



# NEURO TIMES

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

## ISSUE 4 Spring 2009

### Facts about CNLM:

- The CNLM has 40 faculty Fellows who come from UC Irvine, UCLA, UC San Diego, USC, the Scripps Research Institute and Caltech
- There are more than 55 permanent or rotating graduate students in CNLM labs on the Irvine campus
- The UCI Distinguished Lecture Series on Brain, Learning and Memory welcomes an additional sponsor, UCI's Institute for Brain Aging and Dementia

### Inside this issue:

- In the Spotlight 1
- Barto Dedication 2
- If You Missed the Lecture 2
- Meet A Donor 2
- Director's Corner 3
- Foreign Award Recipient 3
- Congratulations to... 3
- Dates to Remember 4

## In the Spotlight

The Center for the Neurobiology of Learning and Memory would like to send out a warm welcome to our newest Fellow, Dr. Norbert Fortin. Dr. Fortin arrived in Irvine just a few months ago and is already eager to start his work and initiate collaborations in the field of learning and memory. His primary research area is the investigation of the fundamental neurobiological mechanisms underlying episodic memory - memory for personal experiences - using behavioral and electrophysiological techniques.

Norbert, originally from Canada, completed his undergraduate studies at McGill University in Montréal. At McGill he studied psychology, taking a number of classes about the brain and learning and memory. It was at this point that his passion began for the study of the brain and how it works. He was fortunate to find an opportunity to participate in laboratory research in neuroscience at this early stage in his education. This undergraduate research was an important stepping stone for his subsequent training at Boston University, where he earned his PhD in neuroscience. While pursuing his PhD, his main focus was on understanding the neural basis of episodic memory, particularly with regard to the role of the hippocampus, the seahorse-shaped structure located inside the medial temporal lobe of the brain. Norbert was able to show that the rats he was

studying did, indeed, have the characteristic features of episodic memory (which was never before demonstrated in mammals other than primates) and that this memory was supported by the hippocampus. This research helped establish an animal model of episodic memory and opened the doors to many possible investigations. Following the receipt of his Ph.D. in 2003, Norbert stayed on at Boston University as a postdoctoral researcher to expand the studies he had begun there.

At UCI, Norbert plans to continue his research on episodic memory. We know that the hippocampus is critical for this type of memory, but it is clear that other brain structures are important as well. Norbert is interested in finding out how other systems of the brain are used in conjunction with the hippocampus when it comes to these memories for personal experience. His research targets one type of memory and investigates how it is consolidated in the brain, however, this research has important implications for understanding how we encode memory in general. In the future, Norbert hopes the research he develops can be used in clinical settings to help

understand brain diseases and disorders that impair memory.

Norbert is pleased to be a Fellow of the CNLM and is quite enthusiastic about the many outreach programs we offer. In Boston, he was involved in an after school program with high school students, teaching them about the brain. He hopes to start a similar program here in the future.

For more in depth information about Dr. Fortin's research programs, please visit our website at [www.cnlm.uci.edu/faculty.html](http://www.cnlm.uci.edu/faculty.html).



Norbert Fortin

# Barto Dedication



Jerrel Barto, Janice Barto, Faith Barto, James McGaugh, Susan Bryant, and Michael Rugg

In our newsletter last spring, we highlighted the James L. McGaugh Chair campaign which, as you may know, is now successfully funded. The Jerrel and Janice Barto Family Foundation made a generous donation to complete the \$1.0 million dollar goal. To commemorate the Barto donation, a wing in the

Bonney Research Laboratory was named after Jerrel's father, Charles G. Barto.

The gift came about when Dr. McGaugh's friends and family were invited to participate in the funding of the Chair. Jerrel Barto responded with a donation in memory of his late father, Charles G. Barto.

Charles G. Barto was an inspiring teacher and mentor to Dr. McGaugh. "Charles Barto was my high school physics teacher. He had an enormous influence on me and probably had more influence than anyone else in encouraging me to go to college. He was also a supportive friend - sort of a

substitute father — who included me, along with others, in hunting and fishing trips and who would talk with me about my interests, at that time, in automobile mechanics. He created good and lasting memories," says Dr. McGaugh, who fondly remembers the teachings of his high school teacher.

