



## Winter 2012 eNEWSLETTER

### From the Dean

For the last year we have chronicled much of the news about the College's programs, faculty and students in our science blog – Science News – found on our web site at <http://www.science.fau.edu/>. This same news is also posted to our Facebook page. I hope that you have been able to follow the daily/weekly news and events in our college by following these sites. However, if you have not had chance to do so, we have changed the format of our eNewsletter to mimic the science blog found on the College's web site, so that you can catch-up with the past happenings in our college. We hope you find this new format informative and of course we encourage you to regularly visit the College website and follow our College's news and events. As you read through this eNewsletter, I am sure you will be proud, as I am, of the achievements of the faculty and students of our College throughout the year, and especially during these challenging times of budget cuts to the State University Systems and loss of resources. While it will not be without continued challenges to our programs, we look forward to the summer and the following academic year as enrollments at FAU, especially in science, continue to increase significantly. Let me take this opportunity to wish you a happy and safe summer. As always, I invite you to contact me for any additional information you would like about the College, or to send me an email to let us know what you are up to at [perryg@fau.edu](mailto:perryg@fau.edu)

### Science News

**March 21, 2012 Graduate Research Day** this coming Friday, March 23, 2012 from 10am to 2pm on the East Patio of Sanson Life Sciences Building. Over 60 posters will be displayed by graduate students from the Charles E Schmidt College of Science describing their research. All are welcome; for more information contact Dr. Charles Roberts ([croberts@fau.edu](mailto:croberts@fau.edu)) or Dr. Ram Narayanan ([rnarayanan@fau.edu](mailto:rnarayanan@fau.edu)).

**March 12, 2012 Dr. George R. Newkome**, Vice President for Research and Professor of Polymer Science and Chemistry at the University of Akron will present the Frontiers in Science Public Lecture on March 16, 2012. Dr. Newkome specializes in synthetic and structural areas of chemistry and nanotechnology, but at this lecture will discuss another area of his interest - "Wealth Creation: University Community Interface." For more information on the series see [http://www.science.fau.edu/frontiers/brochure\\_2012.pdf](http://www.science.fau.edu/frontiers/brochure_2012.pdf)

**March 2, 2012 Nobel laureates Dr's. Bert Sakmann and Erwin Neher of the Max Planck Institutes** visited the newly developed electrophysiology teaching lab established by science faculty on FAU's McArthur campus in Jupiter. The two neuroscientists, who shared the Nobel Prize in 1991 for developing methods for studying single ion channels in living cells, saw how their novel "patch-clamp" technique was being taught to FAU students along with other techniques such as intracellular recording. This new teaching laboratory houses high-tech equipment, purchased by a \$300,000 Clustering Grant from the *New Florida Initiative*, as well as equipment loaned by FAU Provost, Dr. Brenda Claiborne.

**February 28, 2012 Dr. Sukanya Chakrabarti (Physics)** will present the Frontiers in Science Public Lecture on March 2, 2012. Dr. Chakrabarti specializes in the study of astrophysics, black holes and galaxies, and will discuss the progress astronomers have made in understanding dark matter which manifests itself through its gravitational influence on other bodies. The title of her talk is "The Dark Side of the Universe." for more information on the series see [http://www.science.fau.edu/frontiers/brochure\\_2012.pdf](http://www.science.fau.edu/frontiers/brochure_2012.pdf)

**February 22, 2012 Dr. Caiyun Zhang (Geosciences)** has been selected as the recipient of the Early Career Paper Award sponsored by the Remote Sensing Specialty Group (RSSG) of the Association of American Geographers with the paper "Zhang, C., and F. Qiu, Mapping Individual Tree Species in an Urban Forest Using Airborne LiDAR Data and Hyperspectral Imagery". RSSG will announce the award officially at the AAG annual meeting in New York City, February 24-28, 2012. The paper will be published in the top ranking journal, *Photogrammetric Engineering and Remote Sensing*.

