



ISSUE 1
Fall 2007

**Facts about
CNLM:**

- The CNLM was the first research institute in the world dedicated exclusively to the study of the basic brain mechanisms that allow us to acquire, retain and use information
- CNLM has 37 faculty Fellows who come from UC Irvine, UCLA, UC San Diego, USC, the Scripps Research Institute and Caltech
- The CNLM was founded by UCI faculty including James L. McGaugh and Norman M. Weinberger

**Inside this
issue:**

In the Spotlight	1
Student Awards	2
School Tours	2
Meet our Donors	2
Director's Corner	3
Dr. LaFerla Discusses AD	3
Fellow Elected President	3
Dates to Remember	4

NEURO TIMES

The newsletter of the
Center for the Neurobiology of
Learning and Memory

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



Marcelo A. Wood and John F. Guzowski

(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

Student Awards



CNLM Award winners

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.

*"Memory
is the
Bridge to
Our Past
and Our
Future."*

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 com-

munity, 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.

Meet our Donors Featuring John C. Herklotz



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.

Director's Corner

It's a great pleasure to welcome readers to our inaugural newsletter. Its regular publication will help keep friends and supporters up to date with developments at the Center, and give us the opportunity to introduce our Fellows and their research programs. The present edition of the newsletter gives some indication of the diversity of the research conducted by our 37 Fellows and their research groups. This ranges from studies of the biochemistry of the single cell, to the analysis of memory-related changes in the function of specific brain structures and networks, through to the study of brain activity and its relation to behavior in animals and humans. Be-

tween them, these programs encompass almost all current experimental approaches to the study of learning and memory, and represent a unique concentration of expertise in the field. The many opportunities provided by the Center for researchers to interact and learn from one another are among its greatest strengths.

This year marks two important milestones. It is the 25th anniversary of the founding of the Center, and of the appointment of its first director, Dr. James McGaugh. The year 2007 is also the 10th anniversary of the naming of the Herklotz Research Facility and the opening of the

Qureshey Research Laboratory, the second of the two buildings (after the Bonney Research Laboratory) constructed specifically to accommodate the Center, and housing our administrative and conference facilities in addition to several research laboratories. Aptly, we will be celebrating both of these anniversaries at a special event to be held on October 25th. I hope we will see you there, and also at the Barclay Theatre in the new year for the next series of our Distinguished Lectures on Brain, Learning and Memory.



Michael D. Rugg

Dr. Frank LaFerla Discusses AD



Frank LaFerla

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 world-wide, 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 activi-



Thomas J. Carew

ties for the educational advancement of neuroscientists. As president of SfN, Tom will have an opportunity to work with government officials to influence and shape policy on scientific research. His term in office is three years: the first as president elect, the second as president, and the third as past president. Scientists who hold these three positions form the executive committee of the SfN.

Tom's research interest is in the neuronal 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.



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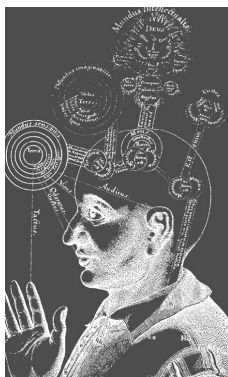
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Dates to Remember

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**



Memory Lane

Celebrating
10 CNLM 25
UC Irvine

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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