Experts on mental illness, multiple sclerosis are newest chairs

School of Medicine names leading researchers to head clinical neuroscience teams

Summer brought the appointment of two renowned physician–scientists as chairs of the School of Medicine’s departments of psychiatry and neurology. John H. Krystal, M.D., an internationally recognized expert on the neurobiology and treatment of schizophrenia, alcoholism, depression, and post-traumatic stress disorder (PTSD), was named chair of the Department of Psychiatry and chief of psychiatry at Yale-New Haven Hospital (YNHH), effective July 1. David A. Hafler, M.D., a leader in the worldwide effort to better understand the molecular basis of multiple sclerosis (MS), was named chair of the Department of Neurology and chief of neurology at YNHH. Hafler’s appointment was effective September 1. Krystal, the Robert L. McNeil Jr. Professor of Translational Research, is director of the Center for the Translational Neuroscience of Alcoholism, funded at Yale by the National Institute on Alcohol Abuse and Alcoholism. He also heads the Clinical Neuroscience Division of the Veterans Affairs National Center for Post-Traumatic Stress Disorder and the Veterans Affairs Alcohol Research Center at Yale, both located at the VA Connecticut Healthcare System (VACHS) in West Haven, Conn.

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Three decades at the helm, and a legacy

Venerable director of Yale's M.D./Ph.D. program makes a $1 million gift

Launched in 1969 and continuously supported by competitive grants from the National Institutes of Health (NIH) since 1973, the School of Medicine’s Medical Scientist Training Program (MSTP)—known informally on campus as the M.D./Ph.D. Program—is one of the oldest and most successful of its kind. And for 29 years of the last four decades, Professor of Cell Biology James D. Jamieson, M.D., Ph.D., has been the program’s director.

“I believe I have the distinction of being the oldest living M.D./Ph.D. program director in the world,” says Jamieson, who recently added to this legacy of leadership a $1 million gift to fund scholarships for Yale M.D./Ph.D. students and to help support programmatic activities.

Unlike many of its counterparts at the School of Medicine’s peer institutions, until recently Yale’s M.D./Ph.D. program hasn’t enjoyed the benefits of a substantial privately-funded endowment. That situation began to change in 2006, when an anonymous donor bequeathed $2 million of his estate to sustain and expand the program. Jamieson has enhanced this foundation with his new donation, which establishes the James D. Jamieson and Family M.D./Ph.D. Scholarship Fund. Jamieson’s gift comes at a time when Dean Robert J. Alpern, M.D., hopes to increase the program’s yearly enrollment from about 12 students to 20, a number that is comparable to that seen at other major medical schools.

The aim of Yale’s M.D./Ph.D. Program, one of 40 nationwide supported by competitive grants from the National Institutes of Health (NIH) since 1973, Yale’s reputation as one of the nation’s premier institutions for M.D./Ph.D. programs is borne out by the numbers.

“In preparing for our eighth five-year competitive renewal with the NIHMS, we contacted 222 of the 235 graduates. Twenty-seven Jamieson, page 7

Emergency Medicine rises to independent academic department

Emergency physicians at Yale gained new status on July 1, when the Yale Corporation elevated the Section of Emergency Medicine, part of the Department of Surgery since 1981, to a full-fledged academic department.

Recognizing the section’s academic excellence, a medical school faculty committee had unanimously recommended that the Corporation establish the new Department of Emergency Medicine, which will be able to recruit its own faculty.

Gail D’Onofrio, M.D., M.S., who has served as section chief since 2005, has been named chair of the new department. D’Onofrio also serves as chief of adult emergency services for Yale-New Haven Hospital, where faculty and residents are responsible for nearly 100,000 patient visits per year.

An emphasis on screening and intervention for emergency patients sets Yale’s department apart from many of its peers. D’Onofrio sees hospital emergency departments not merely as a place to serve patients’ immediate needs, but also as venues where public health

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Online: Yale Netcasts

Additional audio content for many articles in Medicine@Yale is available on iTunesU, or by pointing your Web browser to medicinenetcasts.org
Making sense of autism

Yale expert’s role in refining diagnosis has advanced autism research worldwide

These days, autism is a hot topic, but the disorder’s high profile is a relatively recent development, says Fred R. Volkmar, M.D., director of the School of Medicine’s Child Study Center (CSC). Oftentimes during the 1980s, when he would tell people he worked with autistic children, “they’d say, ‘Oh, artistic children. We need more childhood artists,’” Volkmar recalls with a chuckle.

