

ADVISING NEWSLETTER

Dear Biology Major,

It is that time of year to register for courses for Fall 2015. If you plan to be at RI College in the fall, the single most important thing that you must do is to consult your advisor. Your advisor is not a button that you push to simply remove your block from registration but about the most valuable asset for your success at RI College and possibly your future. If you have a direction and/or goal that you wish to move towards, your advisor can directly help you to move down that road or send you to someone who might be able to marshal more advisement resources to help you. The more focused you are as to what you want to accomplish career wise, the more helpful an advisor can be to you. Try not to be too nebulous (I am a biology major and I want to be a surgeon someday), but look at the reality of your situation (I have 60 credits and my GPA is a 1.98) and plan to have multiple plan "Bs." Life is not reduced to a single choice; there are multiple pathways to your happiness and success in the

future. I like to look at advisement from an anatomical perspective. You are the "head" which contains a brain where all decisions are made. Your advisor is like a "neck" and can only point you in the right direction but make no decisions for you. The successful coordination of "head and neck" can insure that you are on the right road to achieving your career goal.

John Wooden was a successful basketball coach in the 60's and 70's at UCLA. He was also a strong motivational speaker for his players and is noted for his "Woodenisms." Here's one of them, "Things turn out best for those people who make the best of the way things turn out." Your advisor will help make things turn out the best for you.

Lloyd Matsumoto, Ph.D.

Professor and Chair



Photos: Dr. Merson's Vertebrate Zoology (BIOL 324) class visits The Nature Lab at the Rhode Island School of Design. Students examined skulls of vertebrates to compare dentition and to determine dental formulae of mammals. Pictured (top to bottom): Loudyina Toussaint, Sean Grace, Jennifer Sodetz, Tanya Toste and Noelle Tousignant.

Biology 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.

Fall 2015

BIOL 321	¹ Invertebrate Zoology	Dr. Govenar
BIOL/CHEM 420	Biochemistry of Proteins and Nucleic Acids	Dr. Holmes
BIOL 425	Comparative Animal Physiology	Dr. Hall
BIOL 531	Mammalian Endocrinology	Dr. Anthony
BIOL 535	Advanced Physiology I	Dr. Hall

Spring 2016

BIOL 213	Introductory Physiology of Plants and Animals	Dr. Conklin
BIOL 240	Biostatistics	Dr. de Gouvenain
BIOL 354	¹ Plant Growth and Development	Dr. Roberts
BIOL/CHEM 421	Biochemistry of Energy Metabolism	Dr. Almeida
BIOL 440	Evolution	Dr. de Gouvenain
BIOL 450/550	Ecotoxicology (Hybrid)	Dr. Merson
BIO 536	Advanced Physiology II	Dr. Hall

¹ **Organismal elective** for Biology BS.

Always check prerequisites! Most BIOL numbered 200 or above require Biology 111 and Biology 112 (with a grade of C or better) as prerequisites. Some classes (like BIOL 300 and courses in biochemistry) require additional prerequisites.

500-level courses are open to graduate students, and advanced undergraduate students (senior status) with permission from the instructor and the Dean’s office.

If you are using a **cross-listed biochemistry course** toward a minor in Chemistry, it is advised that you register as CHEM. If you are using it as a Biology elective, it is advised that you register as BIOL.

Both BIOL 241 (**Biology Colloquium** 0.5 credits) and BIOL 460 (**Senior Seminar**, 3 credits) are offered every Fall and Spring semester. Consider taking one session of BIOL 241 concurrently with BIOL 460; attendance at some seminars is a requirement for Senior Seminar anyway.

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

NOTE:

It’s official! BIOL 240, **Biostatistics**, is now an ongoing course and will be offered every Spring. Students working towards a BS in Biology may use this course or MATH 240 to satisfy the statistics requirement.

NOTE:

Since not all biology courses are offered every semester, every year, you may wish to take a summer course so that you can take an upper division course that is offered every other year. Slated for this **Summer**: 111, 112, 231, 335, and 348.



BIOL 460, **Biology Senior Seminar** now requires pre-registration. Pick up a form from Sharon Rogers, Biology Department Secretary, and she will process all registrations.

Featured Biology Courses

Fall 2015



Dr. Avissar gets the gift of reading at her retirement party.

