**OCTOBER 20 • 2017** 

**VOLUME 4 • NUMBER 19** 

# BRAIN Initiative grants fund research on mouse

By Zara Abrams

he USC Mark and Mary ■ Stevens Neuroimaging and Informatics Institute (INI) at the Keck School of Medicine of USC has received \$19 million to help create a classification system for cells in the mouse brain. Led by Associate Professor of Neurology Hong-Wei Dong, the team will join the BRAIN Initiative Cell Census Network (BICCN)

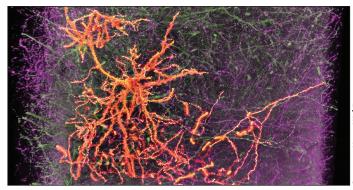
consortium, a five-year multisite collaboration funded by the BRAIN Initiative.

In the present project, researchers will examine the brain in finer detail than ever before—combining anatomical, physiological, and genetic approaches to paint a comprehensive picture of different cell types. It's an extensive classification and mapping effort comparable in scale to the human genome

project.
"When scientists first began studying the brain, we divided it into lobes," said Dong. "Then we began classifying it into progressively smaller regions. Now we're looking at groups of cell types and even individual

Joining the BRAIN Initiative, one of NIH's most prestigious

See **BRAIN**, page 2



A neuron in the medial prefrontal cortex projects to the amygdala.



aura Mosqueda, MD, ⊿chair and professor of family medicine (clinical scholar) and associate dean of primary care, was announced as the interim dean of the Keck School of Medicine of

USC in an Oct. 6 email from

Provost Michael Quick, PhD. Mosqueda has served as chair of the Department of Family Medicine since 2014. She is the director of the federally funded National Center on Elder Abuse, is the principal investigator for a study examining the prevention of abuse in vulnerable older adults and is a widely respected authority on geriatric and family

medicine, the email stated. Rohit Varma, MD, MPH, announced his resignation as dean of the Keck School in a letter distributed to faculty and staff on Oct. 5.

"During this time of transition, Dr. Mosqueda



Laura Mosqueda, MD

will work closely with (USC President C. L. Max Nikias, PhD,) and me to support you as we strengthen and improve the culture at the Keck School," Quick said in the email. "We know everyone will work with Dr. Mosqueda as she advances the priorities of the school."

In a separate message to

See MOSQUEDA, page 3

A group of Keck Medicine of USC leaders, physicians and patients are recognized on the field during the Oct. 7 football game at the Los Angeles Memorial Coliseum.

## Patients, physicians recognized for **Breast Cancer Awareness Month**

Tusc Norris Comprehensive Cancer o honor Breast Cancer Awareness Month, Center patients and physicians joined Keck Medicine of USC leadership to be recognized during the Oct. 7 football game against Oregon State, at the Los Angeles Memorial

Tom Jackiewicz, MPH, senior vice president and CEO of Keck Medicine of USC, and Rod Hanners, COO of Keck Medicine and CEO of Keck Medical Center of USC joined Keck School of Medicine of USC faculty members Janice Lu, MD, PhD, clinical professor of medicine; Maria Nelson, MD, assistant professor of clinical surgery; Carol Peden, MD, MPH, professor of clinical anesthesiology; Pulin Sheth, MD, assistant

professor of clinical radiology and director of the Harold E. and Henrietta C. Lee Breast Center at the USC Norris Cancer Hospital; Alan Wayne, MD, professor of pediatrics (clinical scholar) and interim director of the USC Norris Comprehensive Cancer Center; and Jason Ye, MD, assistant professor of clinical radiation oncology.

Patients Tien Nguyen, Graciela Riesgo and Theresa Zapata joined their health care providers on the field after the first quarter of play, wearing commemorative pink and black T-shirts. The shirts, adorned with the pink ribbon logo that is associated with the fight against breast cancer, are available for sale at USC bookstores. A portion of the sale of each shirt is donated to USC Norris.

## Flu vaccines required for employees

By Douglas Morino

7ith flu season here, the Keck Medicine of USC community is being reminded that physicians, nurses and staff members are required to have their flu vaccines by Nov. 1.

An annual flu vaccination is the best way to prevent the flu and an important step toward protecting patients, our families and ourselves, said Stephanie Hall, MD, chief medical officer, Keck Medicine of USC.