Volkmar can claim some credit for the far greater public awareness and understanding of autism seen today. Between 1990 and 1994, he spent much of his time coordinating a nationwide trial to refine the formal classification of autism that appears in DSM-IV-TR, the most recent revision of the American Psychiatric Association’s Diagnostic and Statistic al Manual of Mental Disorders, the bible of psychiatric diagnosis. The data-based trial involved more than 20 sites and the evaluation of about 1,000 people by more than 100 raters, and was funded by both the MacArthur Foundation and the National Institutes of Health (NIH).

A native of Southern Illinois, Volkmar, Irving B. Harris Professor of Child Psychiatry, Pediatrics, and Psychology and CSC director since 2006, came to Yale in 1980 after graduate training at Stanford Medical School.

It was a propitious time. 1980 was the year in which autism was first formally recognized as a diagnosis in the DSM. Yet, despite the four decades that had elapsed since John Hopkins psychiatrist Leo Kanner, M.D., pub -lished a seminal description of autism in 1943, the disorder was still poorly understood, and it was frequently misdiagnosed as mental retardation or schizophrenia. Volkmar set out to provide the world with a clearer picture.

“The thing that’s so compelling about childhood autism is that these are children who seem to live in their own world, they’re not so socially connected to other people,” says Volkmar, “but they’re also paying a lot of attention to the nonsocial world. Why that paradox?”

As defined in the DSM-IV-TR, autism is actually a spectrum of conditions that fall along a continuum. At one end is full-blown autism, which features major language difficulties, repetitive, sometimes self-destructive behavior, virtually complete social isolation, and profound intellectual disability. At the other is Asperger’s syndrome, in which social dis ability accompanies verbal fluency and normal or high intelligence. In between is the less well-defined diagnostic realm of PDD-NOS, “pervasive developmental disorders, not other wise specified.”

For many psychiatric disorders, diagnostic standards in the DSM do not align with its international counterparts, the World Health Organiza tion’s International Classification of Diseases (ICD). “We took a unique approach to this goal,” Volkmar says. “We believed this com patibility would stimulate research. In fact, research has exploded over the last five to 10 years.”

Volkmar continues to focus on sharpening the diagnosis of autism. In a January paper in the Journal of Child Psychology and Psychiatry, Volkmar and CSC colleagues review the changes in our understanding of autism and its diagnosis since the publication of DSM-IV-TR. They present a plan for the next 10 years, emphasizing the diagnosis of young infants and more cognitively able adults, and ways to utilize findings from the latest genetic research.

Under Volkmar’s direction, the CSC, an NIH-designated Autism Center of Excellence, continues to cement its reputation as a world leader in autism research (see related story, p. 3).

“I think there’s going to be more agreement,” Volkmar says. “The diagnostic part is kind of settled, and we can work on other things. The government is putting more money into research, and parents are willing to come out and advocate for it.”

To honor his mother and fight melanoma, a rower shows his mettle

When his mother, Kathie, died from melanoma in 2001, Paul Ridley, of Stamford, Conn., resolved to raise money for research and patient care at Yale Cancer Center (YCC), and he took a unique approach to this goal.

“There are easier ways to raise money, but it happened to be a rower,” says Ridley, who rowed crew as an undergraduate at Colgate University. On March 29, Ridley completed an 88-day, 3,500-mile solo row across the Atlantic Ocean, becoming just the third American—and, at 23, the youngest—to row across the Atlantic alone.

Ridley’s Odyssey, “Row for Hope” (www.rowforhope.com) began January 1 in the Canary Islands, as he climbed into a narrow, 400-pound custom-built fiberglass boat, determined to row 10 to 15 hours a day to reach the shores of the Caribbean island of Antigua and to eventually raise $500,000 for YCC, his partner in the effort. Although Ridley’s mother wasn’t treated at YCC, the $100,000 raised so far by his feat will fund work directed by Associate Professor of Medicine Mario Sznol, M.D., who specializes in cancer immunotherapy for melanoma and renal cell carcinoma.

“We’re very honored that he came to us,” says Sznol, “and we’ll work very hard to make sure his incredible effort is put to good use.”