**February 20, 2012 Kier Smith (Biological Sciences)**, a graduate student with Dr. Stephen Kajiura, is one of five graduate students at universities in Florida selected to be awarded \$5,000 scholarships as winners of the Guy Harvey Scholarship Award, recognizing their outstanding achievement in marine science research. The scholarship, established in 2010 through a partnership between Florida Sea Grant and the Guy Harvey Ocean Foundation, recognizes students at Florida universities whose research focuses on novel strategies for improving sustainable management of large marine fish and sharks. For more information, visit <http://bit.ly/zCNvg4>

**February 17, 2012 Dr. Thomas Eisenbarth (Mathematical Sciences)** was the speaker in the Frontiers in Science Public Lecture Series. Dr. Eisenbarth's talk was entitled "Cryptography in the Presence of Leakage" and demonstrated how cryptographic solutions protect digital systems; how the protection can sometimes be broken; and how novel methods may make future attacks impossible. For more information on the series see [http://www.science.fau.edu/frontiers/brochure\\_2012.pdf](http://www.science.fau.edu/frontiers/brochure_2012.pdf)

**February 16, 2012 Rebecca Walters (Geosciences)**, a doctoral student in the PhD program in Geosciences successfully defended her doctoral dissertation today. Rebecca is the first graduate of this new PhD program implemented in Fall 2009. The title of her dissertation is "The Landscape of Prosperity and Poverty in Urban Qualified Census Tracts: Deconcentrating Poverty or Perpetuating Existing Conditions?" Her doctoral advisor was Dr. Russell Ivy and other Committee members included Dr.'s Maria Fadiman, Yanmei Li, and Charles Roberts. Congratulations to all.

**February 6, 2012 Dr. Maria Fadiman (Geosciences)**, who studies ethno-botany, gave an invited presentation at the recent TED x Berkeley about her work in the Amazon rain forest. Dr. Fadiman received rave reviews with one participant commenting that ".....I had to keep reminding myself that I was actually watching a PhD delivering a compelling story about rain forest preservation."

**February 2, 2012 Dr. Margaret Leinen, Executive Director, Harbor Branch Oceanographic Institute** at FAU presents the Frontiers in Science Public Lecture. Title: "Our Living Oceans." For upcoming lectures in the series see [http://www.science.fau.edu/frontiers/brochure\\_2012.pdf](http://www.science.fau.edu/frontiers/brochure_2012.pdf)

**January 26, 2012 Dr. Jeanette Wyneken (Biological Sciences)** appeared in PBS's *Inside Nature's Giants* that aired last evening. Dr. Wyneken provided background and explanation to the British and American presenters the Burmese Python (and other snake) anatomy and evolution. Several FAU students participated as volunteers on this show. See <http://www.pbs.org/programs/inside-natures-giants/>

**January 20, 2012 Dr. W. Dalton Dietrich**, Scientific Director of The Miami Project to Cure Paralysis and Kinetic Concepts Distinguished Chair in Neurosurgery at the University of Miami Miller School of Medicine delivered the second Frontiers in Science Public Lecture entitled "New Discoveries Targeting Spinal Cord Injury." For upcoming lectures in the series see [http://www.science.fau.edu/frontiers/brochure\\_2012.pdf](http://www.science.fau.edu/frontiers/brochure_2012.pdf)

**January 17, 2012 Dr. David Lewkowicz and graduate student Amy Hansen-Tift (Psychology)** whose research published in the latest online edition of the *Proceedings of the National Academy of Sciences*, has received national and international attention in the news media. The research shows that as infants start babbling at around age 6 months in preparation for talking, they shift from focusing on adults' eyes to paying special attention to speakers' mouths. Babies who do not make the shift could be at risk for developmental disorders, such as autism. Science News Article; CNN Video; RTL.fr Article

**January 13, 2012 Alan Turing's centenary Year, the Mid-Atlantic Mathematical Logic Seminar (MAMLS)**, held a meeting dedicated to Turing (Jan. 13-15, 2012) at the Wyndham Hotel in Deerfield Beach, FL. Turing's contributions to the field of computational science has a profound impact on diverse areas of research: For ex. Computer science, Cryptology, artificial intelligence to developmental biology and several other areas. Dr. Bob Lubarsky, from Mathematics organized the conference supported by NSF. Over 60 participants, including many local undergraduates, graduate students, and faculty, as well as others from as far away as Italy and Japan participated.

**January 9-11, 2012 Dr. Frederick Hoffman (Mathematics)** chaired The Twelfth International Symposium on Artificial Intelligence and Mathematics was held at the Embassy Suites Hotel on SE 17th Street in Fort Lauderdale, January 9-11, 2012. The series of symposia began in 1990, and continues to the present time, under the sponsorship of the journal, *Annals of Mathematics and Artificial Intelligence*, and Florida Atlantic University. Dr. Martin Charles Golumbic of the University of Haifa is the General Chair of the Conference. See <http://www.cs.uic.edu/Isaim2012/> for details.

