CENTER FOR THE NEUROBIOLOGY OF
LEARNING & MEMORY
UNIVERSITY OF CALIFORNIA, IRVINE

MEMORY IS THE BRIDGE TO OUR PAST AND OUR FUTURE

NEURO TIMES

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

ISSUE 3
Fall 2008

Facts about CNLM:

- Over $30,000 has been given to support postdocs, graduate students, undergrads and high school students during our end-of -the-year CNLM Awards Ceremonies
- More than 60% of Memory Lane, a brick pathway in the CNLM Courtyard, is filled with personalized engraved bricks from those who have generously donated to the Center
- The UCI Distinguished Lecture Series on Brain, Learning and Memory will welcome its 43rd, 44th and 45th speaker for the 2009 series. Please see *Dates to Remember* for dates and speakers

Inside this issue:

In the Spotlight

Leslie M. Thompson

Dr. Leslie M. Thompson may be well known at the University of California, Irvine, but she is a new Fellow of the Center for the Neurobiology of Learning and Memory. She currently is an Associate Professor in the School of Medicine, Departments of Psychiatry and Human Behavior and Biological Chemistry, and in the School of Biological Sciences, Department of Neurobiology and Behavior. She is also the Director of the Interdepartmental Neuroscience Program (INP). Leslie completed her Ph.D. in Biological Sciences from UCI in 1989 and has remained here continuing her research.

Leslie's research involves the molecular and biochemical studies of the human genetic disorder of Huntington's disease (HD). This neurodegenerative disease results from genetically-programmed degeneration of neurons primarily in the brain's striatum and cortex. The degeneration causes patients to have uncontrollable movements, lose intellectual faculties and to have emotional disturbances. The symptoms of HD start gradually, typically during mid-life, at a point when individuals are often their most productive, and progress over a period of 10-20 years. HD is passed from parent to child through a mutation in the huntingtin gene, which means each child of an HD parent has a 50-50 chance of inheriting the HD gene. If the child does not inherit the HD gene, then the gene can no longer be passed onto that child's offspring. Huntington's disease is currently incurable.

History tells us that Huntington's disease has been around for a very long time, possibly since the Middle Ages. George Huntington, an American physician, wrote an academic paper about the disease in 1872 and it was subsequently named after him. It was not until 1993 that the huntingtin gene was discovered. Scientists are still attempting to learn precisely what the function of the normal huntingtin gene is, but they do know that we are not able to survive without it. Genes are made up of DNA, which itself is made up of paired chemicals called bases. Research has shown that the normal huntingtin gene has a repeating stretch of three of these bases, and that the mutant gene abnormally repeats this three base sequence dozens of times. This mutant gene expresses into a mutant huntingtin protein that is responsible for wreaking the havoc which becomes Huntington's disease. The huntingtin gene, if inherited, is a dominant gene.

Patients with Huntington's disease may have physical, psychiatric and cognitive symptoms. The disease can cause severe cognitive problems such as loss of memory, loss of judgment, and loss of the capacity to organize oneself. Leslie's research focuses on understanding how the mutant huntingtin protein causes HD and finding treatments to improve symptoms associated with the disease, including cognitive symptoms. Her research group developed the concept that the use of histone deacetylase inhibitors (HDAC inhibitors) might be protective in HD. HDAC inhibitors are substances that cause a chemical change that stops cells, such as cancer cells, from dividing and can have protective effects in a brain cell. The use of HDAC inhibitors may help control some of the gene expression alterations caused by the mutant huntingtin gene and may influence a process to help get rid of the toxic mutant huntingtin protein that is produced through the mutant gene expression. HDAC agents are currently in human clinical trials for use in HD. Leslie also hopes to understand exactly how the mutant huntingtin protein that causes HD alters brain function and identify ways to apply that knowledge to treatments that will prevent this process from occurring.

Leslie's research led her to accompany Dr. Nancy Wexler of the Hereditary Disease Foundation, to Lake Maracaibo, a fishing village in Venezuela. In 1979, Dr. Wexler had discov-

"In the Spotlight" Cont. from page 1

ered that in this city, HD happened four times as often as it does in the United States. She learned that the reason why the villagers had more cases of HD was because of the large number of children and intermarriages. Multiple blood samples from the villagers were collected in hope of identifying the gene that causes HD. In 1993 the HD gene was discovered by the Huntington Disease Collaborative Research Group, a group organized and supported by the Hereditary Disease Foundation. In 1996 Leslie began traveling to Venezuela for one to two weeks at a time over the next four years to assist with collecting genetic information and other types of data.

