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## STUDENT SPOTLIGHT: FAU ALUMNUS IS BUILDING BRAIN CONNECTIONS

Picture trying to move one arm forward, but involuntarily moving the other as well. Now imagine trying to take a simple step with one leg, but both legs move forward at the same time. Instead of walking, one's gait becomes more of a "hop." A mutation in a critical gene causes some people to be born with this developmental defect called "mirrored movement."

As a doctoral candidate in Integrative Biology working under Rodney Murphey, Ph.D., **Brian Orr** (pictured above) focused on gaining a better understanding of the mechanisms in the brain that cause this type of developmental disorder in organisms, including humans, mice and fruit flies.

Using the fruit fly central nervous system as a model organism, Orr found that two classic axon guidance molecules are required for synapse assembly, thus enabling communication between neurons. These molecules are also found in mammalian neurons and interact in human development to form the nervous system. Through this research, scientists may gain a better understanding of the mechanisms behind this type of developmental defect.

Orr's research was recently published in the high-impact *Journal of Neuroscience*.

"Brian's research is one of the nicest pieces of work to be done in my lab," said Murphey, chairman of FAU's Department of Biological Sciences. "Reviewers called this work 'beautiful' and 'lovely.' It is rare for a young scientist's first publication to receive such high praise from reviewers."

Orr didn't always think he'd be a neuroscientist. When he initially joined Murphey's lab as an intern, he thought he'd get some good lab experience and then move to cancer research or some other clinical setting. But, early on, something clicked and he became interested in unraveling the mysteries and unanswered questions of how the brain develops and functions.

"The brain is the only organ where cellular function doesn't just keep a human alive, it also determines who we are," said Orr.

This past January, Orr began his postdoctoral training at the University of California, San Francisco with one of the nation's top neuroscience groups and is currently conducting experiments to study the biological mechanisms that return brain synapses back to normal after agitation.

"It is extremely challenging and exciting to be here at UCSF," said Orr. "I'm working hard and my training at FAU is paying off."

## COLLEGE OF SCIENCE ANNOUNCEMENTS

### COLLEGE OF SCIENCE SCHOLARS RECOGNIZED AT HONORS CONVOCATION

**University Scholars:** This award is given to one student in each of the undergraduate colleges in recognition of outstanding academic achievement and upon the recommendation of faculty.

- **Brianna Blanchard**, Psychology undergraduate student

**University Researchers of the Year:** This award is based on the quality and quantity of research conducted by the faculty member over the past five years, as evidenced by: the nomination form; externally sponsored research; referred publications, articles, presentations and books; graduate student guidance; service to professional research organizations; special awards or citations.

- **Wolfgang Tichy**, Associate Professor, Physics
- **Brian Benscoter**, Assistant Professor, Biological Sciences

**Excellence and Innovation in Undergraduate Teaching:** This award is based on demonstrated excellence through stimulating and effective teaching or advising, including: student, peer and administrative evaluations; previous awards, honors, etc.; evidence of innovation in teaching or advising as reflected in the development or use of new methods and recent publications or presentations.

- **Maria Fadiman**, Associate Professor

## OUTREACH AND NEWSMAKERS

### DR. KELSO APPOINTED HONORARY MEMBER OF THE NATIONAL INSTITUTE OF MENTAL HEALTH'S BOARD OF SCIENTIFIC COUNSELORS

**Dr. Scott Kelso** was recently appointed to the NIMH's Board of Scientific Counselors. The Board of Scientific Counselors provides scientific oversight for the NIMH Intramural Research Program. They conduct regular reviews of NIMH laboratories to evaluate the quality of ongoing and proposed research activities.



## MINI-MATH DAY A HUGE HIT WITH 4<sup>TH</sup> GRADERS

The Department of Mathematical Sciences recently held its annual Mini-Math Day, hosting 4<sup>th</sup> grade students from J.C. Mitchell Elementary School. Students took an individual written exam, participated in a team competition and enjoyed a live science show by Mr. G. Special thank to Wells Fargo for sponsoring this event, to **Dr. Tomas Schonbek** for running the team competition, **Emily Cimillo** for organizing the event and to all the volunteers who helped make it a success!



