Dr. Falkner leads the Jefferson Center of Excellence (COE) in identifying those genetic markers that may, one day, pave the way for early intervention in obesity-induced cardiovascular disease.

Researchers led by Center for Translational Medicine's Director Walter J. Koch, PhD, who also directs the George Zallie and Family Laboratory for Cardiovascular and Gene Therapy, have used gene therapy to reverse heart failure in animals. They have also discovered that the gene therapy changed the geometry of the heart, slowing or even reversing its enlargement. These novel approaches to treating heart disease will soon be tried in patients.

Amidst an increasingly complex healthcare system and rapidly shrinking research funds, the multifaceted paths of our cardiovascular researchers strive to link the research bench with the patient's bedside in order to anticipate and protect patients from the risks of developing cardiovascular disease and to provide the best possible treatment if they develop disease. At Jefferson Heart Institute, we dedicate our vision, creativity, and diligence to this large task.



A Jefferson cardiology study found that drug-eluting stents used for patients with diffuse (extensive) cardiac disease fare less well in keeping veins open than those used for patients with focal disease.

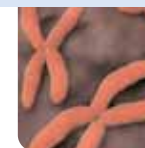


Jefferson researchers discovered that Plavix®, when used in addition to aspirin, does not worsen bleeding after off-pump heart bypass surgery.

Accomplishments



Center for Translational Medicine scientists have staved off heart failure in animals, using gene therapy to shut down the adrenal gland's excessive output of epinephrine and norepinephrine.



Cardiac Catheterization Laboratory researchers have determined that nicardipine, a calcium channel blocker, is effective in reversing the "no-reflow" phenomenon that affects as many as 50,000 patients who undergo angioplasty annually.



Arthur Michael Feldman, MD, PhD, Magee Professor and Chair of Medicine, left, and Walter J. Koch, PhD, Director, Center for Translational Medicine, discuss the center's progress in research that may lead to better therapies for heart patients.

Collaborating on All Fronts to Combat Neurological Disease

Robert H. Rosenwasser, MD, FACS, *Professor and Chair of Neurological Surgery*
A.M. Rostami, MD, PhD, *Professor and Chair of Neurology*

At Jefferson Hospital for Neuroscience, among the most comprehensive centers for neurological disorders in the nation, our neuroscientists collaborate in interdisciplinary settings to conduct research and care for patients who seek relief from the devastating symptoms of neurological and spinal disease.

The Acute Stroke Center at Jefferson, directed by Rodney D. Bell, MD, Professor of Neurology, is the region's largest and one of the most advanced in the United States for the diagnosis, treatment and prevention of stroke. The center's Brain Attack Program offers treatment that, begun within six hours of symptom onset, can increase by 50 percent the likelihood of complete recovery from stroke.

Jefferson neuroscientists offer patients such exciting therapies as Deep Brain Stimulation, where neurological surgeon Ashwini D. Sharan, MD, inserts a stimulator to control Parkinson's disease tremors, and neurologists Tsao-Wei Liang, MD, and Daniel E. Kremens, MD, evaluate and select the patients for treatment and provide continuing care.

Barry W. Rovner, MD, Professor of Neurology and Professor of Psychiatry and Human Behavior, Director of the Alzheimer's Center for Disease

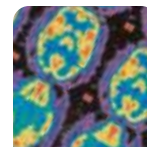
Research and Care and the Jefferson Geriatric Psychiatry Program, has witnessed remarkable stabilization using investigational drugs against Alzheimer's. With a \$3.5 million grant from the Commonwealth of Pennsylvania's Tobacco Non-formula Settlement, his team is also developing a screening method to diagnose dementia in a racially and economically diverse urban population. In a second study funded by this grant, Laura Gitlin, PhD, Director of the Center for Applied Research on Aging and Health (CARAH) and Professor of Occupational Therapy at Jefferson College of Health Professions, studies how education and support can improve the life of caregivers and patients with dementia.

In addition, Dr. Rovner's total \$6.5 million grant from the National Institute of Mental Health and the National Eye Institute funds his study to prevent depression and improve function in age-related macular degeneration.

From arterial venous malformation and brain tumor care to headache and sleep disorders, patients rely on Jefferson's extraordinary team of neuroscientists.



