Andrew McMahon installed as chair of stem cell biology

By Imelda Valenzuela Fowler

Andrew P. McMahon, newly appointed department chair of stem cell biology and regenerative medicine at the Keck School of Medicine of USC, is profiled.

Becoming a new chapter in the center's history

By Hope Hamashige

Jaci Plost and Sean Carpiso were supposed to tie the knot on Kauai in mid-September, but two weeks before their wedding, Plost found herself in Keck Hospital awaiting a heart transplant.

The endowment professorship was made possible through a gift from the W. M. Keck Foundation and launched the $1.5 billion Keck Medicine Initiative, the largest component of The Campaign for the University of Southern California.

"Today it's my great pleasure to officially welcome a scientist of the highest caliber," said Nakas, "a man who will lead USC boldly into the emerging biotechnology revolution and help usher in the new age of innovation and discovery." Then, two days before their wedding, they met Jill Mathison, associate administrator for operations at Keck Hospital, as she was doing her ambassador rounds, and everything changed.

When Mathison learned of the couple's plans to marry, she immediately decided the staff members at Keck were going to make their wedding day special. "She said she wasn't going to let us get married in my room," explained Plost. Mathison led the charge to help Plost have something akin to a "real" Hawaiian-themed ceremony at Keck Hospital.

"We are deeply grateful for..."
By Hope Hamashige

When Itu Laird-Offringa arrived at USC 16 years ago, she began attending a weekly clinical oncology conference in the Norris Comprehensive Cancer Center and quickly learned that the situation for lung cancer patients was dire.

“The disease was killing more people than the top three other cancers combined. Screening was unable to detect the cancer before it spread. Five-year survival rates were a dismal 15 percent. This is what got me interested in doing research on lung cancer,” she said during an Oct. 15 lecture in Aresty Auditorium, explaining that it was clear that better screening was key to giving lung cancer patients a chance.

While low-dose computed tomography (CT) scans were found to detect early stage lung cancers in smokers over 55, imaging still has a high false positive rate, and over 95 percent of detected lesions are not cancer.

Laird-Offringa, associate professor of surgery at the Keck School of Medicine of USC, took her research in a different direction, looking for evidence in the blood that there is a tumor in the lung.

“A blood-based biomarker would be our Holy Grail,” she said.

Searching for that biomarker, or set of biomarkers, is a process that requires both strong science and limitless patience. Laird-Offringa’s research team is looking for biomarkers along two separate paths—one that signals the onset of small cell lung cancer and another for non-small cell lung cancer.

The group of non-small cell cancers includes adenocarcinoma, the most common form of lung cancer and also the most common among never-smokers.

From the outset, it was known that cancer patients shed more DNA into their blood than people without cancer. The team began to analyze regions of the DNA that are chemically marked by a process called DNA methylation. Over the years, she and her team have analyzed tens of thousands of regions of DNA to find methylation marks specific to lung cancer.

“The hunt is complicated by the fact that the marks can differ between types of lung cancer and among patients. So, her lab is creating a method of searching blood samples for a panel of 12 markers.

Laird-Offringa’s group determined the best method of detecting small cell lung cancer would be to look for antibodies that occur in small cell lung cancer patients and began by studying antibodies to one protein, HuD.

They recently identified a modification of HuD that may be a trigger for the immune response seen in small cell lung cancer patients. This modification may also occur in earlier stages of cancer and may explain the variety of immune responses seen in small cell lung cancer patients. Laird-Offringa’s research suggests the antibodies appear before clinical symptoms of cancer and so may provide a tool for early detection.

In both areas, the research continues. In the case of small cell lung cancer, they are trying to pinpoint when in the development of cancer the antibody response is triggered.

“The test for non-small cell lung cancer is not a perfect predictor, but in about half the cases it did detect early stage cancer, Laird-Offringa said.

The group is continuing to mine new data for more, and possibly more accurate, biomarkers. They are also trying to determine if larger blood samples will yield higher biomarker concentrations. And they plan to search for other applications for this panel of biomarkers such as helping to determine whether fluid gathering around the lungs, called pleural effusions, indicates malignancy.

WEDDING: Not the usual ‘I do’

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Roberts was on duty that Sunday so she arranged to help Plost put on her make up and sweep her lips into a lock up-do. Lastly, the ukulele version of “Somewhere Over the Rainbow,” by Hawaiian singer Israel Kamakawioloe, was downloaded for the ceremony.

“It was so overwhelming, Andy is a wonderful scientist and human being,” said Puliafito, who—as a show of gratitude—donated her wedding dress back to the Patient Experience department for use by a future patient who may find herself in the same situation.

