



NEURO TIMES

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

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Facts about the BRAIN:

- Rats can hear in the range of 1,000 Hz to 50,000 Hz compared to a human which ranges from 20 Hz to 20,000 Hz.
- There are 31 pairs of spinal nerves which carry motor, sensory and autonomic impulses between the spinal cord and the body.
- Unconsciousness will occur 8-10 seconds after the loss of blood supply to the brain.

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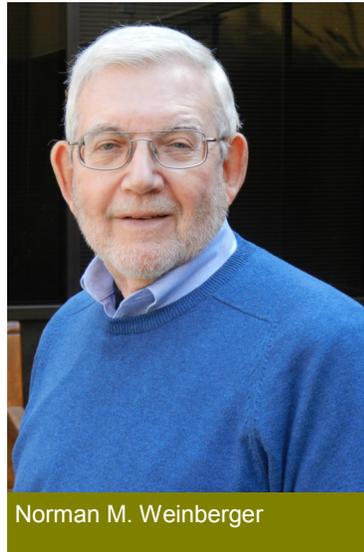
In the Spotlight

Our most sincere congratulations to Dr. Norman M. Weinberger, a founding Fellow of the CNLM. Dr. Weinberger was instrumental in the conception and realization of the Center. UCI's Department of Neurobiology and Behavior recently established an award in Dr. Weinberger's honor. The award is in recognition of a lifetime of distinction in research, teaching and service and will be given annually to a faculty member who matches these achievements. This is a much deserved tribute to Dr. Weinberger who has been a pioneer in the field of neurobiology of learning and memory and who has played a seminal role in the growth of neuroscience research and teaching at UCI.

Dr. Weinberger is one of the original faculty members at UC Irvine. When he arrived in 1965, UCI looked very different than it does today with only three buildings under construction amidst barren hills. As a faculty member in the nascent School of Biological Sciences, he eagerly served in its early years as Chair of the Department of Neurobiology and Behavior (formerly Dept. of Psychobiology), and later as Associate Dean and Dean of the School of Biological Sciences. He also chaired several key Academic Senate committees.

In recognition, he received the Outstanding Faculty Service Award in 1975. In addition to his service to the Department, School, and Academic Senate, Dr. Weinberger's role in the establishment and subsequent steering of the CNLM cannot be overestimated. He has been a key part of the Center's progress over the years and continues prominently in that role today.

Dr. Weinberger's research has led the way in giving us a far richer understanding of learning and memory in cortical regions. His research team investigates how information concerning sounds is acquired, represented and stored in the brain, and how a failure of such brain processes causes brain and behavioral dysfunction. In particular, his work has been pivotal in showing us how complex forms of memory can be subserved by cortical regions that many have thought were only involved in processing sensory information. This was accomplished by combining



Norman M. Weinberger

two separate fields of neuroscience: auditory neurophysiology and the neurobiology of learning and memory. His laboratory is unique in being able to "implant" memories directly in the brains of animals in order to test theories of how experiences are stored. Now in his 49th year of research, Dr. Weinberger's laboratory is as active as ever.

Dr. Weinberger has taught and mentored many students over the years at the undergraduate and graduate levels and beyond. He has mentored 16 graduate students and 17 postdoctoral students and is always willing to share his thoughts and experience with both students and colleagues. Dr. Weinberger's laboratory investigations are enriched by his knowledge and enjoyment of music, and he has written extensively about music/brain/behavior research. He was founding executive director of the International Foundation for Music Research (IFMR), as well as the Music and Science Information Computer Archive (MuSICA), and is the author of MuSICA Research Notes

Our heartfelt thanks to Dr. Weinberger for all he has given to the CNLM, the Department of Neurobiology and Behavior, the School of Biological Sciences and to UCI.

“If the human brain were so simple that we could understand it, we would be so simple that we couldn’t”

-Emerson M. Pugh

CNLM Fellows and Researchers Receive Many Awards

The CNLM is proud to announce several recent awards presented to CNLM Fellows, postdocs and graduate students.

The following awards were presented by the Department of Neurobiology and Behavior:

Shawn Nielsen, a graduate student of Dr. Larry Cahill, was the recipient of the Ralph Waldo Gerard Prize in the History of Neuroscience. The Gerard Prize is awarded every other year for new, outstanding papers in the field of the history of neuroscience. Shawn was presented with a certificate and funds to travel to a national meeting where she will present her paper.

Drew Headley, a graduate student of Dr. Norman Weinberger, was the recipient of the James L. McGaugh Award for Excellence in Graduate Research. This award was established to honor Dr. McGaugh, Founding chair of the Department of Neurobiology and Behavior, and is awarded to a student whose published or "in press" research is of outstanding quality. Drew's paper, "Gamma-Band Activation Predicts Both Associative Memory and Cortical Plasticity," was published in *The Journal of Neuroscience*.

CNLM Fellow **Larry Cahill** was presented the 2011 Appreciation Award for distinguished teaching. Dr. Cahill has been teaching for many years and has a gift for speaking to students and getting them excited about the field of neurobiology.

Norman Weinberger was recognized with an award established in his honor (see feature story re: this award).

The following awards were presented by the School of Biological Sciences:

Annie Vogel-Ciernia, graduate student of Dr. Marcelo Wood, was awarded the Edward A. Steinhaus Teaching Award. The award is named after the first Dean of Biological Sciences, Edward A. Steinhaus.

Melissa Malvaez, graduate student of Dr. Marcelo Wood, was awarded the Howard A. Schneiderman Fellowship Award. Audrey Schneiderman established this award in honor of her late husband, Howard A. Schneiderman, who was a past Dean of Biological Sciences.

Paul Nakamura, graduate student of Dr. Karina Cramer, was awarded the Fine Science Tools Graduate Travel Award, which is given to a graduate student to attend a national meeting, and is selected based on the quality of the student's submitted abstract.

