MEDICAL SCHOOL TO OPEN AT YALE COLLEGE

Three years after Yale College joined with the Connecticut Medical Society to establish the Medical Institution of Yale College by an Act of the Legislature, thirty-seven Students are soon arriving in New Haven from all corners of New England to commence studies in Medicine, Anatomy, Chemistry, and Natural History at the new school. Seventeen members of the class come from Connecticut; the rest come from Vermont, New Hampshire, and Massachusetts.

The Students, whose names, towns, and places of residence in New Haven are listed here, met the requirement for admission, "to produce satisfactory evidence of a blameless life and conversation."

The new Medical Institution has a most illustrious and accomplished faculty, assembled by Dr. Timothy Dwight, the President of Yale College, and has engaged in additional study in Edinburgh, Glasgow, and London.

Dr. Benjamin Silliman is professor of anatomy, chemistry, and of natural history at Yale College, where he has outlasted and equipped a most remarkable Laboratory, the Silliman Laboratory includes the famous Cabinet of Minerals donated to Yale College by Col. George Gibbs of Newport, Rhode Island, which has the distinction of being the first to have the great American mineralogist, Dr. Silliman's Chemistry Laboratory—in Mr. Gorham's, and also houses Dr. Silliman's Chemistry Museum, and every demonstration which is needed in that department will be given.

By the Articles of Union Act of the Legislature passed in 1810, to be examined for a license to practice Medicine in Connecticut, a candidate must be 21 years of age, and must have completed three years of apprenticeship with a practitioner of 'respectable standing,' as well as attend one course of lectures at the Medical Institution. Each candidate for Medical Licensing must also pass an oral examination administered by a board made up of the professors from the Medical Institution and members of the Connecticut Medical Society. Students wishing to obtain the M.D. Degree must fulfill those same requirements but must attend two courses of lectures, one of which must be completed at the Medical Institution of Yale College. Most Students have taken rooms in the large stone house at the head of College street that has been taken by the Medical Institution. Others are lodging elsewhere around the town, including in Dr. Skinner's, Mr. Munson's, in the Lyceum—which also houses Dr. Silliman's Chemistry Museum—and in Mr. Gorham's, and also in Dr. Skinner's.

THE MEDICAL INSTITUTION OF YALE COLLEGE.

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<tr>
<th>Name</th>
<th>Residence</th>
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<td>Elizur Alexander</td>
<td>Hartford,</td>
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<td>Jonathan K. Rusbach</td>
<td>Brandon,</td>
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<td>Emery Bosel</td>
<td>Middlebury,</td>
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<td>Elijah W. Carpenter</td>
<td>Lebanon,</td>
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<td>Joseph Cutter</td>
<td>Brattleboro,</td>
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<td>Bathiah Daggett</td>
<td>Jefferson,</td>
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<td>Freeman Elyson</td>
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<td>Khourie Elyson</td>
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<td>Lyman Foot</td>
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<td>Miles Goodyear</td>
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<td>Joel L. Griffin</td>
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<td>Nootanfield Howard</td>
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<td>Seth Kirby</td>
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<td>Jedidiah P. Kirby</td>
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<td>Wilford L. Lay</td>
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<td>Willard Marsh</td>
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<td>John H. Munson</td>
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<td>Joseph McGuff</td>
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<td>Lyman Paddock</td>
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<td>John Elyson</td>
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<td>Benjamin Putwiss</td>
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<td>Dudley W. Rhoades</td>
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<td>Roger S. Elyson</td>
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<td>David S. C. H. Smith</td>
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<td>John T. Smith</td>
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<td>Ilion Elyson</td>
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<td>Amos Taylor</td>
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<td>John A. Tomlinson</td>
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<td>Rufus Turner</td>
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<td>Lucas Tyler</td>
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<td>Peter P. Woodbury</td>
<td>Farmington,</td>
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<td>Sylvester Wooster</td>
<td>Hartford,</td>
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<td>Robert Whitelaw</td>
<td>Lanes, Mert.</td>
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<td>Jesse D. Wright</td>
<td>Saybrook,</td>
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To the public.

The Medical Institution of Yale College, established by an Act of the Legislature of this State, will begin its operations in the last week of October, in accordance with the following arrangement of the lectures will begin Monday, 1st instant, on Anatomy and Surgery, by Dr. John Munson, M.D., at the time and place where the Medical Professor will be operated upon in presence of the Students of Medicine.

The cost to the Students for the full course of Lectures, described further in the Advertisement placed on this page by Dr. Dwight, will be fifty dollars. The course will last six months, with no vacation, and will be given to all thirty-seven Students. During this time, the Medical Professors will perform Surgical Operations, gratis, upon such patients as will consent to be operated upon in presence of the Students of Medicine.

Students at the Medical Institution may also attend Lectures at Yale College on Natural Philosophy, Mineralogy, and Geology, and they will enjoy access to the Library of the Academical as well as of the Medical Institution. There is a respectable Anatomical Museum, and every demonstration which is needed in that department will be given.