BIOL 321 - Invertebrate Zoology

Invertebrate Zoology will consist of a study of invertebrates living in marine, freshwater, and terrestrial habitats from ecological and evolutionary perspectives. Laboratory activities will include observation of living and preserved specimens, some dissection, and local field trips. 4 semester hours. Prerequisites: required - BIOL 111/112. Offered by Dr. Brea Govenar.

BIOL 420 - Biochemistry of Proteins and Nucleic Acids

In Biochemistry (BIOL 420), we will study organic molecules and chemical reactions in a biological context. This course will focus on protein structure, folding, activity, and the biochemical factors that determine its three-dimensional shape. We will also discuss the synthesis of nucleic acids and their biochemical properties that make them essential energy and information carrying molecules. In studying the chemical details of these molecules, we can further our understanding of basic biological processes that determine a cell's specific function. BIOL 420 satisfies the Biochemistry requirements of most graduate programs in the Life Sciences. Lecture only. 3 semester hours. Prerequisite: BIOL 111/112 and CHEM 206. Offered by Dr. William Holmes.

BIOL 435 - Comparative Animal Physiology

Energetics to sex, feeding strategies to book lungs. A semester of learning about the evolution of unique and not so unique adaptations to different environments. From anal papillae to bacula you will be amazed. 3 credit hours. Prerequisite is BIOL 221. Offered by Dr. Eric Hall

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 535 - Advanced Physiology I

Examination of human physiology and pathophysiology in relationship to anesthesia practice. This course will utilize a systems approach to the topics of cellular physiology, neurophysiology, cardiovascular and respiratory physiology. 4 credit hours. Prerequisite: Enrollment in the MSN Nurse Anesthesia option or permission of the instructor. Offered by Dr. Eric Hall.



Introducing our newest faculty member:

Dr. William Holmes



What were you doing before you came to RIC?

Before starting here at RIC, I was a post-doctoral teaching fellow at the College of the Holy Cross in Worcester, Mass. I was teaching intro to cellular and molecular biology for majors and biochemistry. I also did research in the Bellin Lab, where I mentored a number of undergraduates. The main project I was working on involved creating unique three dimensional surfaces to grow mammalian cells on in an attempt to more accurately recapitulate the tissue microenvironment.

What made you want to teach at a primarily undergraduate institution?

I have wanted to teach at a school like RIC since I graduated from a small, liberal arts college. The direct interactions with the faculty inspired me to push myself and I knew I wanted to inspire students in the same way.

What courses do you teach or do you plan on teaching?

I am currently teaching Bio 100 (lab and lecture) and a section of Bio 108 lab. Moving forward, I will be teaching Intro to cellular and molecular biology for majors (BIOL 111) and Biochemistry (BIOL 420 and 421). In the not too distant future, I am excited to offer a Biochemistry of Food course to support the Food Safety Concentration.

Tell us about the research you are planning in your lab.

The overall focus of my lab centers around protein folding, stability, and the effects of posttranslational modifications on protein stability. Specifically, my lab will be studying the biochemical factors that can alter the propensity for proteins to form toxic aggregates, which is the root cause of a number of neurodegenerative diseases (Huntington's, Parkinson's, Alzheimer's, prion based diseases). Students in my lab will utilize a broad range of techniques to assess protein aggregation: protein purification for in vitro experiments and *Saccharomyces cerevisiae* (brewer's yeast) for in vivo experiments.

What do you think about RIC so far?

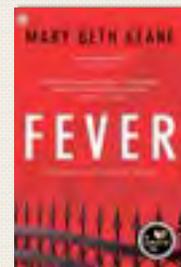
I love it! It is a great small college experience, while offering students exceptional courses, dedicated instructors, and the opportunity for an independent research experience.

What is the best part of your new job?

Easily the people - the students, the faculty, everyone! Everyone is so nice and helpful and it makes the transition a little more comfortable. I enjoy seeing students in the lounge and they always smile and say 'hi'.

Biology Book Club

The Biology Book Club is a very informal group of faculty, students and staff that enjoy reading about biology. We aim to read two books together per year, one over the summer and one over the winter break. Then, we arrange a few activities the following semester around the book's theme. This past winter we read the historical fiction piece Fever: A Novel of Typhoid Mary by Mary Beth Keane. We organized the Infectious Disease Career Panel Discussion early this semester and have two remaining events. We will watch a NOVA episode on Typhoid Mary and have our usual book discussion and lunch. Everyone is welcome to attend all events... even if you didn't read the book!



