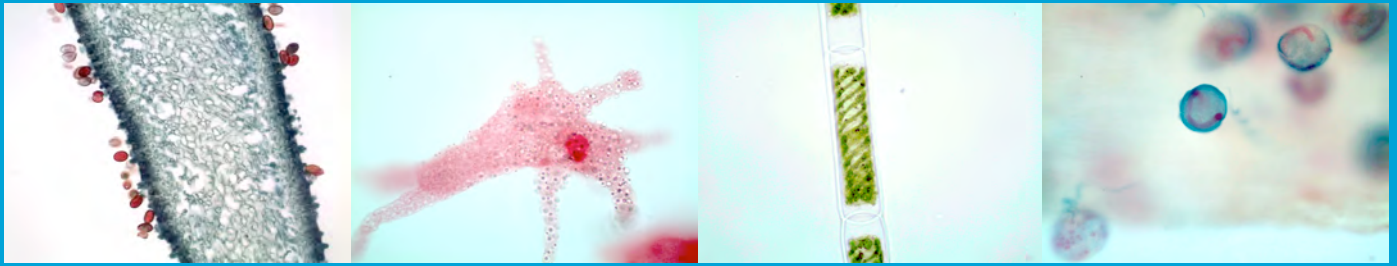


Biology Advising Newsletter



Rhode Island College

October 2011

A Message from Biology Department Chair, Dr. Eric Hall

Another semester is well under way and this advising newsletter finds itself coming out a little late at least partially because of the many changes occurring on campus. If you are a returning student, Welcome Back and if you're a new student, Welcome Aboard!

Many of the changes that are occurring are easily visible with the fire code upgrades throughout the campus. Within Fogarty Life Sciences, FLS 059 is undergoing a renovation to create additional laboratory space for faculty and students.

Other changes include the birth of Dr. Spinette's daughter **Yasmina**—biology in action!

The change that affects you most, of course, is the Board of Governor's approval of the Bachelor of Science (BS) in Biology. This has been a journey of change that started in Fall 2004 with the addition of BIOL 460 Senior Seminar as a requirement. In Fall 2010 we added the BIOL 241 Biology Colloquium course and in Fall 2011, with the addition of the mathematics cognates (MATH 240 Statistics and a choice of either MATH 181 Applied Basic Mathematics or MATH 212 Calculus I), the Biology degree was changed from a BA to a BS! All new students will automatically be enrolled in the BS program, while students enrolled at the college before Fall 2011 will have a choice of graduating with the BA or the BS (consult your advisor for details).

Finally, it is with great pleasure that we acknowledge **Xenia Fernandez** as the winner of a 2011-2012 Eleanor M. McMahon Rising Junior Honors Scholarship!



Meet Yasmina Spinette!



Student winners of the McMahon Scholarship with their research mentors. **Xenia Fernandez** (front row) and **Dr. Britt** (back row) are shown 2nd from left.

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 from the instructor.**

Spring 2012

BIOL 300	Developmental Biology of Animals ^{①②}	Dr. Meedel
BIOL 329	Comparative Vertebrate Anatomy	Dr. Mazurkie (adjunct)
BIOL 421	Biochemistry of Lipids and Carbohydrates	Dr. Avissar
BIOL 429	Medical Microbiology	Dr. Britt
BIOL 440	Evolution	Dr. de Gouvenain
BIOL 550	Topics: Molecular Genetics	Dr. Matsumato

Fall 2012

BIOL 354	Plant Physiology ^①	Dr. Roberts
BIOL 435	Comparative Vertebrate Physiology	Dr. Hall
BIOL 450	Topics: Symbiosis	Dr. Governar
BIOL 450/550	Topics: Ecotoxicology	Dr. Merson
BIOL 550	Topics: Biology of Cancer	Dr. Avissar

- ① Organismal elective for Biology BA
- ② New prerequisite: BIOL 111/112, BIOL 221 and completion of or concurrent enrollment in BIOL 320.
- ③ Starting Fall 2011, changes are in place for courses in biochemistry as follows:

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 Lipids and Carbohydrates.