Leslie has always wanted to study human disease and understand it in the context of brain function, including learning and memory. Once she became involved with HD families, she became completely committed to understanding and developing treatments for this devastating disease. To learn more about Dr. Thompson's research please see our website at www.cnlm.edu/faculty.htm.

CNLM Awards Wrap-up

Marcelo Wood and Noel Federman

Maria "Noel" Federman is the first recipient of the Friends of the CNLM Foreign Graduate Student and the Renée Harwick Visiting Scholars Awards. These awards are sponsored by our Friends group and Dr. Renée Harwick, a long-time supporter of the CNLM, and provide travel funds and a stipend for graduate students from abroad to come to Irvine and study in a CNLM lab for up to 6 months. Noel is the awards recipient for the year 2007. She is a doctoral student from the University of Buenos Aires, Argentina. She arrived at the Center in May and stayed through July, working in the laboratory of Dr. Marcelo Wood. In Argentina, Noel studies the activity of genes during different memory phases using an experimental model of associative learning in *Chasmagnathus granulathus* crabs. She is particularly interested in studying how changes in the structure of chromatin, the substance that makes up chromosomes, influence gene activity during long term memory formation. In the Wood lab she worked on a project aimed at understanding the molecular mechanisms underlying long-term memory for novel object recognition. This study contributed significantly to launching a new direction of investigation in the Wood lab, which will be continued in collaboration with Noel's advisor, Dr. Arturo Romano, in Argentina. Noel's research results also contributed to data used in a grant application and are currently in preparation for publication.

Other awards given at the CNLM Awards Ceremony were: ***Renée Harwick Advanced Graduate Student Award*** – Sponsored by an endowment established by Dr. Renée Harwick. Given to a student who has advanced to Ph.D. candidacy and shows strong scientific promise. The 2008 awardee is Kasia Bieszcad in the laboratory of Dr. Norman Weinberger.

Roger W. Russell Scholar's Award – Sponsored by an endowment established by Dr. Russell's friends and family in his memory. Given to a graduate student or postdoc who shows exacting scholarship, collegiality and support of CNLM programs. The 2008 awardees are Joe Andreano in the laboratory of Dr. Larry Cahill and Gary Philips in the laboratory of Dr. Thomas Carew.

Carol Becker McGaugh Award – Sponsored by an endowment established by Jim and Becky McGaugh. Given to an undergraduate student completing the second to last year of studies for outstanding research in the neurobiology of learning and memory. The 2008 awardee is Shanoor Khan in the laboratory of Dr. Thomas Carew.

Friends of the CNLM Summer Awards for Undergraduates – Sponsored by the Friends of the CNLM. Given to outstanding undergraduate students who have been working in a CNLM lab, to allow them to continue their work during the summer. The 2008 awardees are Ho-An Kang in the laboratory of Dr. Raju Metherate and Andreea Marina in the laboratory of Dr. Thomas Carew.

Friends of the CNLM Summer Awards for High School Students – Sponsored by the Friends of the CNLM. The award provides an opportunity for high school students to gain research experience in a university lab and to provide them with financial assistance to do so. The 2008 awardees are Elise Molnar from Corona del Mar HS, who worked in the laboratory of Dr. Craig Stark, and Michelle Yu from Aliso Niguel HS who worked in the laboratory of Dr. Thomas Carew.

And the ***CNLM Foreign Graduate Student and the Renée Harwick Visiting Scholars Award*** for 2008 is Gustavo Reolon, a graduate student from the Federal University of Rio Grande do Sul (UFRGS), Porto Alegre, Brazil. He will arrive from Brazil in November.

Kasia Bieszczad, Gary Philips and Joe Andreano

"A smile happens in a flash, but a memory can last a lifetime"