"By getting a flu vaccine, we greatly reduce the risk of transmission of the flu virus to our patients and colleagues," Hall said. "The flu vaccine is a safe, simple way to prevent the spread of the flu."

The flu is a contagious respiratory illness that, in

serious cases, can result in hospitalization or death. An annual flu vaccination is the best way to prevent the flu, she

Free flu vaccines are available to all patients and staff. The Centers for Disease Control and Prevention recommends people 6 months and older receive a flu vaccine by the end

See **FLU VACCINES**, page 3

## University leaders announce measures to improve campus culture

The university is ■ implementing a series of measures that aims to strengthen and improve working and teaching environments, USC leaders announced in an Oct. 10 memo to Keck School of Medicine of USC faculty and staff.

The measures, which include creating a new office to provide leadership training as well as an investigative unit to address personnel issues, were announced in response to recent events at the Keck School, according to USC Provost Michael Quick, PhD, and Todd Dickey, JD, senior vice president for administration.

"While the issues at (the Keck School) have been

painful, they have informed us," Quick and Dickey wrote in the memo. "We have reflected on what it means to be a member of the Trojan Family, and more importantly, the crucial role that university leaders have in creating a strong and supportive culture on our campuses. We must build the respectful, honest community that is embodied in our code of ethics."

The measures outlined included:

> 1. Vice Provost for Leadership Development and Evaluation: The creation of an office, reporting to the Provost, that will

> > See CAMPUS CULTURE, page 3

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# Simulation opens new path for at-risk youth

By Lex Davis

In the middle of the Surgi-Lcal Skills Simulation and Education Center, students are trying to walk along a line of tape while wearing "beer goggles" designed to simulate the perception shifts caused by alcohol. Others practice CPR chest compressions while Chris Foran, MD, a resident in general surgery at the Keck School of Medicine of USC, guides a group through packing a wound in an artificial leg with gauze. General surgery chief resident Saskya Byerly, MD, chats easily with the students as she coaches them on applying tourniquets properly.

It's all part of a workshop that Damon Clark, MD, assistant professor of clinical surgery, has set up with Foran and Soledad Enrichment Action (SEA), a nonprofit organization that provides intervention and education for young people who are at risk for gang involvement.

"We try to teach them about violence and how to avoid it, show them what trauma really is and then we try to give them higher educational goals," Clark said.

The afternoon was an intense one: The SEA students started with a presentation on the cost — financial and human — of



A high school student participates in a simulation wearing "beer goggles" during a Sept. 25 visit to Keck Medical Center of USC.

gun violence. They then toured the ICU and the fresh-tissue dissection lab for a look at what the caregivers in the trauma division see on a daily basis, as well as a primer on how to help others during a medical emergency.

The day ended with another perspective shift as Foran gave a presentation on potential medical careers so the students could see that they could get good-paying jobs whether they had a high school diploma, vocational training or a degree.

"A lot of these kids started out not expecting to finish high school," Clark said. "Now they see they have options."

# Microbiomes explored at 2017 Massry Prize lecture

By Amanda Busick

The microbiome — microbes that comprise an ecosystem, either internal or external to a biological host — was the topic of the 2017 Massry Prize Lecture, delivered Oct. 5 by the winners of this year's prize on the Health Sciences Campus.

Norman R. Pace, PhD, of the University of Colorado, Boulder, called microbiomes "one of the least understood, yet most important aspects of the global ecosystem." Pace presented examples of microbiomes in indoor environments. Some — in locations such as swimming pools and bathrooms contain microbes that may cause ailments including non-tuberculous mycobacteria pulmonary disease, which affects from 100 in 100,000 to more than 500 in 100,000 people in the United States, which is considered an epidemic level.

"That is a serious disease and it's all over the place,"



From left, Norman R. Pace, M. Elizabeth Fini, Shaul G. Massry, Jeffrey I. Gordon and Rob Knight are seen before the 2017 Massry Prize lectures, held Oct. 5 on the Health Sciences Campus.

Pace said, giving the crowd a personal connection to his research. "I am sure that there are people with this disease out here in the audience."

Rob Knight, PhD, of the University of California, San Diego, spoke about his work to perform microbial gene sequencing on a large scale. This was a necessary step in the study of microbiomes because, as Knight stated, "There are

100 million times as many bacteria on Earth as stars in the universe."

"Microbiology," he said, "is the ultimate big data science."