Students wishing to obtain the M.D. Degree must fulfill those same requirements but must attend two courses of lectures, one of which must be completed at the Medical Institution.
Seeing how doctors saw themselves

The shifting identities of physicians through time are a scholar’s life’s work

It’s only partly a figure of speech to say that John Harley Warner, Ph.D., lives surrounded by books. To meet with him, a visitor first ascends to a second-floor balcony that overlooks the book collection of the School of Medicine’s Harvey Cushing/John Hay Whitney Medical Historical Library. Then, a walkway to a door built directly into the stacks opens into Warner’s office, which is filled with floor-to-ceiling bookcases of its own. It is a fitting perch for Warner, Avalon Professor of the History of Medicine and chair of the School of Medicine’s Section on the History of Medicine.

Warner, whose demeanor is also bookish, and is marked by the reserve of many scholars in the humanities, originally planned to become a scientist. But in college, a late-night conversation over coffee with a friend about The Two Cultures, British physicist/novelist C.P. Snow’s classic 1959 lament on the divide between the sciences and the humanities, opened his eyes to a new path. “People think about this?” Warner recalls asking himself. “I really hadn’t realized that such a field existed.”

He went on to graduate training with Barbara G. Rosenkrantz, Ph.D., professor of the history of science (now emerita) at Harvard University, and became interested in the changing identities of medical practitioners of the 19th century—how were physicians’ views of themselves and their profession transformed in that rapidly changing world? “What historians are good at is messiness,” Warner says. “In some ways we’re better as cultural critics in getting people to ask questions, and to reflect, than we are as boosters.”

These concepts inform much of Warner’s research, including his major 1998 work Against the Spirit of System: The French Impulse in Nineteenth-Century American Medicine, which is rooted in the diaries, letters, and clinical notes of young American doctors studying medicine in early-1800s Paris—the center of cutting-edge science—who returned to America armed with new knowledge and perspectives.

Generally, Western medicine had inherited “theoretically complex, very rationalistic” medical systems from the Enlightenment, Warner says. But in Paris, American doctors saw an opportunity for systematic change that could “socially and culturally uplift the medical profession in the United States.” They could now “ignore things they saw as literally irrelevant, because they didn’t have any purchase on the real world,” instead focusing on the patient at the bedside and at the body at autopsy, and making correlations between the two. “Observe and describe, don’t go beyond that,” is how Warner describes this new outlook. “It really is the origin of the American kind of clinical, hospital-based medicine, and the idea that the hospital should be a place for research as well as practice that takes shape as a consequence,” profoundly changing the profession and doctors’ identity in the process.

Warner is now working on a book-length study of James Jackson Jr., M.D., a young American doctor who apprenticed in a Paris hospital in the early 1800s, making use of his “wonderfully rich” weekly correspondence with his father, a Harvard professor and one of the founders of Massachusetts General Hospital. Another current research project is a study of the transformations of the hospital patient chart from the 19th to 21st centuries.

In this year of the School of Medicine’s Bicentennial, Warner says, one could argue it is the notion of identity that now sets the medical school apart. Before the 1900s and the philanthropic infusion of funds that made reform possible, Yale’s medical school “resembled a trade school,” as was typical of American medical schools at the time. And with the establishment in the 1920s of the Yale System of medical education, which respects students’ independence, “Yale took a very brave, controversial, and consequential step,” he says, to “create medical students as adults, as grownups, as graduate students—as people who could have an active role in shaping what kind of doctors they became.”

Obstetrician honored for superb patient care

In his medical practice, Michael J. Paidas, M.D., associate professor of obstetrics, gynecology, and reproductive sciences, has a custom that lies behind such gestures are of the 19th century medical students and physicians. The late 1800s were a time of rapid change and growing uncertainty, as “rationalistic” systems that advocated theories such as bloodletting gave way to the experimentally grounded medicine that would dominate the 20th century.

The compassion and thoughtful-
Lung expert is president of venerable medical society

A leader at the School of Medicine is elected president of the prestigious Association of American Physicians

Jack A. Elias, M.D., chair of the Department of Medicine and a leading authority on the molecular basis of asthma and other pulmonary disorders, has been elected president of the Association of American Physicians (AAP) for 2010–2011.

One of the most prestigious and selective medical societies, the AAP was founded in 1885 by Sir William Osler, M.D., a major figure in medical history, and six other physicians for “the advancement of scientific and practical medicine.” Elias, the Waldemar Von Zedtwitz Professor of Medicine and chair of the Department of Medicine, studies the cellular and molecular biology of processes related to both injury and repair in the lungs in asthma, emphysema, pulmonary fibrosis, and acute lung injury. His research group has developed and studied genetic models of these diseases and translated findings from this work to their human counterparts, work that has validated therapeutic targets for new therapies for these conditions.

“To be president of the AAP is, needless to say, a very great honor,” says Dean and Ensign Professor of Medicine Robert J. Alpern, M.D. “This really attest to Jack’s reputation as one of the leaders of academic medicine, nationally and probably internationally.”

Elias became chair of Yale’s Department of Internal Medicine in 2006. He is board certified in internal medicine, pulmonary disease, allergy and immunology, and critical care medicine.

