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BRAIN RESEARCH INSTITUTE UCLA

Neuroscience News

22ND ANNUAL NEUROSCIENCE POSTER SESSION

"Spectacular array of research"

November 30 saw the Brain Research Institute host its 22nd Annual Neuroscience Poster Session in the Grand Ballroom of the Ackerman Union. Roughly two-thirds of the enormous space was occupied with posters covering every aspect of neuroscience at UCLA, from the labs, to the microscopy core facilities, to the outreach activities of Project Brainstorm and Interaxon.

Professor Michael Fanselow was an active participant in this year's poster session. He explained that the event traditionally happens in the wake of the yearly Society for Neuroscience (SFN) conference, which this year took place in San Diego. The BRI event is a chance for UCLA neuroscientists to catch up on each other's work in a venue less spread out and overwhelming than the SFN conference.

"I learn so much about what it going on here on campus," said Fanselow, adding that the BRI poster session has much of the breadth of a larger meeting in terms of the variety of research on offer, yet the intimacy and ease of communication afforded by a smaller, more specialized conference.

In addition to the poster presentations, the event is also an opportunity to honor some of the more interesting research and accomplished trainees in the BRI community. After the poster session, numerous undergraduate students, graduate students, and postdoctoral fellows were presented with travel awards and bursaries.

"There is a spectacular array of variety of research at UCLA," said Fanselow. **See more, page 3.**

In this issue:

Congratulations!

Dr. Kelsey Martin has been named the 22nd Annual Magoun Lecturer. Her talk is scheduled for March 8th. Details on page 7.

Message from Chris Evans, Director of the Brain Research Institute

On Saturday, January 30, I had the opportunity to participate in the Los Angeles Brain Bee. The event, which the Brain Research Institute has sponsored for several years together with USC, encourages high school students from California to pit their neuroscience knowledge against each other to compete for the chance to appear in the National Brain Bee in Maryland. Many thanks go to Amy Sweetman from Los Angeles City College and the students from USC and the BRI Interaxon group for their considerable efforts in organizing a highly successful LA Brain Bee.

The New Year is always a good time to take stock of where we are, and where we want to go in the future. In this context, meeting dozens of high school students eager to show off their scientific knowledge was a welcome tonic. The last few years have been uncertain times for us all, particularly in California. The economic climate has meant that everyone has felt the pinch, from furlough days, to reduced funding support for research and for the university's infrastructure.

My day as a Brain Bee judge reaffirmed to me that the future of neuroscience in general, and the BRI as an institution, can count on a surprising number of young people who will grow up appreciating the importance of scientific knowledge. Many of them will doubtless eventually find their way to our labs.

But that does not lessen the burden of our own responsibilities. We all must continue to make the case not only for science, but also for what science stands for. And as we do so, we must continue to find new and better ways to move forward.

In terms of the public discourse, it is often difficult to defend spending on basic research and the tools that we must use to understand the brain. The benefits to society are not as immediately obvious as schools, hospitals and roads. Society's progress relies on the building blocks and insights provided by basic research; this must be part of our message to the community.

Scientific thinking is more than just testing hypothesis and experimental rigor. It requires, at its heart, a respect for knowledge previously acquired, the imagination to question its accuracy, and above all, humility in the face of what we do not know and cannot predict.

The next year at the BRI will, in some ways, be difficult to predict. The proposed state budget for the upcoming year will likely cut an enormous amount of money from the UC budget. Everyone will feel the loss.

As such, we must bring our humility and imagination to solve our own problems. There are certainly individual ways in which we can contribute, but there are collective resources that can be improved as well – including the cores, as outlined in the article on this page.

That said, in many ways the BRI is destined to thrive. Our 22nd Annual Poster Session, held on November 30th, after the Society for Neuroscience conference in San Diego, was heartening for anyone concerned about the state of neuroscience at UCLA. The strength of UCLA's collaborative, multidisciplinary neuroscience community is always evident at the poster sessions. As Director, I was honored to announce prizes and awards for over 38 of our students and postdoctoral researchers who were among the nearly 200 poster presenters that day.

While the immediate threat to our budgets looks dire, I cannot help but feel heartened by the future of UCLA neuroscience I saw at both the Brain Bee and at our own poster session. In terms of the human capital we truly count on to move us forward in the years to come, the BRI is rich indeed.