Jeffrey I. Gordon, MD, of Washington University School of Medicine in St. Louis, spoke of his work to discern the influence of the human gut microbiome, which is sometimes referred to as an organ itself — on obesity and childhood

malnutrition. Starting with germ-free mouse models in the lab, Gordon's team has moved on to working with children in Bangladesh and Malawi. The first study is nearly complete, using a nutritional supplement specifically designed for the environment where these children live.

"At this point in time we have a human biological study that will allow us to determine whether we can repair this immature organ." Gordon said. "We'll learn a lot from these studies about the interactions between healthy growth of a microbiota and healthy growth of children."

The Meira and Shaul G. Massry Foundation established the annual Massry Prize in 1996 to recognize contributions to the biomedical sciences and the advancement of health. Fifteen Massry prize winners have gone on to win the Nobel Prize.

# **BRAIN:** grants fund research on mouse brain cells

Continued from page 1

programs, means that INI researchers will have the chance to impact diverse research activities and serve as a catalyst to other projects across the field of biomedicine.

"We're creating a classification system for a finer level of detail than we've ever tackled before," said Arthur W. Toga, director of the INI. "In the process, we're developing datasets and tools essential to illuminating the structure and function of the brain."

The consortium's overarching goal is to identify and catalog each cell type in the mouse brain, which requires tackling the problem from all angles: from connectivity mapping to observing molecular signatures, electrophysiological properties, and functional relevance.

Dong is the principal investigator for the neuroanatomy analysis, based at INI, and will also provide support for two other projects: a connectivity and transcriptome analysis based at the Cold Spring Harbor Laboratory and an epigenomics project based at the Salk Institute for Biological Studies.

For each project, Dong's team will generate and analyze data, and provide informatics support. The group will employ a combination of the most advanced imaging technologies available, including cutting-edge microscopy and viral tracing methods.

## **Calendar of Events**

#### Wednesday, Oct. 25

Noon. The Saban Research Institute Seminar. "Regeneration & Preservation of Pancreatic Beta Cells in Diabetes," Rupangi Vasavada, PhD, Icahn School of Medicine at Mount Sinai. Saban Research Building Auditorium, 4661 Sunset Blvd. Info and RSVP: Sandy Wang, (323) 361-7489, tecpad@chla.usc.edu, http://chla.org/tecpad

1 p.m. MS in Global Medicine Lecture. "Community Outreach Clinics' Innovative Approaches to Bring Services Closer to People," Geoffrey Anguyo, MD, Kigezi Healthcare Foundation. McKibben Lecture Hall (MCH) 256. Info: (323) 865-1649, rseuffer@usc.edu

#### Thursday, Oct. 26

**1 p.m.** Center for Work and Family Life Workshop. "Finding Balance: Mind, Body and Spirit." Keck Hospital Silver Room 34. Info: Center for Work and Family Life, (213) 821-0800

#### Friday, Oct. 27

Noon. USC Human Resources. "2018 Open Enrollment Information Session." Soto II, SST 2902. Info: (213) 821-8100, uschr@usc. edu, https://openenrollment.usc.edu

#### Tuesday, Oct. 31

9 a.m.-11 a.m. SC CTSI Workforce Development Seminar. "How to Write a Manuscript," Roberta McKean-Cowdin, PhD. Harkness Auditorium. Info: Karen Kim, (323) 442-8281, wd@sc-ctsi. org. RSVP: https://redcap.sc-ctsi.org/ surveys/?s=YEEFLJEHYK

#### Wednesday, Nov. 1

8:30 a.m.-4:30 p.m. USC Institute for Integrative Health and USC Office of Continuing Medical Education. "Revisioning Healthcare: Reclaim the Soul of Medicine." California Endowment, 1000 N. Alameda St. Info: Lysandro Valenzuela, (323) 442-2555,

usccme@usc.edu, https://cmetracker.net/KECKUSC/Catalog

Noon. Southern California Clinical and Translational Science Institute. "Digital Scholar Webinar Series: Using the Research Platform TurkPrime to Crowdsource Data for the Health Sciences," Leib Litman, PhD, TurkPrime. Info: Katja Reuter, katja.reuter@med.usc.edu. RSVP: http://bit.ly/2vQPVuC