Elias’s research in pulmonary medicine has already led the field and has spanned all the way from very basic science to clinical research, where his basic science is leading to new treatments for pulmonary disease,” says Alpern. “As chair of internal medicine, he’s recruited a number of outstanding faculty. He has taken a department that was strong, and made it even stronger.”

Recent research by Elias and colleagues has shown that proteins involved in large jumps into asthma. In a 2007 article in the New England Journal of Medicine (NEJM), Elias and Geoffrey L. Chupp, M.D., associate professor of medicine and director of the Yale Center for Asthma and Airway Disease, reported that asthmatic patients have high levels of the protein YKL-40, which helps to regulate the immune response and causes lung inflammation associated with asthma.

In a 2008 NEJM article, Elias, Chupp, and colleagues showed that people who have a particular version of the YKL-40 gene are at greater risk of getting asthma. Their work has led to a better understanding of asthma, and provided new targets for the development of novel treatments for the disease. Elias received his undergraduate and medical degrees from the University of Pennsylvania and was an intern and resident at Tufts-New England Medical Center in Boston. He returned to the University of Pennsylvania as a senior resident and completed fellowships in both allergy and immunology and in cardiovascular-pulmonary medicine. He came to Yale in 1996 as professor and chief of pulmonary and critical care medicine.

Elias has been a member of the AAP since 1998 and a councilor since 2005. The group has about 1,000 active members as well as 300 emeritus and honorary members, including 33 members of the Yale faculty.

Each year, 60 individuals with outstanding credentials in biomedical science or translational biomedical research are elected to the association. Thomas M. Gill, M.D., the Humana Professor of Geriatric Medicine and professor of medicine and epidemiology at the School of Medicine, was elected to the AAP this year.

“Jack is a widely admired leader of medicine in America,” says Richard P. Lifton, M.D., Ph.D., chair and Sterling Professor of Genetics, professor of medicine, and the AAP’s current secretary. “He’s a terrific scientist, a passionate clinician, and a visionary chair of medicine. These qualities are all recognized in his role as president of the AAP. There are few like him in the country, and we are particularly fortunate to have him as chair of medicine at Yale.”

Globally minded orthopaedic surgeon is first Elihu Professor

Joint-replacement innovator’s medical education foundation has had a worldwide impact

On September 23, a festive crowd of colleagues, family members, and friends filled the Yale University Library for a reception to celebrate the appointment of surgeon Kristaps J. Keggi, M.D., as the inaugural Elihu Professor of Orthopaedics and Rehabilitation.

Many of those present had contributed directly to the creation of the new professorship, which was established with the combined contributions of a number of corporate and individual donors.

The professorship will serve as the cornerstone of a Joint Reconstruction Program being established at the School of Medicine as a center of excellence in clinical care, research, and medical education and training.

Keggi is internationally renowned for his work as an orthopaedic surgeon specializing in hip and knee replacements. In particular, he pioneered and has continually refined a minimally invasive approach to hip replacement that relies on a single “mini-incision” only eight to ten centimeters long, sometimes combined with one or two additional tiny incisions to accommodate surgical instruments. This approach causes less tissue trauma and less risk of infection than conventional approaches, and promotes quicker recovery, getting patients back on their feet more quickly.

Over the past three decades Keggi and colleagues he has trained at Yale and at Waterbury Hospital in Waterbury, Conn., have performed over 6,000 hip-replacement surgeries using this general approach, and have seen significantly fewer complications, shorter operative times, low blood loss, and a more appealing post-operative appearance.

In addition to his work in the operating room, Keggi has made a lasting contribution to medical education as the founder and president of the Keggi Orthopaedic Foundation (KOF). Since its launch in 1988, KOF has provided fellowships in advanced orthopaedic surgery at the School of Medicine and at Waterbury Hospital for more than 300 surgeons from the Baltic nations, Russia, and Vietnam.

A native of Latvia, Keggi came to the United States with his family when he was 15. “We had a dollar among us,” Keggi said in a 2009 interview, referring to his parents and three brothers. Sponsored by a church in Brooklyn, N.Y., the family lived in the parish house, and young Keggi, at age 15, worked as a bellboy at Brooklyn’s St. George Hotel. After attending three high schools in New York, Keggi ended up at the Bruns- wick School in Greenwich, Conn. From there he came to Yale College, graduating in 1955.

Keggi applied for admission to Yale School of Medicine, and was slightly intimidated to be interviewed by Dorothy M. Horsmann, M.D., a legendary faculty member whose research during the 1940s had provided a basis for the vaccine against polio. “Much to my surprise they accepted me,” Keggi has said. “My performance in organic chemistry hadn’t been that stellar.”

Named professorships: a lasting legacy

Yale School of Medicine is privileged to count among its faculty many of the finest physicians and scientists in the world, innovators who help to solve today’s most pressing medical issues through their research, teaching, and clinical care.