Rethinking the UCLA cores

Last year, the two microscopy cores run by the Brain Research Institute changed personnel, due to the departure of Marianne Cilluffo for another position at UCLA. But that is not all that has changed – the Microscopic Techniques Core is now overseen by Dr. Harry Vinters and is closely aligned with the Neuropathology Core that he also runs. The Electron Microscopy Core is now called the Electron Microscopy Services Center and is focused on providing expertise in sample preparation for EM analysis while taking advantage of the amazing new EM facilities in the California NanoSystems Institute (CSNI).

The name change to The Electron Microscopy Services Center reflects a change in emphasis for the facility, but also a desire on the part of BRI Director Chris Evans to re-imagine how the various core facilities at UCLA operate. "The core facilities at UCLA have evolved in a pretty random and siloed way without much overall planning at the university level," says Dr. Evans. "There is duplication of resources, core services that are better outsourced, little linked interactions among cores, considerable problems with setting up and maintaining UCLA-approved sales and service contracts, and marginal evaluation of many cores that occupy valued research space and that can sap considerable resources from the university to stay afloat."

Dr. Evans believes cores are essential for UCLA to stay in the research forefront, win new grants, excel in multidisciplinary research efforts and enable researchers to gain a competitive edge in their research by using unfamiliar technologies or expensive equipment.

"We need stable university funding sources for cores with contributions from all the relevant schools, departments and institutes. Perhaps we should even be considering shared cores with neighboring affiliated institutes such as Cedars, USC, Caltech and Drew," says Evans. "We should also look at supporting cores using vouchers for new faculty recruits or retentions rather than putting our dwindling resources into individual laboratories. We need, where possible, to reduce redundancies in core services and equipment and make sure that supported cores are accessible to everyone with a need at UCLA."

As an example of the gains possible from such changes, Evans points to how the BRI merged its confocal core with the CNSI core to avoid an obvious redundancy in confocal access and training. The result was the harnessing of both BRI and CNSI resources to create an enhanced confocal core for all UCLA users.

Strengthening core services requires evaluating their effectiveness and need, determining the quality and relevance of their infrastructure, identifying redundancies and enabling cooperation between departments, institutes and schools to organize essential and advanced cores in the most effective manner. As such, Evans says there needs to be a greater emphasis put on establishing benchmarks against which the cores can be assessed. As a first step in the process, the two BRI facilities are actively soliciting feedback from their users, urging clients to fill out a brief on-line survey.

"Effectively run bioscience cores will be key to the future of multidisciplinary research at UCLA," Evans says. "We need to begin efforts to efficiently organize and evaluate cores to improve their effectiveness, and provide essential cores with stability." With recent reviews of different facets of the campus citing core resources as a priority for attention, coupled with the sunset years of the Chancellor's $7-million for stimulating shared facilities and the current downturn in the financial climate, there has to be university-driven organizational changes on the near horizon for our valued core resources to survive.

EDITORIAL INFORMATION

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BRAIN RESEARCH INSTITUTE UCLA

22ND ANNUAL NEUROSCIENCE POSTER SESSION

Distinguished Lecturer

The Distinguished Lecturer for the 22nd Annual Neuroscience Poster Session at UCLA was Connie Cepko (center), pictured here with BRI member Xian-Jie Yang and BRI Director Chris Evans. Dr. Cepko is a Professor in the Howard Hughes Medical Institute at the Medical School of Harvard University. Her talk was titled "Cell Fate Determination in the Vertebrate Retina," in which she discussed her sometimes surprising findings on rod and cone cell differentiation in the eye.

Fabrice Arcizet , from the lab of BRI member James Bisley, explains his poster "A pure salience response in posterior parietal cortex" to fellow poster session attendee Veronique André, from the lab of Michael Levine.