Through his work at Yale’s Child Study Center, in the early 1990s, Fred Volkmar was instrumental in building an international consensus around the diagnosis of autism and related disorders. With Lisa Wiener, he has just published a new book, A Practical Guide to Autism: What Every Parent, Family Member, and Teacher Needs to Know (John Wiley & Sons, 2009).

Immunobiologist earns new award for top young scientists

Susan Kaech

Associate Professor

Robert J. Alpern, Ensign Professor of Medicine

The award, which includes a research grant of $1.5 million over six years, will support Kaech’s research on memory T cells, immune system cells that provide long-term protection by “remembering” pathogens that have previously caused infection. When so-called naïve T cells encounter a new pathogen, they become activated and multiply into millions of effector T cells. These effector cells are armed with weapons that potentially inhabit the replication and spread of the pathogen, or directly kill cells in the body that have already succumbed to infection. When the infection subsides, most effector T cells die, but a small number (3 to 10 percent) survive as memory T cells, providing continuing protection against reinfection by the same agent. It is this process that underlies the immunity seen after common infections such as chickenpox or that provided by most vaccines used today.

By using genetic techniques to better understand how and why this small proportion of effector cells becomes memory T cells, Kaech hopes to find ways to develop more effective vaccines.

“I feel extremely fortunate that my lab’s contributions have been recognized so highly by my colleagues,” says Kaech. “This is a very exciting time for the field, and my lab is well positioned to make significant progress in understand ing the molecular mechanisms that regulate memory T cell development. This award will allow us to work faster and to pursue novel and riskier ideas that will hopefully lead to several interesting discoveries.”

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Oarsman Paul Ridley paid a visit to the construction site of the new Smilow Cancer Hospital after completing his transatlantic voyage to benefit Yale Cancer Center.

Kaech is instrumental in the research that led to discoveries that have significant implications for the treatment of cancer and other diseases. Her research is aimed at revealing the mechanisms that regulate memory T-cell development, which is key to the development of vaccines. Kaech, who is an associate professor of medicine, is the latest recipient of an Early Career Scientists award from the Howard Hughes Medical Institute (HHMI). The award is one of the most prestigious in the field and is given to researchers who have made significant contributions to cancer research.

Kaech’s research has focused on understanding the role of memory T cells in immune responses. She has shown that memory T cells can contribute to the creation of long-lasting immunity against cancer and other diseases. Her work has led to the development of new strategies for cancer immunotherapy and the design of improved vaccines.

Kaech earned her Ph.D. in immunology from the University of Pennsylvania and completed her postdoctoral training at the National Institutes of Health. She joined the faculty at Yale School of Medicine in 2006 and quickly rose through the ranks to become an associate professor. In 2018, she was named an HHMI Early Career Scientist, an award that recognizes exceptional young scientists who are making significant contributions to the field of medicine.

Kaech’s research has been supported by grants from the National Cancer Institute, the National Institute of Allergy and Infectious Diseases, and the American Society for Clinical Research. She has also received numerous awards and recognitions for her work, including the American Society for Clinical Investigation’s Young Investigator Award and the American Association for Cancer Research’s Young Investigator Award.

Kaech’s research has been influential in the field of cancer immunology and has led to the development of new strategies for cancer immunotherapy. Her work has been recognized with numerous awards, including the American Society for Clinical Investigation’s Young Investigator Award and the American Association for Cancer Research’s Young Investigator Award.

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In Yale autism research, the eyes have it

An experiment’s unexpected result leads School of Medicine scientists to fresh new insights on autism

Attaining a perplexing result in an experiment can be frustrating for scientists, but sometimes unexpected findings lead researchers to a place of far greater clarity. Such is the case with a recent Yale study of children with autism spectrum disorder (ASD), which was inspired by a puzzling result obtained in earlier experiments. Published in May in the journal Nature, the study provides researchers with rich new ground to explore in the quest to understand this mysterious and socially debilitating disorder.

Investigators at the School of Medicine’s Child Study Center (CSC) have long been in the vanguard of research on ASD, a developmental disability that emerges in early childhood marked by deficits in social interaction, problems with verbal and nonverbal communication, and repetitive, stereotyped behaviors.

Early behavioral and educational interventions are known to significantly improve the lives of children with ASD, but limitations of present diagnostic techniques mean that many children are not diagnosed until age 3 or after. For the past decade, Yale researchers led by Ami Klin, Ph.D., Harris Professor of Child Psychology and Psychiatry and director of the CSC’s Autism Program, have strived to change this picture, using innovative technology to search for signs of ASD at its very earliest stages.