#### Thursday, Nov. 2

10 a.m.-3 p.m. USC Human Resources. "Benefits Fair." Harry and Celesta Pappas Quad. Info: (213) 821-8100, uschr@usc.edu, https://openenrollment.usc.edu

#### Friday, Nov. 3

**8 a.m.-6:30 p.m**. HTE@USC and SixThirtyGroup Conference. "Transforming Healthcare with Data." Radisson Hotel Los Angeles Midtown at USC. Info: Nadine Afari, nafari@usc.edu, http://bit.ly/2xjTlsl

#### Saturday, Nov. 4-Sunday, Nov. 5

8 a.m.-Noon. Society of Graduate
Radiologists, Department of Radiology
and USC Office of Continuing Medical
Education. "Advances in Radiology." 100
Terranea Way, Rancho Palos Verdes. Info:
Lysandro Valenzuela, (323) 442-2555,
usccme@med.usc.edu, https://cmetracker.net/
KECKUSC/Catalog

#### Wednesday, Nov. 8

1 p.m. The Saban Research Institute Seminar. "Discovery & Innovation Seminar: Pathways Regulating Hematopoietic Stem Cell Self-Renewal and Migration," Leonard I. Zon, MD, Harvard Medical School. Saban Research Building Auditorium, 4661 Sunset Blvd. Info and RSVP: Sandy Wang, (323) 361-7489, tecpad@chla.usc.edu, http://chla.org/tecpad

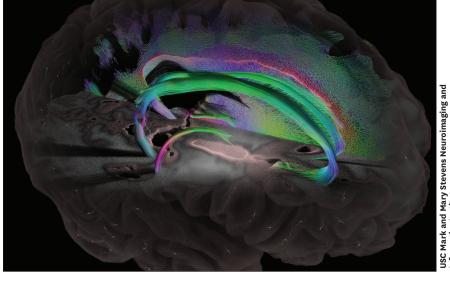
**Notice:** Calendar items are due at least 10 days before publication date. Timely submission does not guarantee publication in print. See more calendar entries at hscnews.usc.edu/calendar-of-events. Submit items at tinyurl.com/calendar-hsc. Include day, date, time, title of talk, first and last name of speaker, affiliation of speaker, location and a phone number/email address.

## New big data study will investigate link between gender and

wice as many women as men de-L velop Alzheimer's disease, but even after years of research, aging experts are unsure why. Judy Pa, PhD, assistant professor of neurology at the Keck School of Medicine of USC, will lead a new big data study focused on the link between gender and Alzheimer's risk.

"We believe there are distinct biological reasons for why women are at increased risk of Alzheimer's disease — reasons that can be probed and discovered from data that already exist," said Pa, who is based at the USC Mark and Mary Stevens Neuroimaging and Informatics Institute. "Previous research may have missed these gender-specific variations because the disparities can be subtle. This is why our targeted approach is important and necessary for addressing these questions."

The five-year study is funded by a \$3.78 million National Institutes of Health award and will use imaging and genetics data to explore the issue. Pa and her team include Alzheimer's disease investigators across USC in the departments of Neurology, Psychology, Pharmaceutical Sciences and Preventive Medicine.



Judy Pa and her team will combine and analyze imaging and genetics data from more than 30,000 people.

"Men and women may require specialized treatment strategies for a disease as complex as Alzheimer's," said Arthur W. Toga, PhD, Provost Professor of Ophthalmology, Neurology, Psychiatry and the Behavioral Sciences, Radiology and Engineering; Ghada Irani Chair in

Neuroscience; and director of the USC Mark and Mary Stevens Neuroimaging and Informatics Institute. "It's important to understand these differences so we can develop effective targeted therapies."

Theories abound as to why women face a higher Alzheimer's risk than men.

For decades, researchers assumed that longevity explained the disparity: women live longer than men, thus they are more often diagnosed. Recent data suggests longevity explains part of the difference, but isn't the whole story.

Other potential explanations include hormone-related changes, differential stress-induced pathology and educational differences. For example, women experience a change in energy resources throughout the body after menopause, which may impact neurological processes, researchers said.

The study aims to aggregate clinical, cognitive, imaging, and genetics data from more than 3,000 people, combining multiple existing datasets with comprehensive data types.

"We're leveraging existing resources," Pa said. "The data are already there, they just need to be managed in specific ways. The tricky thing with big data is harmonizing it — many attributes will need to be cleaned up and reconciled between datasets. And most importantly, understanding the biological relevance of findings when using a big data approach are critical."