**January 10, 2012 – The Charles E Schmidt College of Science Department of Mathematical Sciences receives** a \$12,000 check from the Wells Fargo Foundation to support the 2012 Encounters with FAU Math Program, a multi-part series of events, competitions, inter-active presentations, and activities for elementary, middle and high school students from tri-county area, which will culminate on March 31, 2012 when more than 250 high school students gather on the FAU Boca Raton Campus for the all-day event. Mr. Chris Major, Boca Raton District Manager for Wells Fargo presented the check to Dr. Tomas Schonbek, Dr. Lee Klingler and Ms. Emily Cimillo, the principle organizers of the Encounters with FAU Math Program.

**January 6, 2012 Dr. David Fitzpatrick**, CEO and Scientific Director of the Max Planck Florida Institute in Jupiter FL gave the season's opening Frontiers in Science Public Lecture. The title of his talk was "Illuminating Brain Circuits." For more lectures in the series see brochure.

**January 9, 2012 Dr. Sukanya Chakrabarti (Physics)**, who has developed a way to discover and map dark matter in galaxies, took part in a press conference held this morning at the American Astronomical Society conference in Austin, Texas. Chakrabarti's paper presented at the conference, "A New Probe of the Distribution of Dark Matter in Galaxies," analyzes observed ripples in the outskirts of galaxies to infer the density profile of the dark matter halo. See press release.

**December 23, 2011 Dr. J.A. Scott Kelso (Complex Systems and Brain Sciences)** has been elected as a 2012 Fellow of The Society of Experimental Psychologists, the oldest and most prestigious honorary society in Psychology. The Society elects only a handful of new Fellows each year, and Fellows are elected for life. Dr. Kelso also recently delivered the keynote address entitled "How Humans Learn New Skills" at the International Conference of the European SKILLS Project in Montpellier, France, December 15 -16, 2011.

**December 13, 2011: Dr. Chakrabarti's** (Assistant Professor, Physics) recent paper in the *Astrophysical Journal* was chosen for the highlights in the prestigious *Journal Science* (Dec 9 ). See [www.sciencemag.org/content/334/6061/twil.full.pdf](http://www.sciencemag.org/content/334/6061/twil.full.pdf).

**December 12, 2011: Frontiers in Science** Public Lecture Series speakers for the Spring Semester 2012 have been published on the College's web site at [www.science.fau.edu/frontiers/brochure\\_2012.pdf](http://www.science.fau.edu/frontiers/brochure_2012.pdf)

**December 9, 2011: Dr. Michael Posner**, Professor Emeritus of Psychology at the University of Oregon and National Medal of Science recipient (2009) was awarded an Honorary Doctorate in Human Letters by FAU for his outstanding contributions to the fields of psychology and cognitive science, and for his contribution to the success of the programs in Psychology and Complex Systems and Brain Science at FAU.

**December 2, 2011: Dr. Dale Gawlik** (Biological/Environmental Sciences) was interviewed on the Australian radio show ABC news radio (similar to NPR in the US) about his research on wading birds. Dr. Gawlik is on sabbatical at the University of New South Wales and working with one of Australia's top wetland ecologists, Dr. Richard Kingsford.

**November 23, 2011: Dr. Russell Ivy** (Geosciences) steps down as President of the Southeastern Division of the Association of American Geographers at its recent 66th Annual Conference in Savannah, GA, where the department of Geosciences had over a dozen graduate students presenting their research, one of whom, Hilton Cordoba, won best graduate student poster at the conference out of 100 presentations. Florida Atlantic Geosciences is clearly becoming one of the dominant departments at the meeting and in the Southeast Region.

**November 12-16, 2011: Faculty, post-docs and students from the Center for Complex Systems and Brain Sciences (CCSBS)** contributed 19 presentations at the recent Society for Neuroscience (SFN) 41st Annual Meeting in Washington, DC. Presentations ranged from the neuroprotective effects of drugs to the neural circuitry and mechanisms underlying memory consolidation and social interaction, in addition to computational modeling of cortical function. Much of the research is supported by the National Institutes of Health, The National Science Foundation, the US Office of Naval Research and other funding agencies.