The most direct way to support outstanding faculty such as Kristaps Keggi, the new Elihu Professor of Orthopaedics and Rehabilitation profiled on this page, is through the establishment of endowed professorships, which supply a substantial and reliable flow of funds to support a professor’s teaching and research activities.

Equally important, when a current or newly recruited faculty member is appointed to a named chair, it signals Yale’s high regard for that scholar, our confidence in that individual’s intellect, creativity and drive, as well as our lasting commitment to his or her area of expertise. Endowed chairs thus serve as a powerful means for Yale School of Medicine to attract the best people and keep them working there.

The named professorship stands among the highest honors Yale University can bestow, and once appointed, a professor retains that position for the remainder of his or her career at Yale. The endowed professorship also ensures that the donor’s name and particular interests are advanced in perpetuity.

For information about how you can endow a professorship at Yale School of Medicine, contact Lancy Houx, assistant vice president for development and director of medical development, at (203) 438-8560.
The Medical Institution of Yale College was born

**Articles of Union** that bound Yale College and the Connecticut Medical Society together in the creation of the Medical Institution of Yale College were signed in 1810, but preparations delayed the school’s opening until November 1813. The first medical school in Connecticut and the sixth in the United States, the Medical Institution initially drew students primarily from Connecticut and the New England region. In the school’s earliest years, a faculty of five taught just five courses: Theory and Practice of Medicine; Surgery and Midwifery; Anatomy; Chemistry, Pharmacy, and Mineralogy; and Materia Medica (which mainly covered the use and preparation of medicinal plants).

For those who wished to practice medicine, the school offered a level of formal training that went beyond the traditional apprenticeship system, the most common form of medical training in America in the 18th and early 19th centuries. The Medical Institution also provided an educational solution for those unable or unwilling to train abroad or at one of the handful of other medical schools in the United States, the oldest of which were located in Philadelphia and New York.

A fledgling medical school gains a surer footing

The Medical Institution had many successes in its first decades, but by mid-century the increasing professionalization of medicine forced attendant changes in medical education. Yale, like many other American medical schools, struggled to make its curriculum requirements more stringent while maintaining student enrollment. The school continued to be run jointly by the Connecticut Medical Society (which had the deciding vote in terms of governance) and by Yale faculty (which included the professors of Yale College as well as the Medical Institution). In 1845, the election of Charles Hooker, M.D., as dean of the Medical Institution marked the first appointment of a dean at any of Yale’s graduate schools. Cortlandt Van Benschoter Creed, M.D., became the first African American to earn a medical degree from the Medical Institution when he graduated in 1857. In 1839, the school began to require a thesis for the M.D. degree, a requirement that is still in place today. (The oldest extant bound thesis written by a Yale medical student, entitled *De Calculo Vesicae*, is focused on bladder stones, and dates to 1837.)

The Civil War, and a new ideal in American medical education

During the Civil War, the staff of the *Knight U.S. Army General Hospital* in New Haven, under the direction of Pliny Jewett, M.D., an 1840 graduate of the Medical Institution, provided care for more than 25,000 wounded Union soldiers. The period following the war proved difficult for the Medical Institution, due not only to the costs wrought by America’s bloody internecine struggle, but also to the conditions arising from the changing landscape of American medicine. The school’s continued improvement of educational standards and intense competition with the growing number of medical schools in other states decreased student enrollments to the lowest point in its history. Debt mounted and financial problems were nearly constant. A lack of support from Yale College—both financial and institutional—seemed to augur oblivion for the medical school. But this period also marked the first steps toward the new ideal in American medical education—an ideal that rejected the old system of apprenticeship, embraced science rooted in the experimental method, and affirmed the importance of scientific research in medicine.

Major advances with the dawn of a new century

In 1886, Herbert E. Smith, M.D., began his second year as dean of the medical school (by then known as the Medical Department of Yale College). It was not an auspicious time to lead the school: Yale’s Medical Department had hit bottom in both student enrollment and financial resources. Having studied at the University of Heidelberg, Smith was a proponent of the German approach to medical education, with its heavy emphasis on research. During Smith’s years as dean (1885–1910), professor Arthur W. Wright, Ph.D., who in 1861 had been one of three Yale students to receive the first Ph.D. degrees conferred in the United States, published the first X-ray image in America. The Medical Department made educational requirements for admission more stringent, lengthened the course of study, and expanded the curriculum to more closely model the German example by emphasizing research and clinical instruction. With clinical education an increasingly important feature of medical education, Smith began the process by which the medical school became intimately connected with the New Haven Hospital (now Yale–New Haven Hospital), as it remains today.
1911–1935

The 1910 Flexner report, an unsparing assessment of medical education in America, caused upheaval in medical schools, with many struggling to adapt to the report’s recommendations or die. By 1920, nearly half of the 155 schools in North America were gone. At Yale, the report was instead the prelude to a vast transformation. The University made a financial commitment to its medical school unprecedented in its 100-year history. Under the visionary leadership of Dean Milton Winternitz, M.D., the School of Medicine refashioned itself and rose to national prominence. Winternitz outlined the school’s modern footprint and instituted the “Yale System” of clinical departments, making Yale one of only a few medical schools at the time to adopt the “full-time” system, thereby enabling researchers to develop a vaccine for the disease. With America’s entry into World War II, President Franklin D. Roosevelt instituted the Office of Scientific Research and Development (OSRD) to harness research in support of the Allied effort. With OSRD support, Louis S. Goodman, M.D., and Alfreed Gilman, Ph.D., were studying chemical warfare agents, and serendipitously discovered that nitrogen mustards used in chemical warfare were remarkably good at killing certain cancerous tumors. In 1943, this work led to the first intravenous chemotherapy treatment of a cancer patient, marking the birth of medical oncology.