#### **UNIVERSITY LEADERS:** announce measures to improve campus culture

Continued from page 1

provide leadership training to address expectations of deans and senior leaders, and to evaluate their performance.

- 2. USC Ombuds Office: Varun Soni, Vice Provost for Campus Wellness and Crisis Intervention, will lead the creation of a confidential space with a physical presence on the Health Sciences Campus to report issues and assist in managing difficult situations with impartiality and independence.
- 3. Investigative unit for non-protected classes: The creation of a separate unit to investigate reported incidents that do not fall within the scope of the offices of Equity and Diversity and Title IX. Results of these investigations involving faculty will be handled by the office of the Vice Provost; results of investigations involving staff will

be handled by the Associate Senior Vice President for Human Resources.

- 4. Strengthened Reporting: The establishment of clear processes to elevate concerns so they can be monitored as they
- Specific Initiatives: Tom Jackiewicz, senior vice president and CEO of Keck Medicine of USC, will work with the interim dean of the Keck School and the deans of the USC School of Pharmacy and the Herman Ostrow School of Dentistry of USC, on focused initiatives for the faculty, students and staff at the Health Sciences Campus.

The memo also included resources for faculty and staff to report personal and professional concerns, such as Trojans Care for Trojans and the Office of Compliance Help and Hotline service.

"We recognize that we ask much of our community: to be not only global leaders in research, teaching, creative expression, and clinical care, but also leaders in the way we act, treat and respect each other," Quick and Dickey wrote. "Our actions must be a visible manifestation of our highest ideals and shared values. With all of these steps, and more, we know we will become an even more exceptional

community."

#### **MOSQUEDA:** named interim dean

Continued from page 1

chairs and directors, Mosqueda encouraged Keck School leaders to reach out to her as the school prepares for upcoming events including recruitment, strategic planning and the accreditation visit from the Liaison Committee on Medical Education.

"With your help we will move forward with the major initiatives in a calm and reasonable way," Mosqueda said in the memo. "I look forward to learning a lot during this process and to meeting each of you."



#### **FLU VACCINES:** required for Keck Medicine employees

Continued from page 1

of October. The CDC estimates that as many as 3,300 die each year from the flu. Transmission of the flu virus can occur even before the illness is evident.

Last year, about 5 million flu illnesses were prevented by vaccination, according to estimates by the CDC.

The Los Angeles County Department of Public Health mandates that health care personnel in acute care hospitals, long-term care facilities and intermediate care facilities in Los Angeles County be vaccinated against influenza or wear a protective mask. The goal of the order is to lower the rates of transmission of influenza among health care personnel and the vulnerable populations they serve.

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#### **HSC Newsmakers**

A roundup of news items related to Keck Medicine of USC, which may include philanthropic donations, research grants, publication in academic journals and mentions in the news media:



Johannes (Jan) Van Dijk

#### **Pharmacy PhD candidate wins Krown Fellowship**

USC SCHOOL OF PHARMACY DOCTORAL STUDENT JOHANNES (JAN) VAN DIJK has earned the 2017-2018 Charles and Charlotte Krown Fellowship for his work on genetic engineering of fungal biosynthesis. Originally from the Netherlands by way of Australia, Van Dijk serves as lab manager for the research team headed by Clay C. C. Wang, PhD, chair of the Department of Pharmacology and Pharmaceutical Sciences. "Fungi employ a concerted group of enzymes to produce molecules," Van Dijk said. "So each enzyme can be seen as a single machine in a factory assembly line. My work focuses on tinkering with the individual machines as well as combining them in a new way to generate novel molecules using genetic engineering." The Krown Fellowship is the most prestigious award given to graduate students in the USC School of Pharmacy. — Michele Keller



#### Team receives \$3 million to produce sophisticated rats

QI-LONG YING, PHD, ASSOCIATE PROFESSOR OF STEM CELL BIOLOGY AND REGENERATIVE MEDICINE at the Keck School of Medicine of USC, and his team have introduced a new transgenic animal — the conditional and inducible gene knockout rat. Created using embryonic stem cell-based technology, these rats allow researchers to control both where and when any specific gene is expressed. His team made these breakthroughs with support from a \$1.33 million Tools and Technologies grant from the California Institute for Regenerative Medicine (CIRM). Ying will continue the project with a \$3 million grant from the National Institutes of Health. "Maybe in the future we will develop a cure for some diseases because of the knowledge we learn from using rat models," Ying said. "That's very possible. So we want more researchers from USC and beyond to come use this technology." — Cristy Lytal