“Everything you could think of was taken care of by the nurses here. They made it really, really special.”

Plost had her heart transplant about a week after her wedding and was discharged last week.

Mathison thanked everyone involved in making Plost’s special day memorable.

“Everyone dropped what they were doing at the last minute to help,” said Mathison. “It really demonstrated just how committed our staff members are to providing a truly unique experience with care and compassion for our patients.”

MCMAHON: Installed as chair

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“Edythe and I get to Cambridge often because of the Broad Institute, which is a partnership between Harvard and MIT,” said Eil Brou. “I know that you and those that you bring with you will bring this center to even a higher level of excellence, and we thank you for all of that.”

McMahon brought most of his lab members with him to USC, including his wife, Jill, an accomplished research scientist in her own right, who is also the lab manager.

As a commemorative gift, Nikias, Broad and Keck School Dean Carmen C. Puliafito presented McMahon with an encased replica of a chair designed by Belgian furniture designer Maarten van Severen.

“Andy is a wonderful scientist and human being,” said Puliafito, who was instrumental in recruiting McMahon to USC. “He is a fantastic addition to our scholarly community at USC.”
Large CT scan of fossilized whale skull

By Sara Neve

Q. How old was the oldest patient to receive a CT scan at the USC Molecular Imaging Center (MIC)?

A. 16.5 million years old!

Paleontologists from the John D. Cooper Archeological and Paleontological Center in Fullerton, Calif., brought a 16.5-million-year-old fossilized whale skull to the MIC.

Originally discovered in a housing project in Bakersfield, Calif., in 2007, the small skull presented serious questions of identification to paleontologists. While the shape of the skull hinted that it was a baleen whale, the extremely small size (only 56 cm) was much smaller than any previously discovered fossil.

Paleontologists would normally clean the fossil of surrounding rock in order to make a definitive identification, but unexplained material that could be preserved tissue or a bacterial biofilm encased the fossil. Rather than risk damage to the material, representatives from the Cooper Center brought the skull to USC.

“This was our first paleontological specimen, and we were really quite excited to be able to work with scientists in the field of paleontology,” said Grant Dagliyan, core manager of the MIC at the Keck School of Medicine’s Department of Radiology. “This project was an exciting endeavor for us here at the MIC because it enabled us to expand upon the knowledge and experience of our group.”

Prior to the skull arriving on campus, USC imaging technicians ran mock scans with rocks and other materials as practice. “It was a great joy and strong sense of achievement to be able to help Meredith [Riven, associate curator, paleontology, at the Cooper Center] solve a longstanding question that she had for years,” said Dagliyan. “On a scientific level, it is remarkable to be able to see the evolution of science where something that had died millions of years ago was put into a present-day CT scanner.”

After scanning the skull, paleontologists confirmed that the specimen is a baleen whale—possibly the smallest ever discovered. Details of the scan indicate that the animal was an adult and likely a previously unknown species. “Even among many of the doctors at the Imaging Center, everyone was excited to look at a fossil up close,” said Dagliyan. “I think, in comparison with most of the studies we do everyday, the sense of scientific achievement is equally satisfying, but the knowledge that we helped identify what may be a new species is just thrilling.”

The Baltimore Sun on Oct. 28 ran an op-ed by J. Patrick Whelan, clinical assistant professor of pediatrics at the Keck School of Medicine, about health policy and its effects on economic competitiveness.

An Oct. 26 report in FierceHealthIT names Leslie Saxon, professor of clinical medicine at the Keck School of Medicine and director of the USC Center for Body Computing, as one of the eight most influential women in health care information technology.

An Oct. 24 article by CNN highlighted research by Pia Pannaraj, assistant professor of clinical pediatrics at the Keck School of Medicine, on flu prevention among school-age children.

The study followed 4,500 children in eight L.A. elementary schools, some of which were vaccinating and testing for flu.

“We found that children who were vaccinated were three times less likely to get the flu and missed half the number of school days compared to children who were not vaccinated,” Pannaraj said. Pannaraj also was quoted in the Growing Your Baby blog.

An Oct. 23 report in U.S. News & World Report featured research by Edy Saffier, professor of clinical medicine at the Keck School, and colleagues that looks at the promise of electrical stimulation treatment for unresolved reflux symptoms.

An Oct. 23 Scientific American article featured research by USC Dornsife doctoral student Justin Hall and Michael Habib, assistant professor of research at the Keck School of Medicine, suggesting that the dinosaur Microaptor may have four wings. Habib and Hall proposed that the dinosaur could have kept the limbs under its body most of the time, until needed for banking in a turn. The extra surface area would have actually made straight-ahead moves more difficult. Science News reported on Oct. 22: “For every surface, you pay a little drag tax,” Habib said.