Wartime spurs a national commitment to science

The Yale Poliomyelitis Study Unit (YPSU), formed in 1931, took a community-based approach to unraveling the causes of polio, then an epidemic disease. The YPSU’s John R. Paul, M.D., and James D. Trask, M.D., were the first to isolate poliovirus from living patients in several decades, which opened a new stage in polio research. Another YPSU member, Dorothy M. Horstmann, M.D., made the important discovery that the virus is present in the blood in the disease’s early stages, thereby enabling researchers to develop a vaccine for the disease. With America’s entry into World War II, President Franklin D. Roosevelt instituted the Office of Scientific Research and Development (OSRD) to harness research in support of the Allied effort. With OSRD support, Louis S. Goodman, M.A., M.D., and Alfreed Gilman, Ph.D., were studying chemical warfare agents, and serendipitously discovered that nitrogen mustards used in chemical warfare were remarkably good at killing certain cancerous tumors. In 1943, this work led to the first intravenous chemotherapy treatment of a cancer patient, marking the birth of medical oncology.

1936–1960

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1961–1985

The birth of Medicare, and the rise of molecular biology

Following World War II, federal funding for biomedical research exploded, and in 1965, the U.S. government’s Medicare program provided millions of Americans lacking health insurance with access to medical care. At the School of Medicine, a huge influx of grants from the National Institutes of Health, combined with a significant increase in clinical income, drove a massive expansion in which existing departments grew and new ones were formed. After Watson and Crick discovered the structure of DNA in 1953, medical research was rapidly and utterly transformed by molecular biology, which offered powerful new tools to identify cellular mechanisms at work in health and disease. In 1979, Joan A. Steitz, Ph.D., discovered snoRNPs (“snurps”), RNA-protein complexes in the cell’s nucleus that perform a crucial step in the transfer of RNA information into messenger RNA (mRNA). Besides illuminating how mRNA is spliced together to create proteins, Steitz’s research on snoRNPs has thrown new light on autoimmune diseases, and has helped to clarify how splicing lends extra versatility to genes, a process that is essential in the immune system.

1986–2010

Laying the groundwork for the medicine of tomorrow

The last 20 years have seen breathtaking advances in molecular biology and genetics—most notably the publication of the complete sequence of the human genome in 2001—achievements that promise to lead to important insights into human disease and new, targeted therapies. Today, the ability to quickly and inexpensively sequence complete human genomes heralds the dawn of a long-awaited “personalized” approach to medicine, in which a patient’s genetic makeup helps to determine optimal treatment strategies. Among the important recent discoveries of School of Medicine faculty is the 1997 publication by Arthur L. Horwich, M.D., and colleagues of the atomic structure of a molecular protein-folding machine that is essential to normal cell function. Faulty protein folding is a feature of neurodegenerative diseases such as Alzheimer’s disease. In 2007, Yale University acquired the 136-acre West Campus. With 20 buildings and over 1.5 million square feet of space, nearly a third of which is devoted to laboratories, West Campus will be home to five new scientific institutes, and state-of-the-art facilities for genomics, gene expression analysis, and drug discovery.
**Grants and contracts awarded to Yale School of Medicine**

**November 2009 – February 2010**

**Federal**

Karen Anderson, nih, Exploring Novel Targeting Strategies for Activated Proteinopathies, 4 years, $165,000 • Susan Baserga, nih, The Architecture and Function of Axon Needles Required for Bicoid Biogenesis, 4 years, $179,785 • Christopher Breuer, nih, Investigating the Mechanisms of Vascular Neointimal Formation in Multiple Sclerosis, 3 years, $2,068,750 • Arthur Broadus, nih, and the rhrp, Rule-Based Articulatory Chordophone Maintenance, 2 years, $409,612 • Paul Cleary, nih, National Research Initiative Prevention Research projects Proposed Multi-Level Intervention Planning Workshop, 1 year, $88,835 • Marie Egan, nih, and the Immune Response, 5 years, $2,068,750

**Barbara Ehrlich**

Department of the Army, Strategies to Prevent Chemotherapy-induced Peripheral Neuropathy, 2 years, $160,521 • Jack Elias, nih, et al., in Human Immunodeficiency and Asthmatic, 4 years, $1,650,000 • Endi Filipi, nih, Interactions between Acipimox phospholipids and Ion channels sculpts, 5 years, $2,068,750

John Hwa, nih, Pharmacogenetics of the Human Prostacyclin Receptor, 4 years, $665,649