Travel Award Winners

The excellent research of several students and postdocs was acknowledged by the Awards Committee and SFN to receive BRI/Semel Travel Awards and/or BRI Fine Science Tools Postdoctoral Travel Awards, and by the NSIDP for the Glenn Cornett Graduate Student Travel Awards. BRI Director Chris Evans presented the following awards at the annual BRI poster session:

SFN Graduate Student Travel Award Recipient:
Jason Stein, working with Paul Thompson

SFN Postdoctoral Scholar Travel Award Recipient:
Eiji Shigetomi working with Baljit Khakh

BRI Distinguished Postdoctoral Fellow in Neuroscience Lecture Award: Eiji Shigetomi working with Baljit Khakh

BRI-Semel Undergraduate Student Travel Award Winners:
Wendy Fujioka, working with Joe Watson
Kyle Kelson, working with Richard Olsen
Varun Shahi, working with David Krantz
Alexis Tashima, working with Jack Feldman
Eileen Torres, working with Marie-Françoise Chesselet

BRI-Semel Graduate Student Travel Award Winners:
Aida Attar, working with Joe Watson and Gal Bitan
Jesse Brown, working with Susan Bookheimer
Andrew Brumm, working with Tom Carmichael
Chris Culbertson, working with Arthur Brody
Erin Gray, working with Tom O'Dell
Ben Huang, working with Istvan Mody
Wei Li, working with Jamie Feusner
Sarah Madsen, working with Paul Thompson
Elliott Meer, working with Kelsey Martin
Weisong Ong, working with James Bisley
Justine Overman, working with Tom Carmichael
Esther Richler, working with Baljit Khakh
Florence Roussotte, working with Elizabeth Sowell
Wei Wu, working with Larry Zipursky

Interdepartmental Ph.D. Program for Neuroscience Glenn Cornett Graduate Student Travel Award Winners:
Kristen Henkins, working with Karen Gylys
Dylan Hirsch-Shell, working with Larry Hoffman

BRI-Semel Postdoctoral Scholar Travel Award Winners:
Toh Hean Ch'ng, working with Kelsey Martin (Fine Science Tools Award)
Xue Hua, working with Paul Thompson
Genevieve Konopka, working with Dan Geschwind (Fine Science Tools Award)
Sebastian Kracun, working with Baljit Khakh
Takashi Kudo, working with Chris Colwell
Huiyuan Li working with Gal Bitan
Kerstin Lindemeyer working with Richard Olsen
Iddo Magen working with Marie-Françoise Chesselet
Koorosh Mirpour, working with James Bisley
Amynah Pradhan working with Chris Evans
Prithvi Shah working with Reggie Edgerton
David Shirinyan, working with Susan Bookheimer
Linda Van Leijenhorst, working with Adriana Galván
Kate Wassum, working with Nigel Maidment (Fine Science Tools Award)

Congratulations to all the winners.

Fighting alcohol dependency

Lara Ray's therapeutic approach uses genetics, behavior and pharmacology

As a clinical psychologist, Dr. Lara Ray is confronted daily by the face of addiction. She is determined to bring modern neuroscience's understanding of addiction to the clinical treatment of alcoholism.

Alcohol dependency is a complex stew of behavioral and genetic factors, interacting with social and environmental ones. Combating it requires a multidisciplinary understanding of the disorder. Dr. Ray, an Assistant Professor in the Department of Psychology and member of the BRI, is dedicated to elucidating the genetic and behavioral roots of alcohol addiction.

"For complex mental health problems, a single approach is often quite limited. What we're trying to do is to bridge methodologies to get a better handle on the pathology of the disease. We're especially interested in testing pharmacological therapies and behavioral therapies for addiction. We are also looking at how genetics predisposes people to develop addictions in the first place and – also very importantly – how genetics predispose people to respond to medications," she explained.

Ray is originally from Brazil and studied at San Diego State and the University of Colorado in Boulder before completing her clinical residency and fellowship at Brown University. Her interest in addiction as a disorder came from her work on the Collaborative Study of Genetics of Alcoholism, which helped her decide to focus her graduate career on the genetics of addiction: "I've been fortunate in that during my training I've been able to integrate neurogenetics, pharmacology and clinical psychology," she said.

Alcoholism manifests itself in individuals in many different ways: some of us are natural "heavyweights" who can consume large amounts of booze while seeming to be unaffected by it, while others will get sick from consuming relatively little. Some know when to call it quits, others don't seem to have the same self-control.

"There's a lot of variability in how we experience alcohol, how much we like it, and the high that we feel. And that can predispose us to drink more, or less. Other phenotypes might be cognitive, such as response inhibition – people who can more effectively put the brakes on their behavior, while others are more disinhibited," says Ray. Those variations can combine with social factors, cross-addictions (as to tobacco) and genetic predispositions.

