

# Biology Advising Newsletter



October 2010

## A Message from Biology Department Chair, Dr. Eric Hall



*Dr. Eric Hall and Eric Roberts contemplate biology's deepest questions at RIC Commencement 2010.*

Another semester is underway and it is my sincerest hope that you are successful in all your endeavors. There have been many changes in the past 4-5 months. The first and most obvious of these changes has been the renovation of FLS 050, 108 and 209. Over the summer and into the beginning of the Fall semester these classrooms were gutted and recreated as fully electronic classrooms. At this time, Fogarty Life Sciences has 3 state-of-the-art e-classrooms and the fourth classroom (FLS 213) is equipped with a built-in projector and computer resources. In addition, 7 of our teaching laboratories are now equipped with ceiling mounted projectors and computers. New microscopes have been obtained to support the Microbiology laboratory, and new stools and instructor's microscopes have been

obtained for the FLS 057, 060, 214 and 231 laboratories.

This semester we also welcome our newest tenure-line faculty member, **Dr. Breea Govenar** who has been hired to teach invertebrate zoology, evolution and introductory biology. Dr. Govenar comes to us from Woods Hole Oceanographic Institute with extensive experience in deep sea submersible diving and research on the ecology and evolution of thermal vent worms. Other good news with regards to our faculty includes the well-deserved promotions of **Dr. Eric Roberts** and **Dr. Rebeka Merson** to Associate Professor with tenure! Congratulations to Drs. Govenar, Roberts and Merson!

This semester also marks the implementation of a new required course in the Biology major, the BIOL 241 Biology Colloquium course. New majors will need to take this 0.5 credit course twice as part of their coursework leading to the B.A. in Biology. The prerequisites for BIOL 241 include BIOL 111 and 112. BIOL 241 is designed to give students much needed experience in science communication and critical thinking leading up to the BIOL 460 Senior Seminar course in the senior year. Starting in the Spring of 2011, BIOL 241 will be offered simultaneously with department seminars (a required component of the course) on Thursday afternoons.

Coming news: The B.S. in Biology is currently being reviewed by the Board of Governors and may be coming our way as early as the Fall of 2011.

# Course Information

To help you with your planning, here is the list of biology “electives” (upper-level courses not offered every semester) that are tentatively scheduled for the upcoming year. Please note that 500-level courses are open to graduate students, **and advanced undergraduate students (senior status) with permission.**

## Spring 2011

BIOL 300	Developmental Biology of Animals*•	Dr. Meedel
BIOL 324	Vertebrate Zoology*	Dr. Merson
BIOL 411	Biochemistry II**	Dr. Avissar
BIOL 431	Immunology	Dr. Kolibachuk
BIOL 531	Mammalian Endocrinology	Dr. Anthony
BIOL 533	Research Methods in Molecular Biology	Drs. Roberts & Spinette

## Fall 2011

BIOL 354	Plant Growth and Development*	Dr. Roberts
BIOL 420	Biochemistry of Proteins and Nucleic Acids** (Formerly BIOL 410 Biochemistry I***)	Dr. Avissar
BIOL 450	Topics: Cell Death	Dr. Spinette
BIOL 526	Molecular Physiology of the Cell	Dr. Avissar

- \* Organismal elective for Biology BA
- New prerequisite: BIOL 111/112, BIOL 221 and completion of or concurrent enrollment in BIOL 320.
- \*\* Currently, Biochemistry I is cross-listed as BIOL 410 and CHEM 410 and Biochemistry II is cross-listed as BIOL 411 and CHEM 411. If you are using either of these courses toward a minor in Chemistry, it is advised that you register as CHEM. If you are using them as Biology electives, it is advised that you register as BIOL.
- \*\*\* Starting Fall 2011, changes are underway for courses in biochemistry:
  - BIOL 410 (CHEM 410) Biochemistry I will become  
**BIOL 420 (CHEM 420) Biochemistry of Proteins and Nucleic Acids.**  
The prerequisite for BIOL 420 will be CHEM 206.
  - BIOL 411 (CHEM 411) Biochemistry II will become  
**BIO 421 (CHEM 421) Biochemistry of Carbohydrates and Lipids.**  
The prerequisite for BIO 421 will be CHEM 206.

### Also of note:

BIOL 460, Biology Senior Seminar, is now offered every Fall and Spring semester.  
BIOL 533, Research Methods in Molecular Biology, is now offered every Spring semester.  
BIOL 241, **New!** Biology Colloquium will be offered every semester for 0.5 credits. (See page 5.)

### Research

Contact a faculty member if you are interested in doing a research project (BIOL 49X). Proposals are due April 15 (for Fall semester) or November 15 (for Spring semester).