The dedication of the Charles G. Barto Research Laboratory Wing was attended by Barto family members, CNLM Fellows, other CNLM donors, postdocs and graduate students. A celebration of all donors to the McGaugh Chair will be held at a later date when the first recipient of the McGaugh Chair has been selected.

## If You Missed the Lecture...

*"Science may set limits to knowledge, but should not set limits to imagination"*

*-Bertrand Russell*

If you missed the Distinguished Lecture on Brain, Learning and Memory with speaker Dr. Henry L. Roediger III, Washington University, St. Louis, here are some key points from his talk on *The Power of Testing Memory: From the Laboratory to the Classroom*:

- Repeated retrieval is the key to long-term retention
- Beyond some minimal amount, repeated studying does not matter
- Testing of memory not only assesses what we know, but changes it

- Repeated reading leads to a short-term boost, but it is testing that enhances long-term retention

- Retrieving information can enhance retention more than studying

- Confidence in our knowledge (reflected in prediction of future recall) is inflated by repeated studying

- Feedback enhances the testing effect

- When they are tested, students engage in retrieval processes, and therefore practice the skills needed to access information in the long term

In short, Dr. Roediger's research shows that tests do much more than assess what has been learned; they also change what we know and remember. Successful retrieval, induced by tests, serves as a powerful memory enhancer.

The last lecture of this year's series was on Tuesday, May 12 when Dr. Nancy S. Wexler discussed "*Genetic Jeopardy: Lessons Learned from Huntington's Disease*." To read more about Dr. Wexler's talk please visit our website [www.cnlm.uci.edu/publicnow.htm](http://www.cnlm.uci.edu/publicnow.htm)

## Meet a Donor

Dr. Rosalyn M. Laudati is no stranger around the Center for the Neurobiology of Learning and Memory. She has been a long-time supporter of the CNLM, actively attending many events and lectures held by the Center. She is a lifetime member of the CNLM Friends group, as well as a patron to the campaign for the McGaugh Chair in the Neurobiology of Learning and Memory and a member of the Center's external steering committee.

Dr. Laudati grew up in Providence and Narragansett, Rhode Island and permanently moved to California in 1977. Her undergraduate degree is from Brown University, followed by her masters in General/Experimental Psychology

from the University of Hartford, Connecticut. She then earned her doctorate from the University of Iowa with her research focusing in the field of eating disorders, a compulsive behavior disorder. She currently is a licensed psychologist in Newport Beach, California where she specializes in the treatment of compulsive behavior disorders including: eating disorders, alcohol abuse, repetitive spousal abuse, smoking, and "type A" behaviors, to name a few. She is very passionate about her work in the area of compulsive behavior problems and finds it very challenging, and never boring.

She became interested in the Center because she is in awe of the research. She can always find

some new idea or concept from the research to use with her patients. "I rely on the researchers to help us with that [research] so we clinicians can apply their work to our own," she says.

Dr. Laudati is very proud of her wonderful family including her husband James B. Pick, a university professor, and her 90-year-old mother who she says inspires her everyday. She is a member of the American Psychological Association, the California Psychological Association, and is a past President and Board member of the Orange County Psychological Association.



Dr. Rosalyn M. Laudati

## Director's Corner

Welcome to our latest newsletter, which sees us at a busy time, having finished hosting the third of our three Barclay lectures for 2009 and organizing our annual scientific symposium for Center Fellows and their research groups. We look forward to seeing all of our Friends at an open house that we shall be hosting here at the Center in June. The evening will provide an opportunity to tour our labs, and to meet and talk with many of the researchers who work in them.



Michael D. Rugg

In asking our Friends to 'bring a friend' along to this event, we are hoping it will help us succeed in our aim of expanding the membership of our Friends group, whose support is more important to us in fulfilling our training and outreach missions than ever. In addition, we look forward to introducing the first recipient of the James L. McGaugh Chair in the early Fall, when he or she will be invited to present an inaugural lecture to our Friends and other guests. We once again thank all of the donors whose generosity enabled us to create this exciting new position.