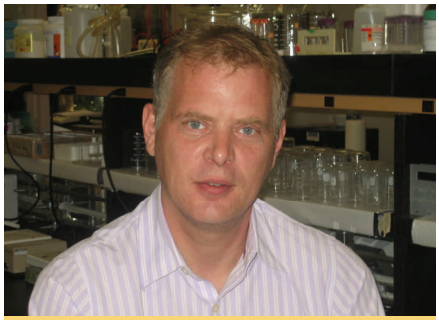
-Author unknown

Director's Corner

Michael D. Rugg

The coming of the Fall marks the start of a new academic year and a new program of events and activities at the Center. We have already hosted our CNLM Friends Group at the first of our two 'Evenings to Remember', and look forward to a second evening in November. We also look forward to the presentations by the three truly exceptional scientists contributing to our fifteenth program of public lectures in the Barclay Theater (see below), and to a host of scientific events for the benefit of our Fellows and their lab members. Additionally, the new academic year heralds new priorities for the Center's fund-raising efforts. Thanks to the extraordinary generosity of so many of you, donations and pledges toward an endowment to support a Chair to be named in honor of Dr Jim McGaugh (the McGaugh Chair in the Neurobiology of Learning and Memory) have now reached $1 million. The achievement of this target allows us to both establish the Chair and to begin to focus on new funding priorities. Detailed information about these priorities will follow shortly, but they include the establishment of an endowment to support the training of graduate students, and an 'innovation fund' to support the development of cutting-edge ideas and research in its earliest stages. We look forward to working with our many friends and supporters as we strive to achieve these goals and advance the scientific and educational missions of the Center.

Fellow Says, 'Farewell'



Benno Roozendaal

Dr. Benno Roozendaal, an Associate Fellow of the CNLM and longtime researcher in the laboratory of Dr. James L. McGaugh, left UCI for a faculty position at the University of Groningen, The Netherlands. His new position will be Professor and Chair in the Department of Anatomy. For the past 15 years at the CNLM, Benno worked long hours and enjoyed many successes in his research. He published over 85 papers during his stay, tallying over 100 papers in his career, a huge accomplishment for a scientist. While here he was the recipient of the Curt P. Richter Prize in Psychoneuroendocrinology and was awarded a National Science Foundation grant. Benno trained and mentored over 60 undergraduate students, six graduate students and nine postdocs in the McGaugh Lab, one of whom will join him at Groningen in October.

Benno will be sadly missed, but the relationships he created while he was here will be everlasting. We wish him the best of luck in his research and his career.

Fifteen Years of Public Lectures

This year will mark the 15th annual UCI Distinguished Lecture Series on Brain, Learning and Memory held at the Irvine Barclay Theatre. For 15 years the CNLM has organized this free lecture series for the public, to update the community on the latest in brain research. Speakers from all over the world, including from UCI, have given lectures about their research in a wide variety of areas of neuroscience including Alzheimer Disease, schizophrenia, autism, sleep, drug addiction and brain aging. There is hardly an empty seat in the Barclay Theatre, which is a 750-capacity venue. The lectures are popular with high school students, who have been loyal attendees thanks to their dedicated science teachers. Teachers may take advantage of free busing and free parking permits for school groups who call the CNLM in advance. High schools who have attended past lectures include: Corona del Mar HS, Estancia HS, Foothill HS, Laguna Beach HS, Newport Harbor HS, Northwood HS, Sage Hill School, Woodbridge HS, Huntington Beach HS, University HS, Fountain Valley HS, Costa Mesa HS, Irvine HS, and Middle College HS.

Lecture dates and speakers for 2009 are:

January 20, Michael Davis, Emory University on fear and anxiety; March 25, Henry "Roddy" Roediger III, Washington University St. Louis, on memory and testing in the classroom; May 12, Nancy Wexler, Columbia University, on Huntington's Disease.

There is a pre-lecture reception that members of our Friends of the CNLM annual membership receive an invitation to attend. Teachers of the participating school groups are also welcome to attend the backstage reception.

If you would like information about our Public Lecture Series and/or joining our Friends group, please visit our website www.cnlm.uci.edu or call (949) 824-4275.

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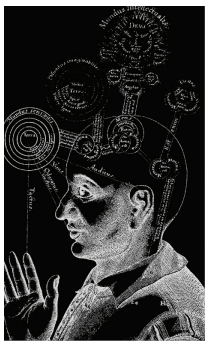
Dates to Remember

The 15th UCI Distinguished Lecture Series on Brain, Learning and Memory



Tuesday, January 20
Dr. Michael Davis

Wednesday, March 25
Dr. Henry Roediger III

Tuesday, May 12
Dr. Nancy Wexler

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

Scientific Colloquium 2008-2009 Series

October 16, 4 p.m.
Todd Sacktor

January 8, 4 p.m.
Peter Holland

January 21, noon (tentative)
Michael Davis

February 5, 4 p.m.
Ted Abel

March 19, 4 p.m.
Mark Gluck

March 26, noon (tentative)
Henry Roediger III

April 30, 4 p.m.
Peter Redgrave

May 7, 4 p.m.
Paul Gold

May 13, noon (tentative)
Nancy Wexler

Ways you can become involved…

* **Join our Friends Group**
* **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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