> "There's a lot of variability to how we experience alcohol, how much we like it, and the high that we feel. And that can predispose us to drink more, or less."
>
> ~ Lara Ray

All of this makes for a complex disorder to treat. Ray has developed an interesting line of research exploring the effects of a variation (the G-allele) for the gene coding of the *mu* opioid receptors in the brain. The gene variation appears to affect how people respond to alcohol, as well as to naltrexone, a drug that is used to treat addiction by dampening the intoxication "high." Ray explains that people who have the G-allele variation of that gene have a better high from alcohol, but naltrexone is comparatively better at blunting that high.

This insight could help improve and target therapies for alcoholism.

"There's ongoing discussion in the field about prescribing naltrexone on the basis of genotype, which would be consistent with my research findings," says Ray.

Ray uses a variety of techniques to measure the nature of dependency and self-control. These include imaging studies in which participants are exposed to alcohol cues – small sips of alcohol – while their brain responses are measured. Of course, an MRI scanner is not exactly the same environment as the neighborhood pub, so Ray's subjects are sent out to navigate their daily lives with PalmPilots which are programmed to prompt participants to record their alcohol intake, as well as the frequency and strength of their cravings.

"One of the things we learned from the Palm-Pilot study was the G-allele response we found in the lab held up in the bar. We found that even outside of the lab, when they're drinking in uncontrolled environments, that the G-allelle carriers had a more positive response to alcohol," reports Ray. She is interested in experimental manipulations of the various alcohol-related phenotype – acute tolerance, behavioral inhibition, stress, and craving. "A lot of our studies are laboratory based, and then we follow them with different methodologies to really get a handle on what we're seeing in the lab and how it's influencing drinking outcomes in the real world."

"I have seen the devastating consequences of addiction in many patients I have treated and evaluated for research over the years. The ultimate goal of my program of research is to ameliorate their suffering and to help develop more effective treatments that are informed by genetics and neuroscience."

Three new members join the BRI

Dr. Nim Tottenham studies human emotional development and associated neurobiology. Her laboratory uses structural and functional MRI, behavioral, and physiological measures in toddlers, children, and adolescents to map out normative changes in the neurobiology of emotional reactivity and regulation. Various research projects in her laboratory focus on fear learning and anxiety, implicit learning, and face processing. In addition, she is examining the effects of early caregiving deprivation on these neuro-developmental trajectories by studying children who have been adopted from orphanage care. Her NIMH-funded research follows children longitudinally from childhood through the transition into adolescence to better understand how connectivity between the amygdala and prefrontal cortex are associated with individual differences in emotional behaviors.

Dr. Tottenham earned her PhD in Child Psychology at the University of Minnesota, followed by a postdoctoral fellowship at Weill Cornell Medical College. She has been an Assistant Professor of Psychology at UCLA since 2008.

Dr. Martin Wallner's research focuses on the physiology and pharmacology of GABA(A) receptors, the main inhibitory neurotransmitter receptors in the mammalian brain. Drugs that activate GABA(A) receptor subtypes lead to sedation, anesthesia, anxiolysis and sleep, and are used to treat hyperexcitability disorders like epilepsy and insomnia. His laboratory's particular interest is centered on a unique form of non-synaptic inhibitory action mediated by highly GABA-sensitive extrasynaptic GABA(A) receptor subtypes that show constant (tonic) activity. These types of GABA receptors are not only highly sensitive to relevant low alcohol concentrations, but also to other intoxicating drugs like muscimol, the psychoactive ingredient in the mushroom amanita muscaria. His group has collected evidence that these extrasynaptic GABA(A) receptor subtypes are, in part, responsible for many of the well-known effects of alcohol intoxication. Particularly intriguing is the discovery that behavioral benzodiazepine alcohol antagonists (e.g., Ro15-4513) are competitive alcohol antagonists on extrasynaptic subtypes (a4/6b3d) GABA(A) receptors.

Dr. Wallner earned his PhD from the Institutes of Biotechnology and Medical Physics and Biophysics at the University of Graz, Austria. He has been an Assistant Adjunct Professor in the Department of Molecular and Medical Pharmacology, at UCLA since 2006.