#### Mammograms at USC-VHH for \$99 in October

October is Breast Cancer Awareness Month and USC Verdugo Hills Hospital is doing its part to help fight the most common cancer among women in the United States. The USC-VHH Breast Healthcare Center is offering \$99 mammograms during the month of October. Average-risk women who are 50 to 74 years old are recommended to receive a mammogram screening every two years, according to the U.S. Preventive Services Task Force. Average-risk women who are 40 to 49 years old should talk to their doctor about when to start screenings, according to the Centers for Disease Control and Prevention. To schedule an appointment, call (818) 952-2266.

## Five questions with TJ Malseed

By Douglas Morino

s the chief health infor-**L**mation officer for Keck Medicine of USC, Timothy James (TJ) Malseed oversees information management, technology and cybersecurity across the medical enterprise. He is drawn to the fast-paced, ever-evolving nature of the health care field.

"Technology in health care is rapidly evolving," he said. "It keeps me on my toes. We have to be evolving as well as able to forecast where the technology is moving and how the health care landscape is changing."

Malseed grew up in Michigan before moving to California with his family. He went on to study international business and computer science at the University of California, Davis. Prior to joining Keck Medicine in 2016, he held the positions of vice president, chief information officer and chief applications officer at Children's Hospital Los Angeles.

Malseed lives in La Crescenta with his wife and two young daughters.

Who is someone that you admire, and why?

Jack Welch, former CEO of General Electric. I admire his people-centric view and values with the addition of domain

expertise.
What's one attribute that has led to your professional success?

Empathy. There is typically a lot of anxiety among staff whenever you change technology in an organization. I try to stand in the shoes of a staff member and understand how. on a day-to-day basis, the technology will impact their work life. I think that ability has helped make me successful. When I'm building teams I look for people with the similar capabilities.

What is the hardest part of your job?

Change management. It can be challenging to motivate people to adopt new technologies. With new technology in the workplace, most people fear they won't be good at it or that they will appear to not be proficient. You've got to ensure they are confident that they will be supported until they become successful. When anxiety drops, people can start to learn. It's all about building trust from the first step.

What book are you reading? I just finished the book Future Crimes by Marc Goodman. It's an interesting look at cyber security and where technology and the criminal industry are going.



Timothy James (TJ) Malseed

Did you ever think about pursuing a different career?

When I was really young I wanted to be a helicopter pilot; then, out of college, I looked at investment banking and finance. I interviewed with several investment banking firms but I found I was more drawn to technology, and ultimately I decided to go down that road. The marketplace for technology is so big, it really stretches you professionally. With technology, most of what you learned three or four years ago is stale, so you have to continually evolve and grow as the industry changes, I am really drawn to that.

Five Questions is a regular feature with Keck Medicine of USC leaders.

## Kenji Inaba named vice chair of the Department of Surgery



Kenji Inaba, MD

the national certifying organization for general surgeons and related specialists.

Inaba said that he looks forward to enriching the department's faculty development and mentoring programs, as well as improving the department's access to federal training grants. He is enthusiastic about taking on his new role.

"With any new position, there is always so much to learn and that's exciting," he explained. "This department is on a sharp upward trajectory, whether you look at clinical volumes, research output, or educational initiatives and trainees. It's exciting to be able to make a small contribution to making it even better."

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#### By Lex Davis

aughn A. Starnes, MD, chair and Distinguished Professor of Surgery, has appointed Kenji Inaba, MD, associate professor of surgery (clinical scholar) and director of the general surgery program at the Keck School of Medicine of USC, to the role of vice chair of the Department

"We're doing surgery in so many locations now. A vice chair is crucial in a department this large," said Starnes, the H. Russell Smith Foundation Chair for Stem Cell and Cardiovascular Thoracic Research. "Dr. Inaba is one of the bright young surgical luminaries of the future. He's shown a lot of leadership in the trauma division and in his role as the program director for the general surgical residency program."

Inaba brings his understanding of graduate and undergraduate education to the role as well as his experience with research, grant funding and editorial board work. In March, he became a director of the American Board of Surgery,

#### **HSC News**

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