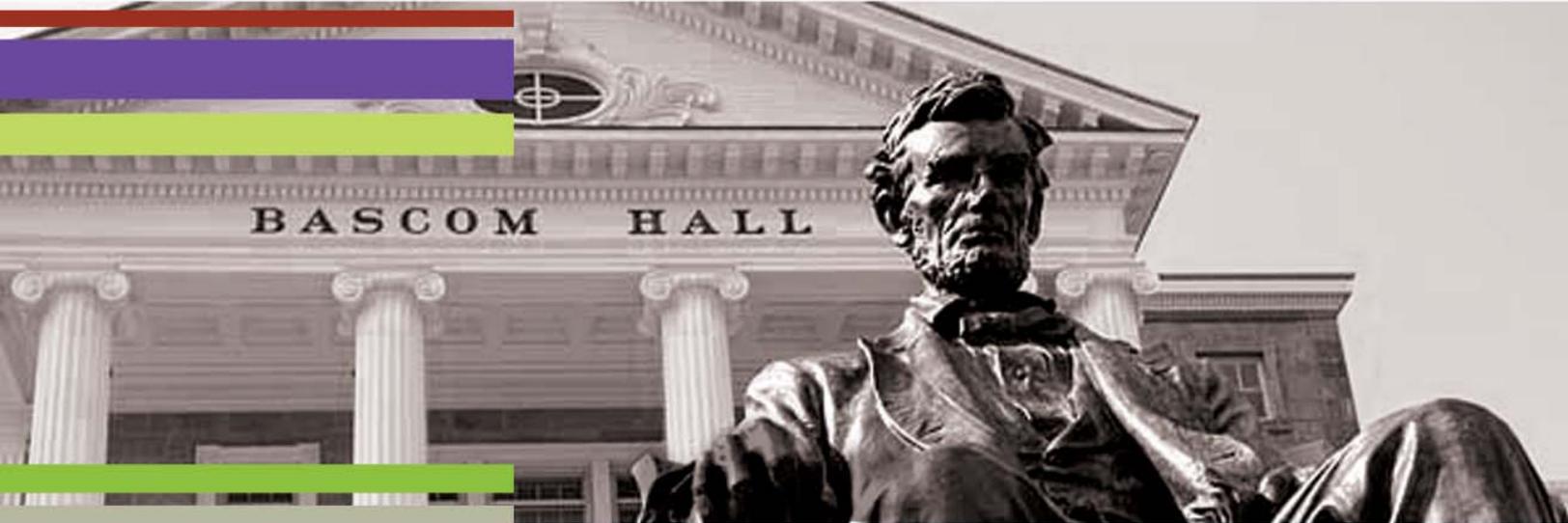


BRAIN WAVES



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RESEARCH EXPENDITURES JUMP, UW-MADISON RETAINS TOP RANKING

Oct. 16, 2009

According to statistics compiled by the National Science Foundation (NSF), the University of Wisconsin-Madison is the nation's third largest research university as measured by dollars spent on research.

The most recent NSF ranking show UW-Madison lagging behind only Johns Hopkins University and the University of California at San Francisco, with research expenditures for fiscal 2008 (the most recent available figures) totaling \$882 million, a jump of \$41 million over fiscal 2007 expenditures.

Other than Johns Hopkins, UW-Madison is the only institution, public or private, that has ranked

among the top five research universities for each of the past 20 years.

"Our high ranking is, first of all, a testament to the quality and hard work of our faculty, staff and students," says Graduate School Dean Martin Cadwallader. "The funding environment is as competitive as ever and that we are able to grow our research portfolio year after year demonstrates that our researchers are among the best anywhere."

The NSF ranking reflects funding from all sources: federal, state and private.

Terry Devitt
University of Wisconsin News

CONTRIBUTIONS TO THE PROGRAM

Funds given to the program are used to support recruiting activities, guest speakers, the undergraduate award in neurobiology research and the annual program picnic. For additional information, please contact the program office at (608)262-4932.

To contribute, please contact the UW Foundation at www.uwfoundation.wisc.edu

Thank you to all those who have contributed and continue to support the Neuroscience Training Program and its students.



RESEARCH NEWS

RESEARCH DEVELOPMENTS FROM STUDENTS AND FACULTY IN THE FIELD OF NEUROSCIENCE OVER THE PAST SEMESTER.

STUDY: CAN MEDITATION SHARPEN OUR ATTENTION?

November 13, 2009

A new study at the University of Wisconsin-Madison suggests that people can train their minds to stay focused.

The study, led by UW-Madison scientist Antoine Lutz, involved subjects interested in meditation in an effort to see whether voluntary mental training can affect attention. Results suggest that attention stability is not a fixed capacity, and that it can be improved by directed mental training, such as meditation.

Being able to sustain attention on a chosen object through time is a critical component of attention regulation, explains the study's senior scientist **Richard Davidson**, director of the Center for Investigating Healthy Minds and professor of psychology and psychiatry at UW-Madison.

"In untrained individuals, one gets easily distracted, requiring a refocusing of attention," says Davidson.