# Featured Courses

Spring 2011

## **BIOL 300 - Developmental Biology**

A descriptive and experimental approach is applied to animal ontogeny, with consideration of cell fate determination, differentiation, morphogenesis, and pattern formation. Lecture and laboratory. 4 semester hours. Prerequisites: required - BIOL 111/112, BIOL 221 (Genetics) and completion of or concurrent enrollment in BIOL 320 (Cell and Molecular Biology). Offered by Dr. Thomas Meedel.



Jason Silva (SecEd/Bio) participates in a field trip to Olney Pond at Lincoln Woods State Park with his classmates from Dr. Sheriden's Ecology course (BIOL 318).

## **BIOL 324 - Vertebrate Zoology**

With emphasis on diversity, evolution, and life history we will study adaptations of vertebrates. We will explore local fauna, form, and function through laboratory activities and fieldtrips. Lecture, laboratory, and fieldtrips. 4 semester hours. Prerequisites: required - BIOL 111/112. Offered by Dr. Rebeka Merson.

## **BIOL 411 - Biochemistry II**

Focus is on biosynthetic pathways and medical aspects of biochemistry. Designed for Biology and Chemistry majors in their junior or senior year, and for graduate students. Recommended for high-school teachers and for students planning on continuing their studies in medical school or other health-related areas. Lecture only. 3 semester hours. Prerequisite: Biochemistry I (BIOL 410) or consent of the instructor. (Please see changes to biochemistry offerings described on page 2.) Offered by Dr. Yael Avissar.

## **BIOL 431 - Immunology**

Ever wonder what goes on in the body to protect us from illnesses, cancer, and physical trauma? How does our body recognize friend from foe? Can our cells "talk" or communicate with each other? What happens when this system of protection fails or goes overboard? If so, the study of immunology is for you! Course topics include: Cellular and Humoral Specific Immunity; Nonspecific Immunity; Complement; Transplant Immunology; Antigen and Antibody Structure and Interactions; Immune Responses to Bacteria, Viruses, and Parasites; Hypersensitivity; Tumor Immunology; Immune Disorders & Deficiencies; HIV and AIDS; and Development of Immunological Specificity. Lecture only. 3 semester hours. Prerequisites required: BIOL 111/112, CHEM 205/206 (or the equivalent); or consent of the chair. Offered by Dr. Kolibachuk.

## **BIOL 531 - Mammalian Endocrinology**

Topics include neuroendocrinology, hypothalamic-pituitary relationships, mechanisms of hormone action, endocrine aspects of reproduction, carbohydrate metabolism, calcium homeostasis, and water/electrolyte balance. Lecture only. 3 semester hours. Prerequisites: required – two 300-level or above biology courses. Offered by Dr. Edythe Anthony.

## **BIOL 533 - Research Methods in Molecular Biology**

This relatively new course (in its 3rd term) is likely to be different than any you may have taken at RIC thus far. It is designed to allow students to practice the skills that are necessary to take a real experiment from beginning to end using both fundamental techniques learned in previous classes as well as more advanced molecular methods. While the instructors will supply the basic experimental design, students will run many aspects of the project, including preparing reagents, deciding what controls to include, doing basic calculations and dealing with any problems that arise during the experiment. While much of the work in BIO 533 will be hands on, at the culmination of the course students will submit a paper in the form of a primary scientific manuscript describing and discussing the experiments that were performed and the results that were obtained. 4 semester hours. Open to graduate students and undergraduates with senior status. Offered by Drs. Sarah Spinette and Eric Roberts.

## This Year's HHMI Lectures on Viruses

Since 2005 the Rhode Island College Student Chapter of the National Science Teachers Association has been hosting the live webcast of the Howard Hughes Medical Institute Holiday Lectures on Science. Past years have covered such interesting and exciting topics as evolution, neuroscience, stem cells and bacterial quorum sensing. This year, Joseph DeRisi and Eva Harris, HHMI investigators, will explain how they use both simple and sophisticated technologies to detect and fight infectious agents.



Attend any or all of the four lectures in the series, webcast live in **Alger 110** on **December 2 and 3** at **10:00 am and 11:30 am** each day. Refreshments will be provided. For more information visit [www.hhmi.org/biointeractive](http://www.hhmi.org/biointeractive) or email [NSTA@so.ric.edu](mailto:NSTA@so.ric.edu) to contact the NSTA officers here at RIC.



## Announcements

### Biology New England South (BioNES)

Research presentations by faculty and students at the 5th Annual Meeting. Friday, December 3, at Roger Williams University. More details coming soon! Submitted by **Dr. Rebeka Merson** ([rmerson@ric.edu](mailto:rmerson@ric.edu)).