With support from the Simons Foundation, the National Institutes of Health, and the advocacy group Autism Speaks, Klin and Warren Jones, Ph.D., a CSC neuroscientist, have pioneered the use of eye-tracking technology, which allows researchers to monitor precisely where a person is looking at any given time, in autism research. They have developed a novel apparatus that allows them to track eye movements remotely, while concealed from research subjects, which is particularly useful when working with infants and toddlers.

Using eye-tracking, Klin and Jones have discovered that children and adults with autism view the world in quite different ways than typically developing subjects, often ignoring important sources of information that could help them build bridges to the social world.

One realm in which eye-tracking reveals sharp differences between children with ASD and other children is biological motion, a term scientists use to describe the distinctive manner in which living things move. A sensitivity to and preference for viewing biological motion over other types of movements (of machinery, for example) can be observed in a broad range of species, from newly hatched chicks to monkeys, and it can be demonstrated in human infants as young as 2 days old. It is believed that this inclination is innate, even though most of these sound/motion correlations were far subtler than the hand-clapping seen in the pat-a-cake animation. As a final test of the idea that AVS may be more salient to children with ASD than biological motion, the researchers designed two new point-light animations in which instances of AVS were plentiful. They then created a

One child’s unexpected performance in an experiment has led autism researchers Ami Klin (left) and Warren Jones to a new understanding of the disorder.
June 15: Yale University’s Maurice R. Greenberg International Conference Center was the setting for STRATEGIC PROBLEM SOLVING IN GLOBAL HEALTH, the first annual conference of the Global Health Leadership Institute (ghli). The ghli, a collaborative effort between the Yale School of Public Health and the Whitney and Betty MacMillan Center for International and Area Studies at Yale, works with leaders in numerous countries to improve the performance of health systems. Elizabeth H. Bradley, Ph.D., founder of the ghli and professor at the School of Public Health, invited representatives from six countries that have made exceptional improvements in health systems in recent years despite resource obstacles—Ethiopia, Ghana, Liberia, Mexico, Rwanda, and Singapore—to attend the conference.

April 18: The 30th annual LA CASSA MAGICA, a black-tie gala to benefit Yale Cancer Center (YCC), was held at The Belle Haven Club in Greenwich, Conn. The event raised $213,000 to support clinical trials of cancer treatments at the new Smilow Cancer Hospital, which opens its doors in October. 1. Broadcaster and YCC board member Paula Zahn was the event’s host. 2. (From left) Amanda Adams with YCC board member and gala chair Kathryn Anderson Adams. 3. Margery Baker-Riker and Stephen Riker. 4. (From left) Laura Pappano; Thomas J. Lynch Jr., M.D., YCC director and physician-in-chief at Smilow Cancer Hospital; Richard L. Edelson, M.D., chair and Aaron B. and Marguerite Lerner Professor of Dermatology, and former YCC director; and Ruth Edelson.

Out & about

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April 28: The 30th annual SETON ELM AND IVY AWARDS were given in the President’s Room at Yale's Woolsey Hall. The awards, which honor people and organizations that further partnership between New Haven and Yale, were established with the support of Fenmore Seton, a 1938 Yale College alumnus, and his wife Phyllis, who created an endowed fund at the Community Foundation for Greater New Haven in 1979. Elm Awards are given to members of the New Haven community, and Ivy Awards are given to Yale staff, faculty, and students. 1. Erin Lavik, Sc.D., associate professor of biomedical engineering and co-organizer of Science Saturdays, a series of weekend presentations by Yale scientists that bring the excitement and passion of research to “kids of all ages” in New Haven. 2. Michael Ma and Sachin Shah of the School of Medicine’s Class of 2011, organizers of this year’s Yale Health Professional Schools Annual Hunger and Homelessness Auction, which raised $32,000 for New Haven-area charities in 2008. 3. New Haven Mayor John DeStefano Jr. (left) and Bruce Alexander (right), vice president for New Haven and State Affairs and Campus Development at Yale, present an Ivy Award to Forrester A. Lee, M.D., assistant dean for multicultural affairs and professor of medicine at the School of Medicine, is a leader in the Hill Regional Career High School partnerships with Yale and in local celebrations of African-American history.