Dr. David S. Williams is studying the photoreceptor cilium, which is extraordinarily modified to form the photoreceptor outer segment, and is affected by many ciliopathies. Projects include ciliogenesis, axonemal transport, barrier/filter functions, and 3-D ultrastructure. He is also interested in the motor proteins involved in the motility of organelles in the retinal pigmented epithelium (RPE). His group uses a combination of mouse genetics, biochemistry, and different forms of microscopy, including live-cell imaging. They are also developing a gene therapy approach for retinal degeneration associated with a form of Usher syndrome (inherited deaf-blindness, caused by mutations in an unconventional myosin gene), and are interested in relationships between retinal degenerations and other neurodegenerative disorders.

Professor Williams earned his PhD from the Australian National University, and has been the Jules and Doris Stein RPB Professor in the Department of Ophthalmology, Jules Stein Eye Institute, and a Professor of Neurobiology in the David Geffen School of Medicine since 2007.

Neuroscience Quotables

"The human brain – this old lizard brain – is tied to novelty, and tied to self-interest."

~ Dr. Peter Whybrow, Director of the Semel Institute for Neuroscience and Human Behavior explains why people accumulate clutter on NBC's Nightly News.

"Our mantra is 'when in doubt, sit them out.'"

~ Pediatric neurologist Christopher Giza in the LA Times on new guidelines for concussions in youth sports.

Congratulations Two BRI Members join AAAS

UCLA professors **Dr. Marie-Françoise Chesselet and Dr. Hong Wu** have been selected as new fellows by the American Association for the Advancement of Science, the world's largest general scientific society and the publisher of the journal *Science*. The selection of fellows has been an AAAS tradition since 1874, http://www.aaas.org/.

Chesselet and Wu are among 503 scholars chosen this year for scientifically and socially meritorious applications of their work, according to the AAAS. They will receive official recognition February 19th at the society's annual meeting, in Washington, D.C.

Dr. Marie-Françoise Chesselet, Charles Markham Professor of Neurology, and Chair of the Department of Neurobiology, was selected for "molecular, anatomical and behavioral analyses to identify the cellular and molecular mechanisms responsible for, and the treatment of, Parkinson's disease in animal models." The goal of Chesselet's research is to develop new therapeutic treatments for neurodegenerative diseases.

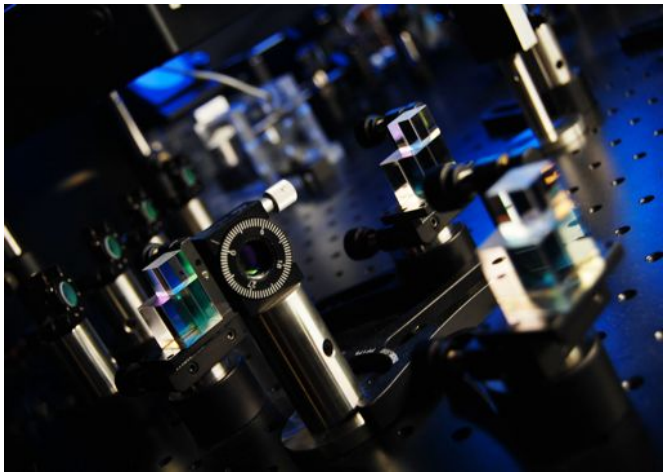
Dr. Hong Wu, Professor of Molecular and Medical Pharmacology, Associate Director at the Institute for Molecular Medicine, and a researcher with the Jonsson Comprehensive Cancer Center, was selected for "distinguished contributions to the fields of PTEN/PI3-kinase signaling pathway, cancer biology and cancer stem cell biology." Wu's research links cancer biology and stem cell biology and suggests that tumors may originate through the transformation of stem cells.

AAAS <http://www.aaas.org/>, founded in 1848, is a nonprofit organization that includes 262 affiliated societies and science academies and serves 10 million people. The association's mission is to "advance science and serve society" through initiatives in science policy, international programs and science education, including its website devoted to science news, EurekAlert!, at www.eurekalert.org

UCLA-designed two photon in-vivo microscope records firing of thousands of individual neurons in 3-D

By Mark Wheeler

Some disorders of the brain are obvious — the massive death of brain cells after a stroke, the explosion in the growth of cells that marks a tumor. Other disorders, such as autism, schizophrenia and mental retardation show no physical signs of damage and are believed to be caused by problems in how brain cells communicate with one another.