**November 21, 2011: Dr. Robert P. Vertes** (Complex Systems & Brain Sciences and Psychology) was recently awarded "Top Cited Article 2006-2010" by the highly rated journal "Neuroscience" for his paper entitled "Interactions among the medial prefrontal cortex, hippocampus and midline thalamus in emotional and cognitive processing in the rat, published in Neuroscience, Volume 142, Issue 1, 2006.

**November 18, 2011: Dr. Pedro Marronetti** (Physics) has been appointed as Program Director for the Gravitational Physics Program, Division of Physics, Directorate for Mathematical and Physical Sciences, at the National Science Foundation. Dr. Marronetti will start this appointment on January 3, 2012 and serve at NSF for two years.

**November 14, 2011:** The following faculty from the College were chosen by the Division of Research for the Mentor-Mentee awards ( 2011-12):

Dr. Tanja Godenschwege - (Dr. Kate Detwiler, Arts & Letter)

Dr. Warner Miller - (Dr. Sukanya Chakrabarti, Physics)

Dr. Ramaswamy Narayanan - (Dr. Deguo Du, Chemistry & Biochemistry)

Dr. Alan Kersten - (Dr. Marissa Greif, Psychology)

Dr. Zhixiao Xie - (Dr. Caiyun Zhang, GeoScience)

Dr. Salvatore Lepore - (Dr. Daniel de Lill, Chemistry & Biochemistry )

For details of the program see [http://www.fau.edu/research/mentoring\\_program.php](http://www.fau.edu/research/mentoring_program.php)

**November 1, 2011: FAU's Charles E. Schmidt College of Science Program Develops Traditionally Underrepresented Scientists** - Undergraduate students of the Charles E. Schmidt College of Science at Florida Atlantic University are currently participating in an opportunity to undertake significant scientific research through the Undergraduate Research Mentoring (URM)

**October 28, 2011:** The College announces the establishment of a Master Researcher Program to provide research mentoring primarily to new faculty in developing research proposals and to become successful researchers.

**October 24, 2011: Dr. Ken Dawson-Scully** (Biological Sciences) was awarded US Patent #8,026,217: Compositions and methods for treating neural anoxia and spreading depression. Ken discovered that the PKG pathway plays a crucial role in regulating SD and tolerance to anoxia in the central nervous system (CNS). Inhibition of the PKG pathway greatly reduces SD and increases tolerance to anoxia (i.e., hypoxia), while activation of the pathway exacerbates SD pathology. The compositions and methods can be used to treat any condition

associated with SD or anoxia, including stroke, spinal cord injury, neurodegenerative disease, dizziness, headaches, and migraines.

**October 19, 2011: FAU Study Finds Climate Change Impacts will Require Huge New Investments in Southeast Florida's Water Infrastructure.** Sea Level Rise Could Cause Coastal Inundation of Saltwater Contamination. WPTV News Channel 5 Coverage

**October 14, 2011: Dr. Markus Schmidmeier** (Mathematical Sciences) delivered an invited lecture entitled "*Operations on arc diagrams and a degeneration result for linear operators*" at the Shanghai International Conference on Representations of Algebras at Shanghai Jiao Tong University, October 2 - 7, 2011. See <http://www.math.sjtu.edu.cn/Conference/SCRTA/>

**October 12, 2011: Jupiter's 2011 Opposition to the Sun -- October 28th - 29th** - On the evening of Friday the 28th of October, the FAU Astronomical Observatory will be celebrating Jupiter's Opposition to the Sun. Jupiter passed the perihelion point in its orbit back in February, so the Earth and Jupiter will not be this close again for another decade.

**October 7, 2011: Dr. Nwadiuto Esiobu, Department of Biological Sciences** was recognized as one of three Broward faculty with the FAU Broward President's Community Council (BPCC) Faculty of Distinction Award at its meeting on Friday, October 7, 2011. Mr. John Pisula, Chair of the Broward President's Community Council wrote that the purpose of this initiative is to showcase contributions made by FAU Broward faculty locally, statewide, nationally and globally, as well as to highlight other outstanding accomplishments.