Dewey Hyder, nih, Energies of Neuronal Populations by Janji, 5 years, $2,068,750 • Celina Juliano, nih, Determining p53 function using p53 in vivo imaging of Stem Cells in Hydra, 3 years, $54,187 • Susan Kaelin, nih, CBF1 repressor, 5 years, $34,268 • Thomas Kline, nih, Neurotransmitter Transporters, 5 years, $1,650,000 • Joseph Santos-Sacchi, nih, Struc- tural Biology of Na,K-ATPase, 3 years, $1,738,440 • Mark Shlomchik, nih, Mechanisms of Autoimmune Activation and Regulation by Innate Immunoreceptors, 5 years, $786,890 • Image Stream Analyzer, 1 year, $455,000 • Karen Smith, nih, The Role of Astacin in Cortical Interneuron Development, 4 years, $675,895 • Dieter Soll, nih, Expanding the Genetic Diversity with Phosphorylase and Phospho- tyrosine, 3 years, $555,997 • Jane Taylor, nih, Cogni- tive Dysfunction after Chronic Cocaine Use, 3 years, $1,251,950 • Susumu Tomita, nih, Metabotropic glutamate receptor signaling in Neuronal Automa- tatic Receptor Activity, 3 years, $2,068,750 Anthony Van den Pol, nih, Response Properties of hypothalamic acon neurons, 3 years, $1,810,155

**Non-Federal**

Vikki Burroughs, Burroughs Wellcome Fund, The Role of Membrane Neutrophil Receptors in infec- tion-associated Prostate Lactate, 1 year, $500,000

Kyung-Heup Ahn, narsad, Dissapar interactions and Psychos, 2 years, $95,910 • Emily Annell, American Foundation for Suicide Prevention, Personality Disorders and Suicidal Behaviors: A Prospective Study of Associations, Mediators, and Moderators, 3 years, $85,000

Xiaoxiao Bai, Epilepsy foundation of America, Neuroimaging Biomarkers of Network Dysfunc- tion in Childhood Absence Epilepsy, 3 years, $45,000 • Mounira Bashar, nimh, Implications of Clonal Changes in the Development of Depressive Behavior, 2 years, $600,000 • Diana Beards- ley, nih, Foundation, Fly Balance in Immune, Tremorothelynea, 1 year, $19,100 • Vinita Bhart- di, Washington University in St. Louis, Screening for Genetic Causes of Neonatal Ruptured Diaphragm, 1 year, $60,400 • Thomas Bilderer, nimh, Neuronal functions and Biochemical Pathways of Synaptic-Modulated Synaptic Orga- nizers, 2 years, $600,000 • Michael Bloch, narsad, Pilot Study of a Patient Neuronal Receptor Antagonist in the Treatment of Obsessive-Compulsive Disor- der, 2 years, $50,000 • Angeline Borderley, Med- night Endowment Fund for Neuroscience, Cogni- tive Deficits in Tuberous Sclerosis Complex, 3 years, $92,000 • Elizabeth Bradley, Avram Corpora- tion, Master in Healthcare and Hospital Adminis- tration Program, 2 years, $150,000 • Michael Braun, narsad, Role of the Cytoskeleton in the Formation of Cytoskeletal Mechanisms Induced by Cytokines and Inflammation, 1 year, $33,600 • Rosana Gonzalez-Galano, Physician Assistant Education Association, Putting Physician Assistants on the Map: Cep- troscopy analysis of Wireless informatics in Cardiac, 7 years, $70,000 • Bonnie Gould Rothberg, Am- bient Alliance, Management of Meniscal Metastasis in Kidney allin, 1 year, $60,000 • David Haffer, National Multiple Sclerosis Society, Collaborative Multiple Sclerosis Research Center Award, 5 years, $745,000 • University of California, San Francisco, A Hepatocyte Map for Multiple Sclerosis, 18 months, $150,000 • Raul Hambardzumyan, nih, Inhibition of Cytokine production in Melanoma, 9 months, $21,600 • Karteek Paruchuri, University of New Mexico, A Mouse Model of Type 1 Gaucher Disease, 1 year, $35,000 • John Rakic, narsad, The Neurogenesis, Neuroplasticity and the Immune Response in Autism, 2 years, $50,000 • John Slatkin, narsad, NRI Endowed Neuroimmune Training Program, 2 years, $150,000

Karen Anderson, nih, Teratogenicity of Cardiovascular Devices and Medicare Cost Growth, 3 years, $56,218

• Beth Darnay, nih, Multiple Sclerosis Research Center Award, 2 years, $60,000 • Susan Ehrlich, nih, Malignant Tumors of Pericyte Origin, 2 years, $1,650,000 • Ronald Duman, Hope for Depression Research Foundation, Influence of Isolation Stress on Cell Differentiation and Neuro- trophic Factor Signaling, 4 years, $140,000 • Andrew Epstein, University of Pennsylvania, Role of Inflam- matory Response and Disease Progression in Childhood Adenocarcinoma, 1 year, $25,000 • John Felgner, Insti- tute for OneWorld Health, Proposed Research to be Conducted in Preliminary Phase of the Joint Yale xXenP Project on Employment of Calicomi- cins as a Treatment for aids, 1 year, $50,000