June 23, 24: The Yale Center for Dyslexia & Creativity (ycdc) held its FIRST ANNUAL EDUCATORS’ SYMPOSIUM. 1. (From left) ycdc Co-Director Bennett A. Shaywitz, M.D., the Charles and Helen Schwab Professor in Dyslexia and Learning Development; visionary educator Audrey G. Ratner; ycdc Co-director Sally E. Shaywitz, M.D., the Audrey G. Ratner Professor in Learning Development. 2. Conference participant Jennifer Sheridan of the Yale Divinity School’s Class of 2009, visits an exhibit of assistive technology. 3. Linda Koch Lorimer, J.D., vice president and secretary of Yale University, presented the conference’s closing keynote address.
At-home visits from Minding the Baby improve family life

Linda C. Mayes, M.D., likens her role in the School of Medicine’s Minding the Baby initiative to that of a matchmaker. In 2002, with the goal of establishing a program aimed at combating early maternal depression, Mayes introduced Lois S. Sadler, Ph.D., to Arletta Slade, Ph.D.

Thinking they would make a great team, she paired Slade, who was doing influential research on “parental reflective functioning”—parents’ capacity to understand and express their child’s mental state by observing the child’s behavior—with Sadler, an associate professor at Yale School of Nursing and the medical school’s Child Study Center (CSC), who had worked extensively with young pregnant and adolescent parents.

Now, nearly eight years later, the community-based program, which affords underprivileged mothers nursing and mental health services during pregnancy and after childbirth, has seen such success that it is positioned to be replicated in other local communities.

The clinical staff of Minding the Baby, a collaborative effort between Yale and the Fair Haven Community Health Center (FHCC) in New Haven, includes two part-time social workers and a full-time nurse practitioner, who work with young mothers in their homes.

In designing the program, “we worked from a very well-known model called the Nurse-Family Partnership,” says Sadler, referring to a program developed by David Olds, Ph.D., and Harriet Kitzman, Ph.D., R.N., in which vulnerable mothers are assigned home-visiting nurses. Slade, professor of clinical and developmental psychology at City University of New York-City College and visiting research scientist at the CSC, and her team sought to expand on this model by adding a mental health component.

To that end, they turned to the work of pioneering infant-parent psychotherapists, Alicia F. Lieberman, Ph.D., of the University of California, San Francisco, and Christoph Heinicke, Ph.D., of the University of California, Los Angeles.

In the Minding the Baby program, mothers are taught to pay close attention to, and to respond to, a child’s emotional state, and in particular, the baby’s “needs, their desires, their emotions, their wants,” says Sadler, who is also assistant dean for academic affairs at the School of Nursing. The goal, she says, is “to develop and test this intervention and evaluate the outcomes for high-risk families.”

The program’s efficacy is gauged by measuring a number of factors and comparing results from families in the program to those from control families who are not provided with home visitation. Factors being measured include the base rate of security for infants (71 percent in the intervention group, which is considered high and indicates that babies receiving the intervention are more securely attached than babies in the control group) and the base rate of “disorganized attachment” (28 percent, which is low and indicates that babies receiving the intervention are at lower risk for later psychopathology and other maladaptations). Other positive results include a high retention rate of families in the study (90 percent); also, rates of breast-feeding that are well above the national average for high-risk populations. Rapid subsequent pregnancies and referrals to child protective services are also much lower among families in the program than among control families.

Keeping needs of young families in mind

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“...it’s helping parents to become more reflective about their own psychology as a parent, and their baby’s own emotional life,” Mayes says. “One can teach a lot of clinicians to think in that way by teaching them the basic principles and then letting people go put those principles in place in ways best suited to their individual practice settings.”
percent are presidents and 15 percent are in academic settings. About 8 percent are in clinical departments held research grants, as do 96 percent of those with appointment in basic science departments," recounts Jamieson, adding that graduates of the program have published over 8,000 papers in the field.

"The bottom line," says Jamieson, "is that this says success.

Students who enter the program come from esteemed undergraduate institutions, often from departments of residency programs when they finish, says Jamieson, and while at Yale, they are able to flourish in a research environment that boats 16 Howard Hughes Medical Institute investigators and the highest amount of NIH grant funding per faculty member in the nation.

But in addition to the direct advantages for students enrolled in the program, Jamieson argues that the program’s high profile in the traditional NIH and in the so-called ‘funding bar’ for Yale medical students as a whole, providing them with a richer educational experience.