To understand the root of the problem of these latter diseases, visualizing brain activity is key. But even the best imaging devices available — fMRIs and PET scans — can only give a "coarse" picture of brain activity.

UCLA neuroscientists have now collaborated with physicists to develop a non-invasive, ultra–high-speed microscope that can record in real time the firing of thousands of individual neurons in the brain as they communicate, or miscommunicate, with each other.

"In our view, this is the world's fastest two-photon excitation microscope for three-dimensional imaging in vivo," said UCLA physics professor Katsushi Arisaka, who designed the new optical imaging system with UCLA assistant professor of neurology and neurobiology Dr. Carlos Portera-Cailliau and colleagues.

Their research appears in the Jan. 9 edition of the journal *Nature Methods*.

Because neuropsychiatric diseases like autism and mental retardation often display no physical brain damage, it's thought they are caused by conductivity problems — neurons not firing properly. Normal cells have patterns of electrical activity, said Portera-Cailliau, but abnormal cell activity as a whole doesn't generate relevant information the brain can use.

"One of the greatest challenges for neuroscience in the 21st century is to understand how the billions of neurons that form the brain communicate with one another to produce complex behaviors," he said. "The ultimate benefit from this type of research will come from deciphering how dysfunctional patterns of activity among neurons lead to devastating symptoms in a variety of neuropsychiatric disorders."

For the last few years, Portera-Cailliau has been using calcium imaging, a technique that uses fluorescent dyes that are taken up by neurons. When the cells fire, they "blink like lights in a Christmas tree," he said. "Our role now is to decipher the code that neurons use, which is buried in those blinking light patterns."

But that technique had its limitations, according to Portera-Cailliau.

"The signal of the calcium-based fluorescent dye we used faded as we imaged deeper into the cortex. We couldn't image all the cells," he said.

Another problem was speed. Portera-Cailliau and his colleagues were concerned they were missing information because they couldn't image a large enough portion of the brain fast enough to measure the group-firing of individual neurons. That was the driving impulse behind the collaboration with Arisaka and one of his graduate students, Adrian Cheng, to find a better way to record neuronal activity faster.

The imaging technology they developed is called multifocal two-photon microscopy with spatio-temporal excitation-emission multiplexing — STEM for short. The researchers modified two-photon laser-scanning microscopes to image fluorescent calcium dyes inside the neurons, and came up with a way to split the main laser beam into four smaller beamlets. This allowed them to record four times as many brain cells as the earlier version, or four times faster. In addition, they used a different beam to record neurons at different depths inside the brain, giving a 3-D effect, which had never been done previously.

'Long-shot' discovery may lead to advances in treating anxiety, memory disorders

Researchers, led by UCLA professor of psychology Michael Fanselow, have discovered what may be a completely unexplored drug target for the treatment of anxiety disorders. The research was published January 7 in the journal *Science*. The study holds promise for the future development of treatments for post-traumatic stress disorder and other anxiety disorders, and potentially for Alzheimer's disease and other memory-impairment diseases.

Normally, when people or animals experience a frightening event, they learn to fear the place of the event and any signals that were present at the time. This occurs because the nerve cells in certain brain regions increase their ability to excite or stimulate one another, said Fanselow,.

Most neuroscience research has emphasized how this phenomenon occurs through chemical communication among neurotransmitters flowing across synapses — the space between neurons. However, there are also small, inhibitory neurons in these regions as well, which have direct electrical contact with one another through connecting channels known as "gap junctions," Fanselow said. Gap junctions are very common in invertebrates but rare in mammals, where they are found on only certain inhibitory interneurons.

See more: http://newsroom.ucla.edu/portal/ucla/long-shot-discovery-may-lead-190127.aspx

Brain imaging studies examine how anti-smoking medications may curb cravings

The smoking cessation medication bupropion may be associated with changes in the way the brain reacts to smoking cues, making it easier for patients to resist cravings, according to a report that will appear in the May print issue of *Archives of General Psychiatry*, one of the *JAMA/Archives* journals.