Tim Allen, Ph.D., a postdoctoral researcher in the lab of Dr. Norbert Fortin, was awarded the Dean's Award for Postdoctoral Research Excellence which recognizes research contributions of young postdoctoral researchers.

Congratulations to all our award recipients!

CNLM Donors Lend Research Support

Long-time CNLM supporters, Dr. Rosalyn Laudati and husband Prof. James Pick, have recently made a generous donation to the CNLM for Alzheimer's research. The donation was allocated to provide funding for pilot projects, student-initiated projects, or the development of new ideas currently not supported by larger grants.



Rosalyn Laudati and James Pick

The CNLM put out a call for project proposals, formed a committee to review the proposals and selected a submission by CNLM Fellow, Norbert Fortin. Dr. Fortin has developed advanced neural recording techniques to look at changes in the activity neural across multiple brain regions in the triple-transgenic mouse model of Alzheimer's disease (AD). He hypothesizes "that this approach will allow us to identify subtle network dysfunctions as the earliest biomarker of AD to date, characterize the progression of network dysfunctions over time, and link such changes in network activity to the emergence of memory deficits." It's a very exciting project that also has ties to novel ideas developing in the field about the roots of what leads to AD. Dr. Fortin and the CNLM are very appreciative of Dr. Laudati and Professor Pick's continued support of our research.

On the cover of this issue, we spotlight Dr. Norman Weinberger's research, his contribution to the field, and his contribution to UCI. I want to



Craig E. L. Stark

take this opportunity to add my personal thoughts and to give you a sense of what Norm has meant to the CNLM. Many of us here in the CNLM came to UCI in large part because of the CNLM. The vision that the founding members of the CNLM had (led by Jim McGaugh and Norm) was that the best way to make progress in this challenging, but vital area of research was to bring together researchers from disparate backgrounds in a meaningful way. The CNLM provides the glue that binds us together despite our different backgrounds and approaches as we hunt down answers to that fundamental question – how does memory work?

Norm has worked tirelessly for decades to help make the CNLM what it is today. He has been unwavering in his dedication to the founding principles of the Center. Scientific discussions with Norm are rarely easy as he will hold you to the same exceptionally high standards he holds himself to. He pushes all of us to take on the challenging fundamental issues in our field and to pursue them with rigor. This relentless pursuit of science has been with us here at UCI for over 45 years and was part of the founding principles of the CNLM. It has steered us as we've grown over the past 30 years and we are far better for it. Thank you Norm!

A Memorable Evening Wrap-Up

What a successful and fun night we had at our fundraising event, *A Memorable Evening*, on November 4, 2011! Marilu Henner, the star entertainer, was a hit with her humorous skits, video clips from television past, a memorable singing voice and the unforgettable duet with CNLM Fellow, Jim McGaugh. The audience was absolutely delighted with the number, *I Remember it Well*, in which they ad-libbed lyrics about their first meeting and memory tests. The evening also included a silent and live auction with comic auctioneers, Len Fox and Jon Cianci. What a team of wits who did a great job keeping the bidding going.

The program was filled with amazing silent auction items, including a trip to New York City, Napa Valley Wine Train tickets, a Persian rug and a Vitamix donated by Ms. Henner, plus several of her books on healthy living and diet. The most popular silent auction item of the night was a homemade bird house crafted by Jim McGaugh, which fetched \$300. The birdhouse looked like something from a Disney movie and came

with plenty of birdseed. Live auction items included a private tour of the Back Bay in an outrigger canoe accompanied by friends, a private star-gazing evening with CNLM Director and amateur astronomer Craig Stark, and a chef-prepared dinner hosted by Ms. Henner and Jim McGaugh. The live auction also brought numerous donations in support of CNLM's school tour program. Proceeds from the event will support the CNLM's research, training, outreach and the underlying administration and operations that make all of the CNLM's programs possible.

We thank Mr. John C. Herklotz for his underwriting of the event. The evening was a big success for the Center and would not have been possible without his generosity. Mr. Herklotz has been a staunch supporter of the CNLM for nearly 20 years and has provided donations to help fund the construction of the Herklotz Research Facility and the Dale Melbourne Herklotz Conference Center, Evenings to Remember, The Dale Melbourne Herklotz Lectures on the Neurobiology of Memory (E2R) and the

James L. McGaugh Chair in the Neurobiology of Learning and Memory.

Overall, this event marked a new day for the Center. We introduced a lot of new people to our research and mission, and we renewed our connection with many of our existing friends. We hope to continue our fundraising venture and make this auction a recurring event. We want to thank all of our supporters again for their loyalty and generosity which has helped us to continue the programs that are so very vital to the community and to the understanding of brain function and health.



Jim McGaugh and Marilu Henner

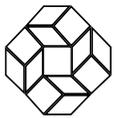




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Special Announcements

SHAPING THE FUTURE: RETIREMENT PLANNING WORKSHOP



UNIVERSITY of CALIFORNIA • IRVINE
FOUNDATION

CNLM and UCI MIND (Institute for Memory Impairment and Neurological Disorders)
are partnering to present an eight part workshop series on

Retirement Planning

Workshops are every Thursday
from 1:00 to 2:30 p.m. starting
April 26th through June 14th, 2012

These **free** workshops will be presented by distinguished professionals from the advisory community who have generously volunteered their time to provide you with these much needed tools. If you are nearing retirement or are already retired, please join us as we unravel the confusing world of retirement planning in this eight part workshop series. Each workshop will focus on different topics for successful retirement planning.

RSVP to Mary Elizabeth Garcia at 949.824.5820 or maryeg@uci.edu

Workshop will be held in the Dale Melbourne Herklotz Conference Center at the CNLM