## Foreign Award Recipient

Gustavo Kellermann Reolon is the second recipient of the Friends of the CNLM Foreign Graduate Student and the Renée Harwick Visiting Scholars Award. These awards are sponsored by our Friends group and Dr. Renée Harwick, a long-time supporter of the CNLM. The awards provide travel funds and a stipend for graduate students from abroad to come to Irvine and study in a CNLM lab for up to six months. Gustavo is the award recipient for 2008 and is working in the lab of Dr. Marcelo Wood.

Gustavo is a doctoral candidate enrolled in the Graduate Program in Cellular and Molecular Biology at the Federal University of Rio Grande do Sul (UFRGS), Brazil. His research focuses on the epigenetic mechanisms involved in memory consolidation, that is the non-genetic factors that influ-



Gustavo Reolon

ence the expression of genes required for long-term memory. He is particularly interested in histone acetylation, a critical protein modification that occurs in chromosomes and is directly involved in gene expression. Gustavo's interests provide a perfect fit with Dr. Wood's research, as Dr. Wood's lab also studies histone acetylation as part of their research on how genes are activated to begin the process of long-term memory formation. Gustavo has worked on two different projects since coming to Irvine last November. In one project, he used a drug called a histone deacetylase (HDAC) inhibitor to modulate the amount of histone acetylation occurring in neurons, studying the effect

of this modulation on long-term memory for object recognition. His research contributed to work showing that HDAC inhibitors can transform a learning event that does not lead to the formation of short- or long-term memories into one that does result in a strong long-term memory. His results also helped show that HDAC inhibitors can generate a form of long-term memory that lasts beyond the point at which normal memory fails. He is a co-author on a manuscript describing these results. In a second study, he started a project aimed at understanding the role of histone acetylating and deacetylating enzymes in regulating gene expression required for memory formation in the amygdala.

Since his arrival at the CNLM, Gustavo has contributed to one research paper and is currently working on a paper of his own. Gustavo says he has had a very memorable experience visiting the CNLM and has plans to return again in the future.

## Congratulations To...

Congratulations are in order to three CNLM researchers: CNLM Fellows Georg Striedter and Marcelo Wood, and graduate student Michael Yassa.

Dr. Georg Striedter is the recipient of a John Simon Guggenheim Fellowship for 2009. The Guggenheim Fellowship is a grant awarded to individuals who have demonstrated "exceptional capacity for productive scholarship or exceptional creative ability in the arts" as stated on the Guggenheim Memorial Foundation's website. The Foundation receives an average

of 3,500-4,000 applicants and approximately 220 Fellowships are awarded each year. Georg will use the funds to write a book that focuses on evidence-based principles of brain structure and function. He hopes to have the book published by 2012.

Michael Yassa and Dr. Marcelo Wood have successfully applied to establish a UC Irvine chapter of Nu Rho Psi, the National Honor Society in Neuroscience. Michael is a graduate student in Dr. Craig Stark's laboratory. Marcelo Wood, CNLM

Fellow, will be the faculty advisor for the chapter. With a Nu Rho Psi chapter at UCI, eligible undergraduate and graduate students can be part of this prestigious honor society. In addition to the importance of the chapter for the up-and-coming neuroscientist's resume, Nu Rho Psi offers benefits such as travel scholarships for students to national neuroscience meetings.

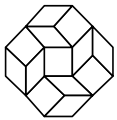




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# Dates to Remember

### Ways you can become involved...

- \* **Join our Friends Group**
- \* **Support the Innovation Fund campaign**
- \* **Become a tour docent**
- \* **Buy a brick on Memory Lane**
- \* **Attend a scientific colloquium or public lecture**
- \* **Name a garden bench**
- \* **Visit our website:**  
<http://www.cnlm.uci.edu>

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### Remember to Renew Your Friends Membership!

Annual membership for  
July 1, 2009 - June 30, 2010  
Please email  
[memory@uci.edu](mailto:memory@uci.edu) or call  
(949) 824-5193 for a  
membership form



### Meet the Scientists

**Monday, June 15**

A special tour of our facilities for  
CNLM Friends  
Invitations coming soon!



### CNLM Awards Ceremony

**Wednesday, June 10**  
at 3 p.m. in the Herklotz  
Conference Center