Bupropion, originally marketed as an antidepressant, was found to enhance smoking cessation in patients with depression and is now one of the most common therapies for smoking cessation in the world. It is known to reduce cravings in response to smoking cues, but its mechanism for doing so is not well understood. In one study, Christopher S. Culbertson, Ph.D., of the University of California, Los Angeles, and colleagues assessed changes in brain activation in response to smoking cues among 30 smokers who were randomly assigned to take either bupropion or placebo for eight weeks.

See More: http://pubs.ama-assn.org/media/2011a/0103.dtl#6

Neural stem cells maintain high levels of reactive oxygen species, UCLA study finds

For years, the majority of research on reactive oxygen species (ROS) — ions or very small molecules that include free radicals — has focused on how they damage cell structure and their potential link to stroke, cardiovascular disease and other illnesses.

However, researchers at the Eli and Edythe Broad Center of Regenerative Medicine and Stem Cell Research at UCLA have shown for the first time that neural stem cells, the cells that give rise to neurons, maintain high levels of ROS to help regulate normal self-renewal and differentiation.

The findings, published in the January 7th issue of the journal *Cell Stem Cell*, may have significant implications for brain repair and abnormal brain development.

See more: http://newsroom.ucla.edu/portal/ucla/neural-stem-cells-maintain-high-190160.aspx?

UCLA JOINT SEMINARS IN NEUROSCIENCE

Sponsored by The Brain Research Institute, The Semel Institute for Neuroscience & Human Behavior and The David Geffen School of Medicine at UCLA. Neuroscience Research Building Auditorium (NRB) 4:00 pm

February 15, 2011
DON W. CLEVELAND, Ph.D.
The Ludwig Institute and Departments of Neuroscience, ad Cellular and Molecular Medicine, University of California, San Diego
"From Charcot to Lou Gehrig: Mechanisms and Treatment of ALS"
Host: William Yang; XWYang@mednet.ucla.edu

February 22, 2011
RICHARD IVRY, Ph.D.
Department of Psychology and Neuroscience, University of California, Berkeley
"Competitive and Inhibitory Processes During Action Selection"
Host: Dean Buonomano; dbuono@ucla.edu

March 1, 2011
JOHN LISMAN, Ph.D.
Department of Biology, Volen Center for Complex Systems, Brandeis University, Waltham, Massachusetts
"Mechanisms of Short-term and Long-term Memory"
Host: Felix Schweizer; felixs@ucla.edu

March 8, 2011
The Brain Research Institute Twenty-Second Annual H.W. Magoun Lecture
(See inset)

SPRING BREAK

March 29, 2011
Charles H. (Tom) Sawyer Distinguished Lecture
DARCY B. KELLEY, Ph.D.
Harold Weintraub and HHMI Professor of Biological Science; Co-Director, Doctoral Program in Neurobiology and Behavior, Columbia University, New York
"Neuroendocrine Decoding of Vocal Communication Signals"
Host: Art Arnold and the LNE; arnold@ucla.edu

April 5, 2011
KIMBERLY M. HUBER, Ph.D.
Department of Neuroscience, University of Texas Southwestern Medical Center, Dallas, Texas
"Regulation of Synaptic Plasticity and Development by Fragile X Mental Retardation Protein"
Host: Carlos Portera-Cailliau; CPCailliau@mednet.ucla.edu

April 12, 2011
ROBERT DESIMONE, Ph.D.
Professor, Department of Brain and Cognitive Sciences; Director, McGovern Institute for Brain Research, Massachusetts Institute of Technology, Cambridge
Title to be announced
Host: James Bisley; JBisley@mednet.ucla.edu

April 19, 2011
KAMRAN KHODAKHAH, Ph.D.
Professor, Dominick P. Purpura Department of Neuroscience, Albert Einstein College of Medicine, Bronx, New York
"Neural Substrates of Rapid-Onset Dystonia Parkinsonism"
Host: Felix Schweizer; felixs@ucla.edu

April 26, 2011
DAVID W. TANK, Ph.D.
Department of Molecular Biology, and the Princeton Neuroscience Institute, Princeton University, Princeton, New Jersey
Title to be announced
Host: Carlos Portera-Cailliau; CPCailliau@mednet.ucla.edu

The Brain Research Institute
22nd Annual H.W. Magoun Lecture

"Signaling Between Synapse and Nucleus During Neuronal Plasticity"

Kelsey C. Martin, M.D., Ph.D.