## FLORIDA CENTER FOR ENVIRONMENTAL STUDIES RECEIVES NATIONAL MEDIA ATTENTION

**Dr. Len Berry**, director of FAU's Florida Center for Environmental Studies has been heavily quoted in publications including the *New York Times*, *USA Today*, *National Geographic*, National Public Radio, the *Sun-Sentinel* and many others following the recently released scientific report on global warming. The report, put out on May 6 by the National Climate Assessment (NCA), named Miami as one of the cities most vulnerable to severe damage as a result of rising sea levels. Dr. Berry is a lead author of the [Southeast chapter](#) of the [Third National Climate Assessment](#). The College of Engineering's **Dr. Fred Bloetscher** is also cited in the NCA report and is co-author on the NCA technical input. For information about the report, visit: <http://www.globalchange.gov/ncadac>.



## GEOSCIENCES STUDENT WINS FIRST PLACE

The Coastal and Marine Specialty Group of the Association of American Geographers awarded 2nd year Ph.D. student, Donna Selch first place for her illustrated paper, "Building a Spectral Library for Sand Classification using an ASD Spectrometer." Drs. **Caiyun Zhang** and **Anton Oleinik** were co-authors on the paper.

## BATTLE OF THE CHEMISTRY CLUBS

The FAU Chemistry Club hosted its inaugural Battle of the Chemistry Clubs between NSU and FAU on Friday, May 2. The event included lunch followed by three quick-fire and fun events: Periodic Table Darts, Spectroscopy Challenge, and Chemistry Jeopardy, followed the awards ceremony. FAU's Chemistry Club president, Amy Kloosterboer, applied for and received an Inter-Chapter Relations Grant from the American Chemical Society to support this event. The club plans to expand this event to other South Florida universities in the future. For more info contact Evonne Rezler at [erezler@fau.edu](mailto:erezler@fau.edu).



## ELEMENTARY SCIENCE OLYMPIAD

Third, fourth and fifth graders from around South Florida descended on FAU for an all-day science competition on Saturday, May 10. Teams participated in events like tennis ball catapult, water bottle rockets, bridge building and mystery powders. Dozens of FAU faculty, staff and volunteers worked as event coordinators and judges. The team from Manatee Bay Elementary took third place, while teams from Pinecrest Boca Raton won first and second place. Dr. **Ingrid Johanson**, organizer of the FAU Science Olympiad events, will travel to Orlando May 16 and 17 to assist with the Science Olympiad National Tournament being held at the University of Central Florida.



## GRANTS AWARDED\*

**Alex Modys** and **Caitlin Hanley** received Geological Society of America Student Research Grants. Both Alex and Caitlin are pursuing MS degrees in geology, working with Dr. Oeilnik. The Geological Society of America is the major national professional association within the field of Geology. For more about these grants, visit: <http://www.geosociety.org/grants/gradgrants.htm>.

**Dr. Salvatore Lepore** was awarded a new grant of \$311,320 from the National Institute of Health for a project titled: "Synthesis of a Bridged Bicyclic Natural Product Using Allenyl Esters."

**Drs. Scott Kelso** and **Emmanuelle Tognoli** were awarded a new grant of \$426,752 from the National Institute of Health for a project titled: "Neuromarkers of Social Coordination." The goal of this project is to discover the dynamical principles and mechanisms at play both within and between human brains during real-time social interaction.

**Dr. Erika Hoff** received a continuation of funding in excess of \$690,000 from the National Institute of Health for her work, "Early Dual Language Development in Children from Spanish-speaking Families."

**Dr. Brian Benscoter** received \$10,000 from the U.S. Fish and Wildlife Services for a project titled, "Fire Effects Monitoring at the A.R.M. Loxahatchee National Wildlife Refuge."