As examples, he cites an upper-level course on the molecular basis of disease taught by eminent scientists. Originally created for M.D./Ph.D. students, this course now draws an equal number of M.D. students with an interest in basic research.

In 1996, a young bench scientist working with the legendary cell biologist and Nobel laureate George E. Palade, M.D., at the Rockefeller University and at Yale, Jamieson conducted in-situ research on the secretory cells of the pancreas that laid the foundation for understanding the function of the Golgi complex, the central processing and sorting organelle for the secretory pathway in all cells.

When not teaching or helping to shepherd Yale’s M.D./Ph.D. students through the demands of classes, research, and clinical rotations, Jamieson, a native of British Columbia, can be found abroad his 25-foot sailboat, a 42-foot sloop—"the name is an anagram coined by his then-5-year-old daughter Anne in honor of Cynthia (Jamieson’s wife), Laura (Anne’s younger sister), and Anne herself. "

YaleNetcast 'Fast-tracking New Discoveries to Help Alzheimers'
Diabetes expert is appointed inaugural Cowgill Professor

Gerald I. Shulman, M.D., Ph.D., an internationally known diabetes researcher, has been named the first George R. Cowgill Professor of Physiological Chemistry.

Shulman's research is aimed at understanding the cellular mechanisms of insulin resistance in the liver and muscle in the pathogenesis of type 2 diabetes, and the benefits of exercise in the management of the disease. His laboratory pioneered the use of magnetic resonance spectroscopy and other noninvasive techniques to study complex cellular pathways that lead to insulin resistance in human beings. His findings have led to the discovery of a novel mechanism involving alterations in intracellular fat metabolism as the major cause of insulin resistance in liver and muscle.

A professor of medicine and of cellular and molecular physiology, Shulman has been a Howard Hughes Medical Institute investigator since 1997. Shulman is the recipient of the 2008 Stanley J. Korsmeyer Award from the American Society for Clinical Investigation; the Bristol-Myers Squibb Freedom to Discover Award; the Novartis Award in Diabetes; the American Diabetes Association’s Outstanding Scientific Achievement Award and Distinguished Clinical Investigation Award; the National Institute on Aging Diabetes Foundation’s Diabetes Care Research Award; the Naomi Berrie Award for Outstanding Achievement in Diabetes Research from Columbia University; and an Outstanding Investigator Award from the American Federation for Clinical Research.

Leading geriatrics researcher is Humana Foundation Professor

Thomas M. Gill, M.D., newly named the Humana Foundation Professor of Geriatric Medicine, is a leading authority on the epidemiology and prevention of disability among older persons. Gill, co-director of the Yale Program on Aging, focuses on understanding the causes of functional decline and disability among community-living older persons, and on developing strategies to forestall the onset and progression of disability among at-risk elders.

In 1997, Gill embarked on an ambitious study known as the Precipitating Events Project. Since then, Gill and his team have overturned previous views about chronic disability among the elderly and revealed that older Americans surmount much physical setbacks with remarkable resiliency, and that functional decline can be prevented through targeted preventive measures.

In 2006, the National Institute on Aging (NIA) recognized Gill’s accomplishments with a $5.2 million Merit award that allowed him to follow his study group for several more years.

Gill’s other research interests include the epidemiology and prevention of bathing disability and the epidemiology of frailty. He is a currently a investigator, with primary responsibility for assessments, for two large, NIA-sponsored multisite clinical trials. Gill’s mentorship in disability and disease disorders has been supported for the past seven years by a Midcareer Development Award from the NIA.

At Yale, Gill is also the director of the Research Career Development Core at the Claude D. Pepper Older American Independence Center, director of the Section of Geriatrics of the Center for Disability and Disabling Disorders, and co-director of the Yale Fellowship in Geriatric Medicine and Clinical Epidemiology. He received his research training in clinical epidemiology as a Robert Wood Johnson Clinical Scholar at Yale and joined the faculty in 1994 after completing an additional year as a geriatrics fellow, and subsequently competed successfully for an NIA Academic Award, the Paul Beeson Physician Faculty Scholars in Aging Research Award, and the Robert Wood Johnson Generalist Physician Faculty Scholar Award.

For his professional contributions, Gill has been honored with the 2001 Outstanding Scientific Achievement for Clinical Investigation Award from the American Geriatrics Society, the 2009 Ewald W. Breuer Research Award in the Biomedical Sciences, and election to American Society of Clinical Investigation and Interurban Clinical Club.