**September 21, 2011: Sukanya Chakrabarti, Ph.D.**, assistant professor of physics has developed a mathematical method called "tidal analysis" to find satellite, or dwarf, galaxies by analyzing the ripples in the hydrogen gas distribution in large spiral galaxies in outer space. Her paper entitled "The Sagittarius Dwarf Impact as an Architect of Spirality and Outer Rings in the Milky Way Galaxy," and coauthored with Chris W. Purcell, from the department of physics at the University of Pittsburgh; and James S. Bullock, Erik J. Tollerud and Miguel Rocha, from the Center for Cosmology within the department of physics at the University of California, Irvine was published in the renowned British research journal *Nature* (For full paper and associated News and views see <http://www.nature.com/nature/journal/v477/n7364/full/nature10417.html>)

**September 20, 2011: The American Chemical Society (ACS)**, the world's largest scientific society, has selected nationally renowned science journalist, author, broadcaster and blogger Paul Raeburn as the 2012 recipient of its James T. Grady-James H. Stack Award for Interpreting Chemistry to the Public -- one of the oldest and most prestigious accolades in journalism. Paul who is currently an instructor in the School Communications and Multi-Media Studies at FAU is working on a new MS in Science Journalism that will be directed at science graduates and implemented in next year.

**September 19, 2011: Janie Forbes**, a doctoral student in the department of geosciences within the Charles E. Schmidt College of Science at Florida Atlantic University, has received a grant from the Florida Space Grant Consortium (FSGC), an affiliate of NASA's National Space Grant College and Fellowship Program. Forbes is FAU's first-ever FSGC grant recipient. The grant supports Forbes' three-year doctoral dissertation, a geographic information science project studying the social and physical science factors that lead to an increase in Florida's coastal hazards. These hazards are defined as natural events that affect people, places, and other living things, such as hurricanes.

**September 6, 2011: Dr. Dragan Radulovic**, Professor of Mathematics, paper on "Genetic Variation Shapes Protein Networks Mainly through Non-transcriptional Mechanisms" was published in *PloS Biology* (a high impact factor journal). For those who are working in areas of bioinformatics, Systems Biology, transcriptome analysis, networks of gene expression and yeast genetics this work is likely to challenge some of the current thinking. See <http://www.plosbiology.org/article/info%3Adoi%2F10.1371%2Fjournal.pbio.1001144>

**August 30, 2011: FAU Psychology Professor Studies How Friendship Influences Youth Behavior** – Brett Laursen, Ph.D., a psychology professor and director of graduate studies in the Charles E. Schmidt College of Science at Florida Atlantic University recently published results from a study on how friends influence over problem behaviors in a sample of middle and high school students. The findings were published in August in the *Journal of Abnormal Psychology*, a journal of the American Psychological Association. Part of a larger research collaboration with colleagues Hakan Stattin, Ph.D., and Margaret Kerr, Ph.D., from Orebro University in Sweden, Laursen's report examined three-years-worth of data on alcohol intoxication and delinquency, the latter defined by such nonviolent offenses as property damage, truancy and shoplifting.

**August 17, 2011: Eric Vandernoot, Coordinator for the University Observatory and Astronomy** in the department of Physics is featured on the NASA website ([http://dawn.jpl.nasa.gov/DawnCommunity/photos\\_videos.asp](http://dawn.jpl.nasa.gov/DawnCommunity/photos_videos.asp)).

In celebration of Vesta Fiesta, August 5-7, that celebrates the beginning of Dawn's year-long exploration of new worlds, Eric constructed a replica of the asteroid Vesta from photographs returned from the Dawn Spacecraft to discuss with students. Vesta resides in the extensive zone between Mars and Jupiter together with many other smaller bodies, called the asteroid belt. Also check out <http://www.physics.fau.edu/observatory/observatory.html>

**August 8, 2011: Dr. John Wiesenfeld, Professor Emeritus of Chemistry** and former dean of the college will be admitted as a Fellow of the American Chemical Society at its Fall meeting in Denver, Colorado. The ACS is the world's largest scientific society with over 163,000 members, fewer than 200 of whom are selected annually as Fellows. Dr. Wiesenfeld has been a member of and consultant to the ACS Committee on Budget and Finance for a decade and has served as the chair of the society's Development Advisory Board for the last seven years.

**August 1, 2011: Professor Scott Kelso, Eminent Scholar in Science**, chosen to receive the prestigious **Bernstein Prize** -- the highest award of the International Society of Motor Control (ISMC). It is presented at each biennial meeting to an individual who has made an exceptional contribution to the development of the area of motor control and how the brain coordinates movement.

**We welcome your comments and suggestions on this and future issues. Please send any feedback to Lynn Sargent [lsargent@fau.edu](mailto:lsargent@fau.edu).**