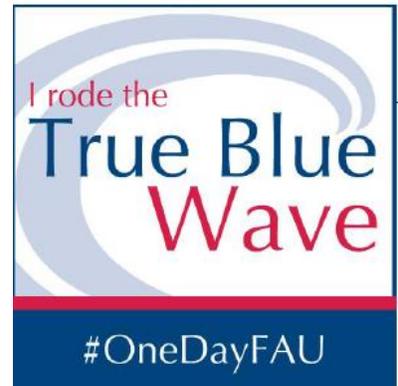
**Dr. Rodney Murphey** was awarded \$7,394 in addition to his \$152,354 award from Max Planck to support the joint graduate program.

**\*To include your grant in this section, please forward the information to Paige Garrido at [pgarrido@fau.edu](mailto:pgarrido@fau.edu).**

## UNIVERSITY-WIDE ANNOUNCEMENTS

## ONE DAY, ONE WAVE

Florida Atlantic University is excited to announce a new tradition: the "One Day, One Wave" 24-hour giving and social media engagement campaign. The purpose of One Day, One Wave is to build excitement about FAU, to raise funds for student scholarships and university programs, and to bring all our online communities together on one day of unity in support of FAU. Leading up to June 5, a series of emails will be sent to all FAU alumni and stakeholders promoting the event. Then on the big day starting at midnight and lasting the next 24 hours, we will all make a splash by utilizing the power of social media outlets such as Facebook, Twitter, Instagram and LinkedIn, as well as email. The campaign is looking for ambassadors to lead the social media push. If interested in participating, contact Allison Jewell at [ajewell@fau.edu](mailto:ajewell@fau.edu).



## DISSERTATION YEAR AWARD APPLICATION DATE MOVED UP

The Division of Research has announced that the call for applications has been moved from the Spring 2015 semester to the Fall 2014 semester. The objective of the grant is to help students complete their dissertations. **The completed application and attachments must be submitted electronically by September 22, 2014 at limited@fau.edu.** Applications will be reviewed by an awards committee, and applicants will be notified of committee action approximately eight weeks after the deadline. Awards are for a 12-month period. Please provide all of the materials, including the application form, in a single, PDF document. Information about this awards can be found at: [http://www.fau.edu/research/internal\\_awards.php](http://www.fau.edu/research/internal_awards.php).

## EXPLORATION COMMAND CENTER

CIOERT at HBOI recently launched a new Exploration Command Center (ECC), a hub which allows scientists and researchers to participate in cruises from HBOI. Cameras on remote operated vehicles transmit images from the ocean floor on large screens in the ECC, and participants on land are able to communicate with researchers aboard the ship and other locations while the missions are taking place in real time. Stephanie Farrington, HBOI Biological Scientist, is currently out at sea working as the biology lead on a NOAA cruise aboard the *Okeanos Explorer* in the Gulf of Mexico, and other CIOERT scientists are working on the cruise at the ECC, with major emphasis on the last leg of the cruise, on the West Florida shelf, a high priority area for CIOERT. You can see the live video each day from now until May 22 at:



[http://oceanexplorer.noaa.gov/okeanos/media/exstream/exstream\\_04.html](http://oceanexplorer.noaa.gov/okeanos/media/exstream/exstream_04.html). For more information, contact Clayton Cook at [ccook30@fau.edu](mailto:ccook30@fau.edu).

## COLLEGE OF SCIENCE UPCOMING EVENTS

To see a complete list of semester events, visit: <http://www.science.fau.edu/events.html>. To include a department or club event on this list, please send the information to Paige Garrido at [pgarrido@fau.edu](mailto:pgarrido@fau.edu).

### May 20

#### Third Tuesdays Open Dome Event (Held the third Tuesday of every month)

7:00 p.m. to 1:00 a.m., FAU Observatory, Building SE-43, 4<sup>th</sup> Floor

For more information, contact Eric Vandernoot at [vandernoot@mail.sci.fau.edu](mailto:vandernoot@mail.sci.fau.edu) or visit: <http://www.physics.fau.edu/observatory/observatory.html>.