Participants were presented with frequent standard and rare deviant tones in both ears, and asked to pay attention only to tones presented in one ear and to press a button each time they detected an intermittent deviant tone. Deviant tones were slightly higher in frequency than standard tones. Lutz and colleagues investigated the moment-to-moment stability of attention by quantifying the trial-to-trial variability of both reaction time in response to attended deviant tones and consistency of brain responses, as measured by electroencephalography (EEG).

The new study showed that three months of rigorous training in Vipassana meditation improved people's ability to stabilize attention on target tones, as indicated by both a measure of consistency of brain response and reduced reaction time variability. Furthermore, those individuals who showed the greatest increase in neural response consistency showed the largest decrease in reaction time variability.

University Communications News Release
See full article: <http://www.news.wisc.edu/releases/15650>

SYNAPTOTAGMIN PLAYS A CRITICAL ROLE IN INITIATING CELLULAR FUSION

August 2009

Success in soccer sometimes comes with "bending it like Beckham." Success in cellular fusion — as occurs at the moment of conception and when nerve cells exchange neurotransmitters — requires that a membrane be bent before the merging process can begin, University of Wisconsin-Madison researchers have shown.

The scientists offer the first concrete evidence that a protein called synaptotagmin plays a critical role in initiating fusion by bending a section of a target membrane. The protruding dimple provides a small point of contact that can fuse with another membrane with less effort.

Edwin R. Chapman, senior author, PhD, and a Howard Hughes Medical Institute professor in the physiology department at the UW School of Medicine and Public Health, has contributed significantly to understanding synaptotagmin's role in fusion during nerve cell communication.

"Fusion is an elementary issue that biologists have pondered for a long time," says Chapman, a synaptotagmin expert who has contributed significantly to understanding the protein's role in fusion during nerve cell communication. "It's something I've been thinking about since 1992."

A study by one group of scientists led to the theory that synaptotagmin bends the target membrane to begin fusion, but the theory had never been tested. That study used vesicles that already were highly curved, so it was not clear what bending effect synaptotagmin was actually having on them.

The Chapman team addressed the problem by creating vesicles with different degrees of curvature, including some that were only slightly curved. By exposing the differently-curved vesicles to mutated synaptotagmin, which lacked membrane-bending capability, the researchers showed that the target membrane must be bent for fusion to occur.

To find a way to compensate for the mutated synaptotagmin's inability to bend membranes, Chapman's group turned to a protein that controls the bending of membranes when vesicles are returned to their original form during fission, which involves the splitting apart of membranes in a process called endocytosis. The researchers found that the endocytic protein overcame the fusion deficiency.

UW School of Medicine and Public Health News
See full article: <http://www.med.wisc.edu/smph/Page.action?id=1345>

AWARDS & ACHIEVEMENTS

Valerie Grant (NTP student) received the NSF Graduate Research Fellowship. The fellowship provides 3 years of stipend funding.

Robert Krencik (NTP student) was chosen to attend the National Graduate Student Research Festival at NIH in November to showcase his research which also is cited as a "hot topic" for the media materials at this year's Society for Neuroscience meeting. Krencik's research focuses on methods of deriving region specific and functional astrocytes from ES cells.

Vilas Travel Award Several NTP students were awarded the Vilas Travel Award. Visit this link to see the awardees: www.grad.wisc.edu/education/gsc/vilas/vilasinfo.html

CONGRATULATIONS GRADUATES!

Richard Chen graduated from Dandan Sun's lab.

Beth Hutchinson graduated from Beth Meyerand's lab and is now working post-doc in Tom Sutula's lab.

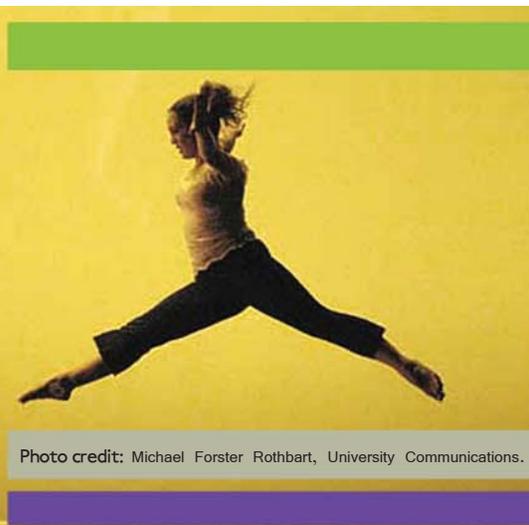


Photo credit: Michael Forster Rothbart, University Communications.