An Oct. 23 broadcast on Mundo Fox Los Angeles affiliate K W H Y TV interviewed Cesar Armendariz, director of health sciences community outreach, about the Bridge to Health, a free health fair hosted by USC and White Memorial Hospital.

An Oct. 23 story in EmcapsHealth noted that Arnold Kegel, inventor of the Kegel exercises and perineometer, was an assistant professor of gynecology at the Keck School of Medicine in the 1940s.

An Oct. 21 special section of the Los Angeles Times quoted Stephen Gruber, director of the USC Norris Comprehensive Cancer Center, about personalized cancer therapy and research occurring at the cancer center.

An Oct. 19 broadcast on CBS News Wilkes-Barre, Penn., affiliate WYOU-TV covered research by Keck School of Medicine doctoral student Chelsea Catsburg and colleagues, finding that red meat consumption can increase the risk of bladder cancer.
Calendar of Events
This Calendar of Events is also online at www.usc.edu/hsccalendar for the Health Sciences campus community

Saturday, Nov. 3
8 a.m. – 3:30 p.m. USC Center for Cerebrovascular Disorders & Office of Continuing Medical Education 2012 Cerebrovascular Disease Symposium: “Treatment of Ischemic and Hemorrhagic Stroke: Who, When and Why?” Gary Steinberg, Stanford, Arun Amar and Gene Sung, USC. KAM Meyer Auditorium. Info: (323) 442-2555
4 – 6 p.m. USC Institute for Genomic Medicine Art Gallery Opening Reception. CGSC 240. Info: (323) 442-1144

Sunday, Nov. 4
8:30 a.m. Walk to End Alzheimer’s. The USC Department of Neurology is participating in this year’s 2012 Walk to End Alzheimer’s event at Century Park in Century City. You can take part in this walk by registering online at alzla.org/walk and join team USC Memory and Aging. Team members will receive a USC Memory and Aging team T-shirt. Info: Lisa Jordan at (323) 442-7685

Monday, Nov. 5

Tuesday, Nov. 6
11 a.m. Psychiatry Grand Rounds. “SSRI’s and REM Sleep Disorder.” Ron Shatzmiller, USC. ZNI 112. Info: (323) 442-4065

Thursday, Nov. 8
11 a.m. – 1 p.m. USC Institute for Integrative Health Opening Reception and Seminar. “The Birth of Integrative Medicine at USC.” Marc Weisberg, USC. CGSC 250. Info: (323) 442-2668

Wednesday, Nov. 7


Thursday, Nov. 8
11 a.m. – 4 p.m. 9th Annual Diabetes Symposium. Featured speakers Helen Baron and Wei-An (Andy) Lee, USC. SRT Arsey Auditorium. Info: (323) 442-2806


Friday, Nov. 9

8:30 a.m. Surgical Grand Rounds. “Death by Bariatric Surgery? The Importance of Pattern Recognition in Confusing and Potentially Fatal Situations.” Peter Crookes, USC. DOH 100. Info: (323) 442-9064

USC researcher seeks to improve adolescent cancer survival

Despite improvements in outcomes for children and older adults with cancer over the past 30 years, survival among adolescent and young adult cancer patients has lagged significantly. A Keck School of Medicine researcher has won a grant to understand this disparity.

Myles Cockburn, associate professor in preventive medicine, won a more than $69,000 grant from the St. Baldrick’s Foundation, a charitable organization dedicated to raising money for childhood cancer research.

Reasons that adolescent and young adult (AYA) patients (age range 15–39) have a lower survival rate include a number of factors such as differences in tumor biology, insurance coverage and whether they adhere to a treatment protocol. Cockburn hopes to collect detailed information about factors influencing the survival of this patient population that will help doctors close the gap.

“Our research can provide detailed information to clinicians and health care providers in Los Angeles and statewide to allow them to target much needed prevention and care to AYA cancer suffers,” said Cockburn said. “We hope this work will be only the beginning of a truly multidisciplinary effort to get AYA cancer patients the care they need and reduce pain and suffering among our young adults.”

“The St. Baldrick’s Foundation since 2005 has awarded more than $101 million to support research for childhood cancers.

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Notice: Deadline for calendar submission is 4 p.m. Monday to be considered for that week’s issue—although three weeks’ advance notice of events is recommended. Please note that timely submission does not guarantee an item will be printed. Send calendar items to The Weekly, KAM 400 or fax to (213) 442-3812, or email to eblaauw@usc.edu. Entries must include day, date, time, title of talk, first and last name of speaker, affiliation of speaker, location and a phone number for information.

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