Professor and Chair of Biological Chemistry
Professor of Psychiatry & Biobehavioral Sciences
Eleanor Leslie Term Chair in Innovative Brain Research, Brain Research Institute
University of California, Los Angeles

March 8, 2011, 4:00 pm
Neuroscience Research Building Auditorium

Immediately following the lecture, a special reception in honor of Kesley Martin will be held in the Gonda (Goldschmied) Neuroscience and Genetics Research Center First Floor Conference Room, 1357. Please join us!

May 3, 2011
MICHAEL GRAZIANO, Ph.D.
Department of Psychology, Princeton University, Princeton, New Jersey
"The Organization of Behavioral Repertoire in the Motor Cortex"
Hosts: Istvan Mody and Ben Huang; mody@ucla.edu

May 10, 2011
EVE E. MARDER, Ph.D.
Head, Division of Science, Victor and Gwendolyn Professor of Neuroscience, Volen Center and Biology Department, Brandeis University, Waltham, Massachusetts
"Beyond the Mean to the Individual: Variability, Compensation, and Homeostasis in Neuronal Circuits"
Host: Felix Schweizer; felixs@ucla.edu

May 18, 2011
The 19th Annual Samuel Eiduson Student Lecture
JASON STEIN
Interdepartmental PhD. Program in Neuroscience, University of California, Los Angeles
"Searching for Genetic Influences on Brain Structure"
Host: Mike Levine; mlevine@mednet.ucla.edu

May 24, 2011
Speaker and Title to be Determined

June 1, 2011
PAUL G. MERMELSTEIN, Ph.D.
Department of Neuroscience, University of Minnesota, Minneapolis
"Membrane Estrogen Receptors Activate Metabotropic Glutamate Receptors to Affect Nervous System Function"
Host: Paul Micevych; pmicevych@mednet.ucla.edu

If you would like to meet with a speaker, please contact the host directly at e-mail address listed above.

EMPLOYMENT CANDIDATES

The BRI regularly receives letters and resumes from people looking for work in the field of neuroscience. Below is an abbreviated list of the candidates and the type of work they seek. Copies of their resumes are often available in our editorial office. If you are interested in one or more of these individuals, please contact them directly, or call the editorial office at x56055.

Sattar Khoshkhoo graduated from UCLA in Fall, 2010, with a major in neuroscience and a minor in biomedical research. She has nearly four years of continuous research experience working for Dr. Portera-Cailliau and Dr. Silva and has been both a Howard Hughes Scholar and an Amgen Scholar. She would like to obtain a position in a laboratory at UCLA.

Please contact Sattar directly at: sattar.kh@gmail.com

Elton Migliati recently finished postdoctoral training in the field of stroke with Dr. Patricia Hurn, Professor and Associate Dean in the School of Medicine at the Oregon Health & Science University. He completed his PhD and Masters training at the University of Arizona with Dr. Andrea Yool. At this time he is looking for a faculty position in the field of stroke to take advantage of his strong systems physiology background, however, he is also open to other related areas. His major interests are, but not limited to: the role of aqp4 in the pathophysiology of cerebral edema, the role of the spleen in the neuroprotection after cerebral ischemia and the interrelationship of exercise in the immunological role of the spleen after stroke.

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Arunesh Saras is currently a postdoctoral fellow in Dr. Robert Zucker's lab at the University of California, Berkeley, where he is working on genetic analysis of neuromodualtion in *Drosophila* at neuro muscular junctions (NMJs). He is interested in a research position at UCLA. Work in Dr. Zucker's laboratory explores the physiological mechanisms responsible for differences in initial synaptic strength and short- term synaptic plasticity at different crayfish NMJs, and the major biochemical pathways underlying serotonergic modulation of glutamatergic NMJ transmission in crayfish. It has been discovered that serotonin's action is mediated by adenosine 3',5'- cyclic monophosphate (cAMP), and its activation of presynaptic hyperpolarizing and cyclic nucleotide-activated ion channels (HCNCs) and exchange protein activated by cAMP (Epac).

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