In the Spotlight

John F. Guzowski, Ph.D., and Marcelo A. Wood, Ph.D., are the most recently arrived assistant professors and Fellows in the Center for the Neurobiology of Learning and Memory (CNLM). Both study the molecular mechanisms involved in long-term memory. Their research programs are distinct from one another, yet complementary, and will help to inform us how the process of making memories is begun inside neurons and how it is carried on to larger cell networks.

John Guzowski hails from Michigan, where he completed his undergraduate studies at Oakland University. He came west to continue his studies and received his Ph.D. from the Department of Molecular Biology and Biochemistry at UC Irvine in 1994. Afterward, John moved on to a number of research and faculty positions across the country, including Johns Hopkins University, University of Arizona and University of New Mexico; a path which increased his desire to understand brain processes at many different levels including the molecular, cellular, systems and behavioral levels. In October 2005, he returned ‘home’ to UCI where he became a Fellow of the CNLM and Assistant Professor in the Department of Neurobiology and Behavior.

John’s research program focuses on understanding how genes activated by experience (learning) influence networks of cells involved in long-term memory storage, and how the interaction of such cell networks are involved in encoding and consolidating memories. John’s laboratory is particularly interested in the role of immediate early genes (IEGs) in the cascade of creating and maintaining memory. IEGs are known to play a critical part in the memory process, but the exact mechanism by which they do so is just beginning to be understood. In addition to furthering our understanding of how memory works, the practical application of John’s research program is to aid our understanding of cognitive impairment and diseases.

Marcelo Wood was born in Chile, but came to the United States at a young age. He completed his undergraduate studies at the University of Colorado, Boulder, which is close to his hometown. He received his Ph.D. from the Department of Molecular Biology at Princeton University in 2000, where he studied the molecular biology of cancer. He then headed to the University of Pennsylvania to study molecular processes in the brain as a postdoctoral fellow. Marcelo arrived at our Center in January 2006, where he is now a Fellow of the CNLM and an Assistant Professor in Neurobiology and Behavior.

Marcelo’s research program focuses on gene transcription or how genes in neurons are ‘turned on’ to initiate the complicated processes essential for long-term memory storage. Marcelo’s laboratory is particularly interested in histone acetylation and epigenetic regulation, which are methods by which enzymes allow genes essential to beginning the memory cascade to be activated. Marcelo’s lab uses transgenic mice to test hypotheses about the effects of different enzymes on memory. One recent project combined Marcelo’s past cancer work with his interest in the brain and found that histone deacetylase (HDAC) inhibitors, a drug used to attack cancerous tumors, acts also to activate genes resulting in memory enhancements. The work in Marcelo’s laboratory has practical applications for understanding diseases such as Huntington Disease and Rubenstein-Taybi syndrome.

For more in depth information about Dr. Guzowski’s and Dr. Wood’s research programs, please see our website at www.cnlm.uci.edu/faculty.htm
The CNLM presents several end-of-the academic-year awards which are generously sponsored by Renée Harwick, Roger Russell family and friends, Jim and Becky McGaugh and the Friends of the CNLM support group. The 2007 awardees are:

**Renée Harwick Advanced Graduate Student Award** — to a student who has advanced to Ph.D. candidacy and shows strong scientific promise: Xiao-jing Ye, Dr. Thomas Carew’s laboratory

**Roger W. Russell Scholar’s Award** — to a graduate student or postdoc who shows exacting scholarship, collegiality and support of CNLM programs: Kasia Berlau, Dr. Norman Weinberger’s laboratory

**Carol Becker McGaugh Award** — undergraduate student completing the second to last year of studies for outstanding research in the neurobiology of learning and memory: Kwan Wong, Dr. Norman Weinberger’s laboratory

**Friends of the CNLM Summer Awards** — presented to outstanding undergraduates working in a CNLM lab, to allow them to continue their work during the summer: Megan Ikeda and Christine Petrossian, Dr. John Guzowski’s laboratory

**Friends of the CNLM Summer Awards for High School Students** — provides an opportunity for high school students to gain research experience in a university lab setting: Christopher Cottrell, Corona del Mar HS, Dr. Claudia Kawas’ laboratory

This year’s awards ceremony was held in the Dale Melbourne Herklotz Conference Center on June 5th.

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**School Tours**

The CNLM Friends group helps sponsor our many outreach programs. One of our most rewarding outreach efforts is our school tours for both primary and secondary level classes. These tours offer a fun and hands-on experience that allows students to learn about the brain. Our tours include a presentation on brain function and health, and hands-on exhibits.

Each tour ends with an inside look of our labs located in the Qureshey and Bonney Research Laboratory buildings. Students are able to walk through labs and get a feel of what it is like to work as a scientist. Researchers who work in the lab give an explanation of what recent research is being conducted.

Our tours would not be possible if it were not for our docents. Our docents are volunteers who help teach students about the brain using the presentation and hands-on exhibits. A number of our docents come from the community, although, UCI graduate students and undergraduates volunteer as well. No past experience is required to become a docent, as we provide thorough training.