## **May 24**

### **Middle School Math Circle**

**2:30 p.m. to 4:00 p.m., PS 109 on the Boca campus.**

The Mathematics department hosts a Math Circle for middle school students who like mathematics and who wish to learn a bit more than is usually covered in the school curriculum. Students can hone their problem solving skills in a fun environment. The Math Circle at FAU, one of the only two registered Math Circles in Florida, is supported in part by a grant from MSRI/NSA. For more information, visit our website at [www.math.fau.edu/MathCircle\\_at\\_Fau](http://www.math.fau.edu/MathCircle_at_Fau) or call or email Dr. Tomas Schonbek at (561) 297-3355 or [schonbek@fau.edu](mailto:schonbek@fau.edu).

## **June 5**

### **One Day, One Wave**

Florida Atlantic University is excited to announce a new tradition: the “One Day, One Wave” 24-hour giving and social media engagement campaign. The purpose of One Day, One Wave is to build excitement about FAU, to raise funds for student scholarships and university programs, and to bring all our online communities together on one day of unity in support of FAU. Leading up to June 5, a series of emails will be sent to all FAU alumni and stakeholders promoting the event. Then on the big day starting at midnight and lasting the next 24 hours, we will all make a splash by utilizing the power of social media outlets such as Facebook, Twitter, Instagram and LinkedIn, as well as email. The campaign is looking for ambassadors to lead the social media push. If interested in participating, contact Allison Jewell at [ajewell@fau.edu](mailto:ajewell@fau.edu).

## **June 16- July 11**

### **Summer Science Institute**

FAU is offering a Summer Science Institute for high-performing middle and high school students ages 11 through 15. Two, four-week sessions will run from June 16 through July 11 and July 14 through August 8 from 9:00 a.m. to 2:00 p.m. at FAU’s Boca Raton campus, 777 Glades Road. Each session will offer hands-on experience in real university classrooms and laboratories, taught by experts in the field. This STEM (Science, Technology, Engineering and Math) summer enrichment program uses a problem-based learning model to develop students’ critical thinking skills and draws from a broad range of disciplines within the sciences to maximize the potential of interdisciplinary science studies. The Institute is a non-credit academic program specifically designed to meet the intellectual and cognitive needs of high-achieving middle and high school students interested in discovering the world of science. The selection process for the “Summer Science Institute” is competitive, and space is limited. For more information or to register, call the College of Science Department of Continuing Education at 561-297-3700 or visit [www.science.fau.edu/oce](http://www.science.fau.edu/oce).

## **July 14- August 8**

### **Summer Science Institute**

FAU is offering a Summer Science Institute for high-performing middle and high school students ages 11 through 15. Two, four-week sessions will run from June 16 through July 11 and July 14 through August 8 from 9:00 a.m. to 2:00 p.m. at FAU’s Boca Raton campus, 777 Glades Road. Each session will offer hands-on experience in real university classrooms and laboratories, taught by experts in the field. This STEM (Science, Technology, Engineering and Math) summer enrichment program uses a problem-based learning model to develop students’ critical thinking skills and draws from a broad range of disciplines within the sciences to maximize the potential of interdisciplinary science studies. The Institute is a non-credit academic program specifically designed to meet the intellectual and cognitive needs of high-achieving middle and high school students interested in discovering the world of science. The selection process for the “Summer Science Institute” is competitive, and space is limited. For more information or to register, call the College of Science Department of Continuing Education at 561-297-3700 or visit [www.science.fau.edu/oce](http://www.science.fau.edu/oce).

## **August 5**

### **Commencement**

**9 a.m., 1 p.m., and 5 p.m.**

**August 6**

**University New Faculty Orientation**

Details TBA.

If you have any news you would like to include in future editions of *Science Connect*, please email Paige Garrido at [pgarrido@fau.edu](mailto:pgarrido@fau.edu).