The prerequisite for BIO 421 will be CHEM 206.

Biochemistry of Proteins and Nucleic Acids is cross-listed as BIOL 420 and CHEM 420 and Biochemistry of Carbohydrates and Lipids is cross-listed as BIOL 421 and CHEM 421. 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.

Also of note:

Both BIOL 241 (Biology Colloquium 0.5 credits) and BIOL 460 (Senior Seminar, 3 credits) are offered every Fall and Spring semester.

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 2012

BIOL 300 - Developmental Biology of Animals

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.

BIOL 421 - Biochemistry of Lipids and Carbohydrates

This course deals with the variations of energy metabolism and its regulation in various organisms. It is independent of Biochemistry 420 and does not require it as a prerequisite. The required textbook is: Nelson and Cox: Lehninger Principles of Biochemistry (5th edition) ISBN 978-0-7167-7108-1 with an optional Study Guide. 3 semester hours. Prerequisites: CHEM 206 and either BIOL 320 or CHEM 310. Offered by Dr. Yael Avissar.

BIOL 429 - Medical Microbiology

Have you ever wondered why some infections are deadly, while others only give you the sniffles? In BIOL 429 we take an up-close look at the fascinating world of microorganisms that cause human disease. We'll consider the arsenal of molecular tools bacteria use to invade our bodies, avoid our defenses, outsmart our antibiotics and make us sick. In the lab portion of the class you will learn the techniques necessary to handle infectious materials safely, along with traditional and modern methods for identifying microorganisms. The course will also take a look at viral and parasitic infections and the unique ways they make use of their human hosts. Prerequisites: required - CHEM 205, 206, BIOL 348 and curiosity! 4 semester hours. Offered by Dr. Deborah Britt.

BIOL 440 - Evolution

Together with several guest speakers, we will explore current hypotheses and models about the origin of life on Earth, mechanisms of natural selection and evolution, speciation, milestones in the evolution and extinction of life on Earth, evo-devo, and phylogenetic methods. The latest findings that are rapidly changing our understanding of human evolution will remind us that scientific paradigms should always be challenged. We will also take some time to examine the history of the theory of evolution, its connection to other sciences such as geology and anthropology, and major players including Lamarck, Lyell, Darwin, Wallace, and Gould. Prerequisites are BIOL 111/112 and BIOL 221. The format will include lectures and regular readings/discussions of important papers. 3 semester hours. Offered by Dr. Roland de Gouvenain (rdegouvenain@ric.edu).

BIOL 550 - Molecular Genetics

This reading/discussion-intensive advanced genetics course is intended for graduate students, but open to senior undergraduate biology majors (90+ credits) with a good background in genetics. The course is divided into three sections: the first covers classic papers in molecular biology, the second examines genetic regulatory mechanisms as well as mutagenesis and transposition, and the third deals with genetic recombination in bacteria, bacteriophages, and eukaryotic cells. Grading is based on a take-home midterm, a final paper, and class participation. 3 semester hours. Offered by Dr. Lloyd Matsumoto.

Are you interested in a PhD, medical school or other professional school, but not ready for the long-term commitment? Then consider entering the Masters of Arts in Biology Program at RIC. Visit our website for more information: http://www.ric.edu/biology/program_ma.php

Club News

The Biology Club



Join us every free period for biology fun! We discuss research opportunities, play biology-related games, watch films and plan events. Parties, charitable events and trips are all in the works. This November, we are planning a trip to Harvard's Museum to Natural History!

The Biology Club meets in Rm. 209, at 12:30, every free-period except for the first Wednesday of the month, when we meet elsewhere to watch Biology-related films. There is still time to join!

Email: biomedtechclub@so.ric.edu

Janis Hall, CJ Pickett and Mike Martel enjoy the end-of year Biology BBQ last May.