### Faculty Research Event

Tuesday, November 9, at 4 pm in Alger 110. Speakers include our own **Dr. Roland de Govenain** presenting "Natural vs. human-created fire regime differences: Which border matters?" (RIC Alumni, Friends of Adams Library, Fac Research Comm.)

## Club News

The **RIC Student Chapter of the National Science Teachers Association** is gearing up for a trip to the regional conference in November and the HHMI webcast in December. The next regular meeting is Wednesday Nov. 3, at 12:30 in FLS 213. For more information, contact club officers ([NSTA@so.ric.edu](mailto:NSTA@so.ric.edu)).

The **Biology Club** generally meets on Mondays at 12 pm in the Biology Lounge. The annual holiday party is planned for Dec. 3 at 12:30 pm in the lounge. Contact club president **Janis Hall** ([jhall\\_3536@ric.edu](mailto:jhall_3536@ric.edu)) for more information.

## Biology Seminars

"piRNA function in transposon silencing and germline development" **Dr. William Theurkauf**, UMASS Med, Wed. Oct. 27, 12:45 pm in FLS 050.

"The natural history and population biology of the North American Beaver" **Dr. Peter Busher**, Boston Univ; Thurs. Nov. 18, 12 pm in FLS 108.

Senior Seminar (BIOL 460) student presentations are scheduled for Dec 1 and 8 at 12:30 pm in FLS 050. Presenters are **Dennis Clark, Katie Fischbach, Abayomi Kizekai, Gwendolyn Kupper**, and **Ashlee Mallette**.

## New Course: BIOL 241 Biology Research Colloquium

This course is open to all biology majors who have completed BIOL 111 and 112. Students will attend formal scientific research seminars given by invited scientists from diverse fields of biology. Outside of the seminar room, students will also discuss research and other topics with their peers, and the invited speaker in an informal setting. On days when seminars are not scheduled, the class will meet to discuss the research methods and style of presentation

used by the various speakers. This course will give students a deeper understanding of the broader fields of biology, introducing methods and techniques that are commonly used in the field and provide examples of the type of data that is obtained and how it is analyzed. In addition, it will provide models for the oral presentation of a scientific argument. Therefore, BIOL 241 will be valuable preparation for Senior Seminar (BIOL 460), during which students must give a formal oral presentation. (Dr. Sarah Spinette)

## Where are they now?



**Rayna Silva** (BA '10) continues her studies at RIC in the new program: Certificate of Graduate Studies in Modern Biological Sciences. She also works in the RIC greenhouse.

**Stephanie Izzi** (MA '10) is studying for her PhD in the Graduate Program in Genetics at SUNY Stony Brook. "Stony Brook has been challenging but very fun and exciting so far. I'm happy to have the opportunity to continue the education I began at RIC."

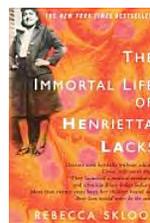
**Princess Mark** (BA '09) has been accepted to American University of Antigua College of

Medicine and will begin there this upcoming semester. She currently works at the RI Hospital Liver Research Center.

Let Dr. Conklin know if you have any alumni news to share!

## Biology Book Club

The Biology Book Club will meet to discuss The Poisoner's Handbook by Deborah Blum on Tuesday, November 23 at noon in the Lough Room (FLS 200). We'll have pizza to share. All are welcome. We've already chosen our book for winter break: The Immortal Life of Henrietta Lacks by Rebecca Skloot. It is about the generation of the HeLa cell line, and is receiving great reviews. (Dr. Suzanne Conklin)



## Photo Credits



Page 1 title banner: (1) *Cladophora* by **Sara Valletta** and **Paul Carbone**, (2, 3) *Fungi* by **Marc Antaya** (4) *Spirogyra* by **Cara Raposa** and **Heather Socha** - all students in Dr. Conklin's BIOL 112 class this semester.

**Dr. Roberts and Dr. Hall** page 1, Senior Seminar Speakers (**Liam Burke**, **Giuliana Brancaccio** and **Ysatis Peters**, all BA '10) page 4, **Rayna Silva** at Commencement and **Holly Dirks** (BA SecEd/BIO '10) sailing with camera, page 5 by **Dr. Suzanne Conklin**. Ecology field trip page 3 by **Andrew Barosian**. NSTA members at Campus Activities Day page 4 by **Kristen Salemi**. **Jessica Waters** (SecEd/BIO '08) and **Gayane Avagyan** (BA '08) conducting forest ecology research page 4 by **Dr. de Govenain**.