A study directed by Assistant Professor of Neurological Surgery James S. Harrop, MD, showed that 31 percent of patients with spinal cord injury treated with the protein Cethrin[®], regained at least partial movement and/or motor function.



Through the leadership of Jay Schneider, PhD, Professor of Pathology, Anatomy and Cell Biology, and Neurology, scientists are investigating whether the nutritional supplement, creatine can improve function and prevent damage to the brain cells of patients with Parkinson's.

Accomplishments



Neurological surgeons led by John K. Ratliff, MD, found that being obese raises the risk of spinal surgery complications. The greater the obesity, the higher the risk.



Cancer biologists D. Craig Hooper, PhD, and Hilary Koprowski, MD, showed that blood brain permeability changes almost always correlate to the severity of damage to a central nervous system from a disease such as MS.



The husband and wife teams of Piera Pasinelli, PhD, Davide Trotti, PhD, Koichi Iijima, PhD, and Kanae Iijima-Ando, PhD, recently joined the Farber Institute for Neuroscience, Jefferson's premier research facility for nervous system diseases. These four faculty members are accomplished senior researchers whose work spans basic, translational and clinical science, with a strong emphasis on molecular and cellular neurobiology and genetics.

Setting the Standard for Efficiency and Patient Safety

William M. Keane, MD, *The Herbert Kean, MD, Professor and Chair of Otolaryngology – Head and Neck Surgery, and Medical Director of Jefferson University Physicians*

Improving the patient experience is not just our wish, it's a mandate at Jefferson which we take very seriously. We know that quality patient care demands a compassionate healthcare team, supported by sophisticated technology in a user-friendly accessible environment.

For the past several months, we have been researching and studying ways in which we can streamline our processes in order to provide patients with the standard of outpatient care they deserve. As part of this quest, we have turned to the technology of the Electronic Medical Record.

This digital health record is a paperless chart management system wherein patients' information – health history, allergies, lab results, images, prescriptions, and other key information – can be electronically stored and securely accessed by health practitioners involved in their care. It eliminates the need for paper charts, multiple copies of test results, and reiteration of health information by the patient.

This portable health information repository is transferable to different caregivers, making it easy for the patient to take possession of his or her personal health record should that patient move or leave the Jefferson

system. In addition, our physicians will be able to accept other digital records – or scan in traditional paper forms – from previous medical visits.

Imagine just how convenient it would be for a patient to have web access to his or her record. Not having to fill out the plethora of insurance, emergency contact and health background information required by each new doctor appointment will be a welcome change for everyone.

As a physician, I embrace this technology because I believe it creates time for more interaction with our patients. In addition, its trending and graphing features would allow me to visually show my patient how his or her test results have remained the same, or changed over time. As a researcher, I'm excited to think about the boundless potential for its use in tracking a population of patients with a certain disease and how we can study and use that information to improve many lives.

We look forward to piloting our Electronic Medical Record in the spring of 2008, but even more, we look forward to improving our patients' experiences when selecting Jefferson healthcare.



A new guide on pancreatic cancer, co-written by Charles J. Yeo, MD, Samuel D. Gross Professor and Chair of Surgery, offers a better understanding to patients and caregivers of the unique challenges associated with a diagnosis of pancreatic cancer. *Understanding Pancreatic Cancer: A Guide for Patients and Caregivers* is published by the Lustgarten Foundation for Pancreatic Cancer Research.



Cardiology and Cardiac Surgery faculty received UNOS certification for the Cardiac Transplantation Program, and successfully implanted the first Jarvik 2000® artificial heart in the region.

Accomplishments



Sleep disorder and ear, nose and throat specialists examined an innovative procedure, known as Genial Bone Advancement Trephine (GBAT), to treat obstructive sleep apnea syndrome. In the procedure, a small portion of the lower jaw which attaches to the tongue is moved forward, increasing the airway space.



The Department of Rehabilitation Medicine received continuing funding for the oldest spinal cord injury model system program in the United States, continually funded since the late 1970s.



William M. Keane, MD, The Herbert Kean, MD, Professor and Chair of Otolaryngology – Head and Neck Surgery and Medical Director of Jefferson University Physicians, led the quest in the development and implementation of the Electronic Medical Record, set to pilot in 2008. Here, Dr. Keane, left, demonstrates the use of the EMR to Matthew C. Miller, MD, Chief Resident, Department of Otolaryngology – Head and Neck Surgery, right, and Jennifer H. Carey, CRNP, CORLN.