National Science Teachers Association - RIC Student Chapter



NSTA is off and running with a new slate of officers, a Facebook page, and two big events. In early October, the club hosted the webcast of the annual Holiday Lectures on Science from the Howard Hughes Medical Institute. This year's topic was human evolution, and the lectures are now available on-demand through HHMI (<http://www.hhmi.org/biointeractive/>). Later this month, the club will attend the 2011 NSTA Area Conference in Hartford, CT. The club meets the first Wednesday of every month in FLS 209 at 12:30 pm. Future teachers and all those interested in science education are welcome! For more information, contact NSTA@so.ric.edu.

Sam Taylor participates in a dissection at the 2010 NSTA Area Conference in Baltimore.

Biology Research Journal Club



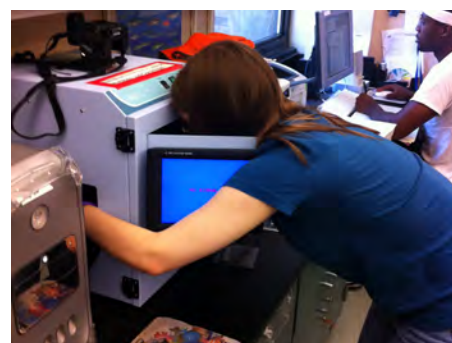
A big part of any research project is letting other people know what you've found, and scientists communicate their results by publishing papers. If you're curious about new discoveries in biology, would like to learn about scientific communication, or just want some practice reading journal articles, then you are welcome to join the newly-formed Biology Research Journal Club. The club is open to all biology undergraduates and meets biweekly to discuss journal articles chosen by the group. For more information, contact club president **Bonnie Colantuono**, or advisor **Dr. Britt**.

Rilwan Yussuff assembles genomic DNA into genes in the Merson lab.

News and Announcements

STEM Quahog Scholarship Program

The STEM Quahog Scholarship Program is intended to provide financial aid to undergraduate students majoring in the STEM disciplines (science, technology, engineering, and mathematics) by providing up to \$5000 in grants per year toward their financial need, as determined by the RIC Office of Financial Aid. In order to qualify, students must, among other things, be US citizens or permanent residents, major in a STEM (Science, Technology, Engineering, or Math) field, and be eligible for financial aid. For further information, contact Dr. Roland de Gouvenain.



Think about Writing

A Message from Dr. Matsumoto

A combination of existing programs at RI College will give flexibility to the Bachelor of Science or Bachelor of Arts degree in biology. By combining a biology major with a minor in rhetoric and writing, a biology major can effectively have a writing concentration through the English department. In addition to the general education prerequisites of Writing 100 and English 161, the minor in rhetoric and writing requires a total of twenty credits as follows.

Two courses from the following list (8 credits):

- English 230: Writing for Professional Settings
- English 231 Writing for Digital and Multimedia Environments
- English 232 Writing for the Public Sphere

Two course from the following list (8 credits):

- (When on an appropriate topic)
- English 350: Topics
- English 378: Studies in Composition
- English 379: Studies in Rhetoric
- English: Modern English Grammar

English 477: Internship in Rhetoric and Writing (4 credits)

The advantage of a biology major and a rhetoric and writing minor is the increased probability of employment and admission to graduate school. Recently, MIT began a new master's level graduate program in Science Writing as a starting point for a career in scientific journalism. Statistics show that a college graduate will change career positions several times before retirement. A biology major with a minor in rhetoric and writing should help make those segues in life a breeze!

News and Announcements

Biology Colloquium Series

Have you been attending this semester's biology seminars? If so, you've seen some great examples of biology research in action. There are a few more scheduled for the rest of the semester, so be sure to catch one or more. There are also lots of student presentations given by Senior Seminar students. Come out and support fellow students and see what goes on in Senior Seminar! **Dr. Avissar**, **Dr. Britt** and **Dr. Conklin** are teaching BIOL 460 this semester.

Did you know that 2 semesters of BIOL 241 (Colloquium, 0.5 credits each) is required of all new biology majors and all continuing students who intend to receive the BS degree? **Dr. Roberts** is running the course this semester. Contact him for more information.

All seminars are held in FLS 108. Seminars on Thursdays start at 4:00 pm. Seminars on Wednesdays start at 12:30 pm.