If you would like more information regarding school tours, or becoming a docent, please contact us at (949) 824-7566.

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**Meet our Donors**

**Featuring John C. Herklotz**

John C. Herklotz is the largest single donor to CNLM building campaigns. His generous contribution helped the CNLM to expand our research, conference and office facilities.

John Herklotz was born and raised in Chicago, Illinois, and graduated from DePaul University. He served as financial advisor of the Chicago Tribune and WGN Broadcasting for 17 years and has since worked as a media consultant and broadcast station broker. He is currently President and owner of Herklotz Enterprises, Inc., a company that develops, produces and promotes quality full-length family films.

Known for his philanthropy, Herklotz supports a number of institutions including DePaul University, John Brown University, Children’s Hospital of Los Angeles, the Alzheimer Disease Research Center at the University of Southern California, and the House Ear Institute.

John’s wife, Dale Melbourne Herklotz, was a well-acclaimed concert pianist and actress. She was diagnosed with Alzheimer disease in 1990 and died in 1998. Herklotz has endowed a fund that supports the CNLM’s Evenings to Remember lectures in her memory.

Other building campaign donors include Safi and Anita Qureshey, Kathleen Burke, David and Phylis Hsia, Joseph and Sou-Lin Lee, the Irvine Health Foundation, Gerard Family Trust, Audrey Schneiderman and Robert and Meryl Bonney.
Dr. Frank LaFerla Discusses AD

Frank LaFerla, Fellow of the CNLM and Professor of UCI’s Department of Neurobiology and Behavior, gave the first lecture in The Thirteenth UCI Distinguished Lecture Series held at the Irvine Barclay Theatre. He gave an inspiring talk about current research on Alzheimer disease. Alzheimer disease (AD) is the most common brain disorder to afflict the elderly. One in 20 adults over the age of 65 and one in three over the age of 85 is afflicted with AD. It is estimated that 5 million Americans are living with this disease. At present, there are no effective treatments that slow or reverse the disease course.

In his lecture, Dr. LaFerla discussed the latest efforts by scientists to identify therapies for the disease, including his own breakthrough research on understanding the disease mechanism. He also discussed some possible preventative measures. Frank's laboratory has developed a triple transgenic mouse model of AD. These mice develop both plaques and tangles, the hallmark of AD, in AD-affected parts of the brain, thus making an excellent research model. Frank's lab, and now other labs worldwide, use these mice in their research in hope of finding an effective treatment. He is optimistic that within fifteen years an effective treatment option will be available.

Frank's research has led him to recommend some preventative strategies that may reduce or slow down the development of AD in adults. These include:

- Cognitive stimulation – Use it or lose it. People who are bi-lingual, well-educated, do crossword puzzles and read often fare better;
- Diet – Eat healthy foods such as blueberries and foods that contain DHA (omega 3 fatty acid) such as fish;
- Stress – Stress management through environmental and pharmacological means may reduce the likelihood of developing AD;
- Smoking/Nicotine – Smoking increases the likelihood of developing AD.

To learn more about Dr. LaFerla’s research visit our website at www.cnlm.uci.edu/faculty.htm

Fellow Elected President

Thomas J. Carew, Fellow of the CNLM and Donald Bren Professor and Chair of UCI’s Department of Neurobiology and Behavior, has recently been elected president of the Society for Neuroscience (SfN). SfN is the world’s largest organization of scientists dedicated to the study of the brain. It is a nonprofit membership organization of basic scientists and physicians who study the brain and nervous system. SfN was formed in 1969 and has grown from 500 members to over 36,000. The Society has 117 local chapters for grassroots representation of the neuroscience community. Around the world, these chapters hold scientific lectures and other activities on brain, learning and memory.

Tom’s research interest is in the neural basis of diverse forms of memory. He seeks to identify the molecular and cellular mechanisms that allow some memories to last a few seconds and others to last a lifetime. Researchers in his laboratory use a relatively simple marine mollusk, Aplysia, as their experimental system because its nervous system affords significant advantages for identifying synaptic, biophysical, and molecular changes underlying different stages of memory. The goal of their experiments is to achieve an understanding of the mechanisms by which the nervous system acquires, stores, and retrieves information.
Dates to Remember

The 14th UCI Distinguished Lecture Series on Brain, Learning and Memory

Wednesday, January 16
Wednesday, March 19
Wednesday, May 14

All lectures are held at the Irvine Barclay Theatre
4242 Campus Drive

October will Commemorate the 10th Anniversary of the Dedication of the Herklotz Research Facility and Anisa Qureshey Research Laboratory and the 25th Anniversary of the Founding of the CNLM

An announcement will be sent inviting campus and community members to a reception in our courtyard on 10/25

Ways you can become involved...

* Join our Friends
* Become a tour docent
* Buy a brick on Memory Lane
* Support the James L. McGaugh Chair campaign
* Attend a scientific colloquium or public lecture
* Name a garden bench
* Visit our website: http://www.cnlm.uci.edu

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