• Joel Geller, Butler Hospital, Childhood Malnourish- ment and Risk, 3 years, $55,000 • John Giuliano Jr, Children’s Hospital Corporation, Overcoming Interleukin-10 (IL-10) Resistance in Acute Lymphoblastic Leukemia, 1 year, $245,000 • Renee Jurenka, nih, Lung Function and the Immune Response in Childhood Asthma, 6 months, $9,000 • Samantha Kahn, nih, The Development of a Novel CYP2C9 Probe, 1 year, $60,000 • Thomas Kline, nih, Neurotransmitter Transporters, 5 years, $1,650,000 • Joseph Santos-Sacchi, nih, Structural Biology of Na,K-ATPase, 3 years, $1,738,440 • Mark Shlomchik, nih, Mechanisms of Autoimmune Activation and Regulation by Innate Immunoreceptors, 5 years, $786,890 • Image Stream Analyzer, 1 year, $455,000 • Karen Smith, nih, The Role of Astacin in Cortical Interneuron Development, 4 years, $675,895 • Dieter Soll, nih, Expanding the Genetic Diversity with Phosphorylase and Phospho- tyrosine, 3 years, $555,997 • Jane Taylor, nih, Cogni- tive Dysfunction after Chronic Cocaine Use, 3 years, $1,251,950 • Susumu Tomita, nih, Metabotropic glutamate receptor signaling in Neuronal Automa- tatic Receptor Activity, 3 years, $2,068,750

There was a special touch in this year’s White Coat Ceremony, a traditional ritual in which mem- bers of the School of Medicine faculty present incoming medical students with physician’s coats to mark their entry into the profession of medicine. The Class of 2014, as the first class of the new Biomedical Sciences first-year program, received coats embroidered not only with their names, but bear- ing a patch with the school’s Bicentennial motif. Each new student also received a stethoscope, provided through a fund created by School of Medicine alumni. Serene Chen ’14, of Columbia, S.C., and her mother, Rika Chou, celebrated after the ceremony.
‘Exceptional creativity’ garners NIH award for two researchers

Tamas L. Horvath, D.V.M., Ph.D., chair and professor of comparative medicine, and Haifan Lin, Ph.D., director of the Yale Stem Cell Center, have received 2010 Pioneer Awards from the National Institutes of Health (NIH).

The Pioneer Awards have been given annually since 2004 to scientists of ‘exceptional creativity who propose pioneering—and possibly transforming—approaches to major challenges in biomedical and behavioral research.’

In contrast to other NIH programs, the Pioneer Award Program aims to support a very small number of applicants. Horvath and Lin were among 17 scientists to be honored this year, and they join just 81 other researchers who have received the Pioneer Award since its creation. Each researcher will receive a $2.5 million grant as well as additional laboratory support over five years.

Lin, also professor of cell biology, is a world leader in understanding the role that bits of genetic material called small RNAs play in stem cell biology.

Until fairly recently, it was believed that an organism could not pass on changes in gene expression to future generations unless the DNA sequence of that organism’s genome was somehow altered, usually by mutations. But in recent years, it has become clear that additional mechanisms, known as epigenetic factors, can directly interact with the genome to prevent or enhance gene expression even if the underlying DNA sequence remains unchanged.

Epigenetic processes have been implicated in congenital diseases, cancer, and autoimmune diseases, among others. With the new grant, Lin will study how small RNAs, a class of small RNAs discovered in his lab, guide epigenetic factors to specific points within the genome. He ultimately hopes to compile information on epigenetic effects of small RNAs in the first “functional epigenome map.”

Horvath, co-director of the School of Medicine’s recently launched Program in Integrative Cell Signaling and Neurobiology of Metabolism, is an expert on the effects of metabolism on higher brain functions. He has studied neuroendocrine aspects of neurodegenerative diseases, and his research has also provided insight into metabolic disorders such as obesity and diabetes—his lab was the first to provide evidence that the brain uses fat as fuel.

Horvath has proposed that a small set of cells in the brain’s hypothalamus known as AgRP neurons are master regulators of energy utilization in all the body’s tissues. With his Pioneer Award, he will study how AgRP regulation of the cellular energy metabolism of various tissues affects the health and longevity of those tissues, and thus the life span of the entire organism.

Perturbations in AgRP function could contribute to many of late-onset chronic diseases, such as Alzheimer’s and Parkinson’s disease, diabetes, cardiovascular disorders and cancer.

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After earning his medical degree in 1959, he completed residencies at the Roosevelt Hospital in New York and at Yale. Keggi then served in a U.S. Army MASH unit in Vietnam, as chief of orthopaedic surgery at Third Surgical Hospital. His treatment of wounded soldiers there prompted him to develop novel techniques for the treatment of traumatic injuries.