Emergency Medicine

from page 1

services that improve overall health can be provided to patients in their local access to care and fall through the cracks of the health care system. “Emergency physicians are well-trained in emergency medical and trauma care. That’s what we’re here for. But we really have a bigger responsibility than that,” says D’Onofrio, who has published extensively on substance abuse and women’s health interventions in emergency department settings.

Department faculty do research on prehospital care, diagnostic ultrasound, and simulator training for residents. The department boasts three board-certified toxicologists, an active involvement in global health projects, and funding to train 13 residents a year, an unusually large number.

Emergency medicine is a relatively new specialty, with the first residency founded in 1970 and board certification instituted in 1979. It has achieved full academic departmental status at 76 medical schools nationwide, and is a popular discipline among medical students, with 149 programs in the United States training over 1,400 new residents yearly. D’Onofrio, who began her career as a nurse and taught Boston’s first advanced cardiac life-support classes to physicians, is one of only five female academic emergency medicine department heads in the country. She has aimed for departmental status for the section since taking over as chief in 2005, but credits her colleagues’ “phenomenal” research in helping her to make the case.

“When you look at why we’re great, it’s the depth of our faculty,” D’Onofrio says.

Immunobiologist is named Eugene Higgins Professor

Peter Cresswell, Ph.D., the newly designated Eugene Higgins Professor of Immunobiology, has spent most of his career unraveling some of the mysteries of the human immune system.

Cresswell’s research focuses on the molecular mechanisms of antigens presented by fragments of proteins from viruses, bacteria and other disease-causing organisms bind to the Major Histocompatibility Complex, a family of molecules on human cells during an infection. These molecules are recognized by T lymphocytes and are critical for making effective immune responses to infectious agents. His laboratory is also investigating the antiviral mechanisms of proteins inducible by Type 1 and Type 2 interferons. One such protein, viperin, mediates resistance to infection by influenza virus and human cytomegalovirus.

Cresswell, also professor of dermatology and cell biology, has been a Howard Hughes Medical Institute investigator since 1991, when he joined the Yale faculty. The Yale researcher earned undergraduate degrees and master’s and doctorates at the University of Newcastle upon Tyne and his Ph.D. at the University of London. He is a postdoctoral fellow at Harvard University before joining the faculty at the Duke University Medical Center in 1997, where he taught until his appointment as Yale’s first visiting scientist at the MRC Cellular Immunology Unit at the Sir William Dunn School of Pathology at the University of Oxford in 1981, and was elected Newton-Abraham Professor and a Fellow of Lincoln College, Oxford, during a second visit in 2007. Cresswell has earned numerous honors for his work, including the 1993 Rose Payne Distinguished Scientist Award from the American Society for Histochemistry and Immunocytochemistry and a MERIT Award from the National Institutes of Health.

He is a Fellow of the Royal Society in the U.K., and a member of the U.S. National Academy of Sciences.

Since 1991, Cresswell has been an associate editor of Immunity, and serves on the editorial boards of several other journals. He was a member of the National Research Council’s Committee on Recommendations for U.S. Army Basic Science Research from 1997 to 2000, and currently serves on the scientific advisory boards of the Center for HIV/AIDS Vaccine Immunology and the National University of Singapore’s Immunology Program.

Autism

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mathematical model that predicted, based on the presentation of the symptoms of autism, that children with ASD would look if they were shown these new animations paired with upside-down versions as before.

When the experiment was carried out with a new group of 2-year-olds with ASD, the AVS model was spectacularly successful, accurately predicting shifts in gaze by these children over 90 percent of the time. The new AVS findings dovetailed nicely with other discoveries Klin and Jones have made in eye-tracking experiments. For example, they have found that when children and adults with ASD view films of people speaking, they tend to look mostly at the speaker’s mouth, whereas typically developing subjects focus mostly on the eyes. Since the mouth is the region of the face with the greatest correspondence between movement and sound, this behavior is consistent with the new animation data.

With their research on biological movement and other eye-tracking work, Klin and Jones believe they may be homing in on one of the most elusive goals of autism research: a test that could find behavioral signatures of autism at an early age, allowing parents and teachers to put interventions in place as children are still very young. ASD to more fully integrate into human social interaction. As Klin told Nature’s news staff, “We want to come up with a behavior assay that will predict vulnerabilities for autism in the first year, if not months, of life.”

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