Clinical Transformation and Business Process Redesign

John Ogunkeye, MS, *Executive Director of Jefferson University Physicians*

The forthcoming implementation of the Electronic Medical Record (EMR) technology is an exciting leap forward. Exciting as it is, however, it is really just the tool that was the impetus for our total clinical transformation and comprehensive business process redesign.

While researching the product and consulting with other academic healthcare facilities, it quickly became apparent that we needed first to re-examine and redefine Jefferson University Physicians' care delivery model. Learning from the mistakes of others, we knew we couldn't simply implement a technology that potentially could be inconsistent with Jefferson's current needs and processes. Optimizing our clinical processes meant looking at our workflow and practices from beginning to end and determining the best way to retool our system.

We recognized that it is critical that this new system of care be more responsive to both patient and staff needs; improve the quality, safety and services that Jefferson provides; standardize processes with room for common-sense flexibility; protect the privacy and security of patient information; and support sustainable change. As an academic institution,

we feel it is our responsibility and mission to analyze how to optimally integrate best practice management techniques and to educate all our staff members to utilize this system to its full potential.

To achieve these sweeping goals, we solicited input from all levels of Jefferson staff – physicians, administrators, nurses, technologists – so we could design a system that could best meet the needs of all. Along with re-engineering the system, we're studying how to best implement it and train our staff to get the greatest benefit from this transformation. Our patients' experiences will surely improve from consistent and streamlined practices.

With physician and staff participation in the development process, we've all become integrated partners in this endeavor to improve our care delivery system. Embracing this new technology and continuing to focus on an improved all-around experience for our patients are common goals for our staff as individuals, as well as proud members of the Jefferson team.



A five-year business planning initiative draws the blueprint for Jefferson University Physicians' future strategy and provides supporting data for the planned ambulatory care building.



A clinical program partnership with Frankford Health System established a Jefferson University Physician presence in the Bucks County area.

Accomplishments



Jefferson University Physicians' (JUP) multidisciplinary Sleep Center partnership with Methodist Hospital created an innovative funds flow model aligning the financial incentives of JUP with Methodist.



Jefferson University Physicians initiated the Center for Medicare and Medicaid Services' PQRI (Physician Quality Reporting Initiative) program for the largest primary care practices and many subspecialties.



Maureen K. McDade, Senior Director, Operations, left, and John Ogunkeye, Executive Director and Vice President for Business Affairs, Jefferson University Physicians, discuss the Electronic Medical Record and the benefits it will provide for Jefferson University Physicians.



Karen Javie, RN, MSN, Vice President for Strategic Initiatives, left, and Chris Smith, RN, Director of JEFF NOW[®], played an instrumental role in the Emerging Technology Committee whose purpose was to introduce and explore new and current technology and integrate it into operations.

Financials

Operating Revenues

• Physicians' professional services	37.8%
• Grants and contracts	22.3%
• Tuition and Fees	11.3%
• Sales from auxiliary activities	19.3%
• Endowment payout	1.2%
• State appropriations	1.9%
• Contributions	0.5%
• Other sources	5.6%



Operating Expenses

• Salaries and wages	53.3%
• Employee and faculty benefits	12.1%
• Depreciation	3.1%
• Heat, light and power	3.3%
• Debt service	1.1%
• Other	27.1%



Thomas Jefferson University

June 30, 2007 and 2006 (\$ in Millions)

How We Received Our Revenues	2007	2006
Physicians' professional services	215.8	203.2
Grants and contracts	127.2	126.0
Tuition and Fees	64.3	58.0
Sales from auxiliary activities	110.0	103.2
Endowment payout	7.1	6.6
State appropriations	10.8	10.5
Contributions	3.1	2.2
Other sources	31.9	29.5
Operating Revenues	\$570.2	\$539.2

How We Spent Our Revenues	2007	2006
Salaries and wages	295.9	284.9
Employee and faculty benefits	67.4	63.6
Depreciation	17.1	17.3
Heat, light and power	18.2	17.1
Debt service	6.2	6.2
Other	150.6	144.5
Operating Expenses	\$555.4	\$533.6
Subtotal	\$14.8	\$5.6
Non-operating Gains/(Losses), Net	\$62.4	\$13.0
Net Income/(Loss)	\$77.2	\$18.6

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