He returned to Yale as an assistant professor in 1966 to work in orthopaedic trauma surgery and emergency care. Keggi was appointed clinical professor of orthopaedics and rehabilitation in 1989 and became professor in the Department of Orthopaedics and Rehabilitation in 2008.

At Yale, Keggi took part in the launch of both the Physician Associate Program and the trauma program in the Department of Surgery. He also helped establish the Keggi-Berzins Latvian Baltic Studies Fund at Yale University, as well as the Baltic Internship Program for the Yale University Library’s Slavic and East European Collections.

In the course of his long career, Keggi has earned many honors. He is a six-time winner of the Yale Orthopaedic Teaching Award. In 2005, he received the George Herbert Walker Bush Lifetime of Leadership Award from Yale University Athletics. He is the recipient of Latvia’s Karlis Ulmanis Medal, the Latvian Order of the Three Stars, and the Knights of Lithuania of Friends of Lithuania Award. He has been president of the Yale Fencing Association and a member of the Yale Athletic Federation.

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for cancer and other diseases, was acquired last year by Swiss pharmaceutical giant Roche from the Syndetix company.

In gratitude to Yale for helping him start his research career, Boyer gave the center that was then named in honor of business magnate and philanthropist Betty Anlyan. The center was later expanded to form the Betty Anlyan Research Building and to add the Anlyan Center for Basic and Translational Science in October 2009, was named in honor of business magnate and philanthropist Betty Anlyan. The center was later expanded to form the Betty Anlyan Research Building and to add the Anlyan Center for Basic and Translational Science.
Throughout the School of Medicine’s 200-year history, innumerable individuals have helped shape the institution. But a handful of people have actually built the school in an almost literal sense by providing major gifts to the medical school to construct the landmark buildings that today bear those donors’ names.

**JOHN WILLIAM STERLING**

The Sterling Hall of Medicine, dedicated in 1902, is named in honor of philanthropist John William Sterling (1844–1918), a New York City corporation attorney who graduated from Yale College in 1864, amassed a substantial fortune advising the likes of Standard Oil and the National City Bank of New York, and left the bulk of it, $8 million, to Yale University.

In his will, Sterling requested that some of the money be used to build “at least one enduring, useful, and architecturally beautiful edifice.” His wish was fulfilled, and then some: today, seven campus buildings carry the Sterling name, along with the professorships that are among Yale’s highest academic honors, and numerous scholarships, programs, and collections.

A graceful Renaissance Revival structure at 333 Cedar Street, Sterling Hall was funded initially with about $1.3 million from the Sterling bequest. In a 1991 history, the late Yale neurosurgeon William F. Collins Jr., M.D., called it the medical school’s “geographical and spiritual center.”

The sprawling building, which included administrative offices, a library, and state-of-the-art laboratories, helped bring most of Yale’s far-flung medical operations under one roof in a location close to New Haven Hospital.

**EDWARD HARKNESS**

Even though the Brady Laboratory included dormitories after it was expanded in the late 1920s, by mid-century the demand for student housing greatly exceeded the available space. In an address to medical school alumni in 1953, Yale University president A. Whitney Griswold, Ph.D., noted, “students [were] scattered all over the city, in makeshift housing arrangements that imposed an unfair handicap on our medical school in competition with other leading schools.”

In the same speech, Griswold announced a solution to the housing dilemma: a $2.5-million grant to build Edward S. Harkness Memorial Hall, a high-rise structure that would house at least 260 students.

Harkness (1874–1940), a member of the Yale College Class of 1897, was an American attorney and philanthropist whose father, Stephen, made his fortune in tobacco companies. Edward Harkness used his inherited wealth to endow numerous non-profit organizations, from Columbia-Presbyterian Hospital to the Metropolitan Museum of Art. Many colleges also benefited from Harkness grants, and the Yale University campus was utterly transformed by the millions of dollars he and his mother, Anna, provided to build the University’s residential college system.

The grant for the medical school dormitory came through the Harkness-endowed Commonwealth Fund, and the effect was equally transformative.

When it was completed in 1955, E.S. Harkness Hall, which provided housing and dining facilities for single women and men as well as married students, would “provide those essential amenities that take the curse off institutional living and promote the social relationships in which true education flourishes,” said Griswold.

**HERBERT BOYER**

Four decades later, the Boyer Center for Molecular Medicine, with a distinctive César Pelli-designed façade that follows the curve of Congress Ave., opened its doors to an interdisciplinary cadre of researchers using the new tools of molecular biology to understand a wide array of human disorders, from cancer to heart disease to developmental defects. The new center, dedicated in 1991, was named for Herbert Boyer, Ph.D., a scientist who was a postdoctoral fellow at the School of Medicine from 1963 to 1966. During his days at Yale, which Boyer recalls as a happy and exciting time, he started to develop a genetic engineering technology to splice genes from one organism into another. Several years later, as a professor at the University of California at San Francisco (UCSF), Boyer and colleagues patented this methodology, known as recombinant DNA, and founded, with about a thousand dollars, a company called Genentech. UCSF would eventually reap more than $50 million in royalties from this patent; Genentech, which used recombinant DNA techniques to mass-produce human insulin and create treatments...