- Thurs Oct 27 **Anna-Louise Reysenbach**, Portland State Univ, "From mantle to microbe: Geology shapes microbial communities of hydrothermal vent deposits."
- Thurs Nov 3 **Idowu Akinsheye**, BU School of Med, "Fetal hemoglobin regulation in sickle cell disease: Molecular characterization of the high HbF phenotype."
- Thurs Nov 10 **Aisling Dugan**, Assumption College, "The immune system strikes back: How defensins inhibit BK virus infection."

Senior Seminar Student Presentations:

- Wed Nov 16 **Lyndsey Biern, Llian Marbardi, Tina Cappello**
- Thurs Nov 17 **Bonnie Colantuono, Samantha Joinville, Jonathan Trafford-Seabra**
- Wed Nov 23 **Jessica Kirwin, Christina Papagolos, Jennesa Torres**
- Wed Nov 30 **Seamus Kiernan, Francis Guerra, Lauren Piekos**
- Thurs Dec 1 **John Barney, Adeola Osinaga, Anavelise Rivera**
- Wed Dec 7 **Ashley-Rae Emerson, Ireny Makram**
- Thurs Dec 8 **Brian Butler, Paul Carbone, Michael Harter**

Interested in doing research and earning honors in Biology? Get started by checking out **Honors Program in Biology** page on the RIC website .

www.ric.edu/biology/generalInfo.php

Contact [Dr. Spinette](#), [Dr. Roberts](#), or [Dr. Matsumoto](#) for more information.



Recent graduates (BA '11) Carolyn Lewis and Amanda St. Germain prepare to give their Senior Seminar presentations last Spring.

News and Announcements

Where Are They Now?

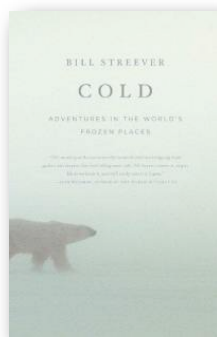


Clarissa Williams (BA '09) is studying for her DVM at Ross University School of Veterinary Medicine in St. Kitts. "Vet school can be both challenging and exciting. I never expected to see so much diversity among students after the same goal. I am grateful that my education and experiences helped me to be a contributor to the Ross University student body."



Jessica Fidalgo (BA '09, double major w/ Psychology) attended Boston University School of Medicine Division of Graduate Medical Studies for a Master's in Mental Health Counseling and

Behavioral Medicine and completed the program in May of 2011. While in the program, she gained experience at a variety of inpatient and outpatient agencies working on rape crisis, domestic violence and adolescent cases. Currently, she works as a Behavioral Health Clinician at Thundermist Health Center in Woonsocket, a medical center that provides adult medicine, pediatrics, women's health and dental care services. She works as a member of the medical team to help patients maintain and manage their physical and mental health.



Biology Book Club

This summer the biology book club ducked the heat and read Cold: Adventures in the World's Frozen Places by Bill Streever. There are two events planned for this semester, both sure to give you the chills. First, there will be a screening of the David

Attenborough documentary "Life in the Freezer" on Wednesday, Nov 9, in FLS 108. Then, we'll have our discussion, complete with lunch (and ice cream!) later in the semester. All are welcome, readers and non-readers alike. **Dr. Conklin** and **Dr. Roberts** organize the Biology Book Club.

Photo Credits

The page 1 banner photos were taken by students in Dr. Conklin's Biology 112 course this semester. The photo of **Yasmina Spinette** was taken by Dr. Conklin. The photo of the McMahon Scholarship winners was submitted by Dr. Spencer Hall.

The page 4 photo of Spring 2011 Senior Seminar students was taken by Dr. Conklin.

The page 5 photos of **Nicole Cote**, **Jessica Fernandes** and **Katie Holfelder** working in the Merson lab were submitted by Dr. Merson. (The clam images was obtained from iClipart, a free clip art web site.)

On page 6, the Biology Club BBQ photo was taken by Dr. Conklin, the NSTA photo was submitted by club VP **Eric Ferrara**, and the research picture was submitted by Dr. Merson.

RIC Biology graduates **Clarissa Williams** and **Jessica Fidalgo** submitted their own photos.