NEW FACULTY

JOINING THE PROGRAM THIS SEMESTER

Rob Nickells

Professor, Ophthalmology & Visual Sciences
B.S. from University of Victoria, Ph.D. from University of Calgary

Jay Yang

Professor, Anesthesiology
SC.B, SC.M, and Ph.D. degrees from Brown University, M.D. from Washington University

Bermans Iskandar

Associate Professor, Neurological Surgery, Pediatrics
B.A. from California State University at Northridge, M.D. from University of Pennsylvania

Masatoshi Suzuki

Assistant Professor, Comparative Biosciences
B.S. from University of Tokyo, D.V.M. from The Ministry of Agriculture and Fishery, Japan and Ph.D. from University of Tokyo

Jack Nitschke

Assistant Professor, Psychiatry, Waisman Center
B.A. from University of Pennsylvania, M.A. and Ph.D. from University of Illinois

SCIENCE INSPIRES DANCE

OCTOBER 27, 2009

The “thinking dancer,” a concept long embraced by the University of Wisconsin-Madison’s Dance Program, took on new meaning in the program’s Fall Faculty Concert, SPLASH!

In a collaborative venture, Dance Program faculty artists put their heads together with campus colleagues from the School of Human Ecology, Art Department, School of Music, Department of Theatre and Drama, Laboratory for Affective Neuroscience and UW-Extension to create and present new works for this special event.

In a work titled “Transform 2,” newly appointed assistant professor Peggy Choy examined notions of the mind and brain, and the meaning of transformation. Her inspiration for the piece was research by professor **Richard Davidson**, director of the Laboratory for Affective Neuroscience on campus.

Davidson and his team have used magnetic resonance imaging (MRI) to investigate how the brain can be transformed through meditation. Some of those MRI images have been incorporated into video projection in Choy’s piece. Her other collaborators include professor and composer Stephen Dembski, School of Music; musician Aaron Sherraden, composer and former student of Dembski’s; video artist Rosemary Bodolay, Art Department; and costume design by Maggie Barber, graduate of the School of Human Ecology, in consultation with assistant professor Carolyn Kallenborn, Design Studies, School of Human Ecology.

Doreen Adamany
University of Wisconsin News

REMEMBERING PROFESSOR EMERITUS STANLEY CARLSON

Stanley D. Carlson, professor emeritus of entomology and NTP faculty member, passed away in Madison, Wisconsin, on April 23, 2009 after a long illness. Professor Carlson was born in St. Paul, Minnesota, and received his BS from the University of Minnesota in 1956. He went on to earn a master’s degree at the University of Nebraska in 1961 and a PhD from Kansas State University in 1964. Professor Carlson joined the faculty of the Department of Entomology at UW-Madison in 1971 and was promoted to the rank of full professor in 1980.



Professor Carlson’s long research career centered on insect vision. He authored over 130 scientific articles, book chapters and reviews. He was the first to insert probes into the insect eye proving that certain insects had color vision.

He was also an accomplished pianist who specialized in the performance of Chopin and Rachmaninoff. He spent many hours in the School of Music listening to student recitals and hosting piano club meetings. Professor Carlson’s contributions to science and music, leavened with humor and wisdom, made the department and the world a better place. He is missed by all of us.

- Memorial Committee, Robert Jeanne, chair Walter Goodman

SPRING EVENTS

NEUROSCIENCE TRAINING PROGRAM

7225 Medical Sciences Center
1300 University Avenue
Madison, WI 53706
(608) 262-4932
ntp@mhub.neuroscience.wisc.edu



RECRUITING WEEKENDS

The NTP needs faculty and student involvement during recruiting weekends in the upcoming months. Mark your calendars.

Recruiting Weekend 1
February 12-14

Recruiting Weekend 2
February 19-21

CENTER FOR NEUROSCIENCE LECTURE SERIES

THURSDAYS, 4:00 PM, ROOMS TBA

March 25
Kent Berridge
University of Michigan

April 1
Lorenz Studer
Sloan-Kettering Institute

April 22
Istvan Mody
University of California-Los Angeles

April 29
Andrea Gore
University of Texas-Austin

WOOLSEY LECTURE
TBA

Date TBA
NTP Student Selected Speaker
Stan Floresco
University of British Columbia

NEUROSCIENCE & PUBLIC POLICY SEMINAR SERIES

THURSDAYS, 4:00 PM, 341 BARDEEN

January 22
Bioethics of genomic research
Pilar Ossorio
UW-Madison Law School

February 12
Science Policy
Albert Teich
Director of Science & Policy Programs,
AAAS

March 19
Medical Bioethics
Barbara Koenig
Mayo Clinic College of Medicine &
Center for Bioethics,
University of Minnesota

April 30
Neuroethics
Michael Gazzaniga
Sage Center for the Study of Mind
University of California-Santa Barbara

FACULTY VOLUNTEER OPPORTUNITY IBS-SRP PROGRAM

NTP is seeking faculty to host undergrads from the IBS-SRP program for summer 2010. This program allows minority students and students from small liberal arts colleges the opportunity to explore graduate school at UW-Madison and gain valuable research experience. Students participate in independent research projects with faculty mentors for ten weeks in one of six research areas.

IF YOU ARE INTERESTED IN HOSTING A STUDENT, PLEASE CONTACT:

Jenny Dahlberg: ntp@mhub.neuroscience.wisc.edu, (608) 262-4932
Brian Asen: beasen@wisc.edu, (608) 262-5267