NOVA Video **Typhoid Mary: The Most Dangerous Woman in America**

Friday, April 3
12:00 noon - 1:00 pm
FLS 200
Snacks provided!

Book Discussion
Friday, April 17
12:00 noon - 1:00 pm
FLS 200
Lunch provided!
Student raffle!

Questions?
Contact Dr. Conklin
sconklin@ric.edu

As "Women in STEM", Dr. Govenar, Dr. Conklin, Dr. Britt and several students enjoyed VIP seating at President Obama's visit to Rhode Island College last October.



Presidential Photos by Dr. Jerry Montvilo (retired RIC Biology Professor). Faculty snapshot by Keyshla Melendez, BS '15.

SENIOR SEMINARS

(FLS 050, WED@12:30PM OR THUR@4:00PM)
Come support our graduating seniors!

- THUR 2 APR:** Justine Banspach, Sarah Hadley, Kayla Hersey
- WED 8 APR:** Samantha Vann, Stephanie Nappa, Emmanuel Asiedu
- THUR 9 APR:** Amanda Lane, Ivonne Hernandez, Amelia Kah
- WED 15 APR:** Danielle Belluscio, Jared Hughes, Melanie Gaspar
- THUR 16 APR:** Loujina Toussaint, Sarah Bilida, Adam Babbitt
- WED 22 APR:** Sharlene Doran, Amanda Fagundo, Caroline Hurley
- THUR 23 APR:** Brittany Baker, Michael Mazo, Stephanie Warren
- THUR 30 APR:** Keya Thakkar, Sean Grace, Joseph Guerreiro



It is with sadness we report that our lab coordinator, colleague and friend, Victoria Hittinger, is leaving RIC this semester. If you have worked for Vickie or taken a class from her, please take a minute to thank her for her years of service to the Biology Department and to RIC, and to give her your best wishes. (Photo with Dr. Matsumoto, 2013.)



Biology Students!

Now you can

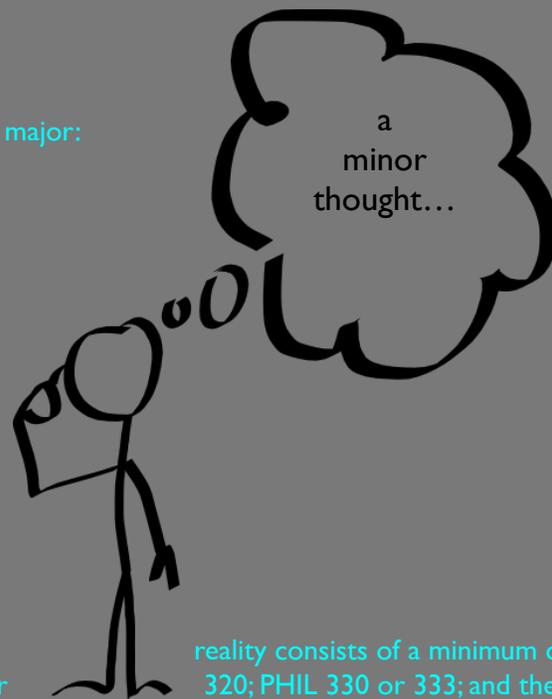
Minor in Principles of Knowledge and Reality

with just 3 courses beyond the requirements for the Biology major:

- one **logic** course, from:
PHIL 205 (Introduction to Logic)
PHIL 305 (Intermediate Logic)
PHIL 220 (Logic and Probability in Science)
- one **epistemology** course, from:
PHIL 311 (Knowledge and Truth)
PHIL 320 (Philosophy of Science)
- one **metaphysics** course, from:
PHIL 330 (Metaphysics)
PHIL 333 (Philosophy of Mind)

Full Description: The minor in principles of knowledge and credit hours, as follows: PHIL 205 or 305 or 220; PHIL 311 or remaining credit hours made up of additional choices from the PHIL 200, BIOL 111, CHEM 103, 104, 105, MATH 139, PHS 101, 102, 110, PHYC 110, 341, 349.

For more information, contact the Chair of Philosophy at grawson@ric.edu



reality consists of a minimum of 18 320; PHIL 330 or 333; and the seven courses above and/or from

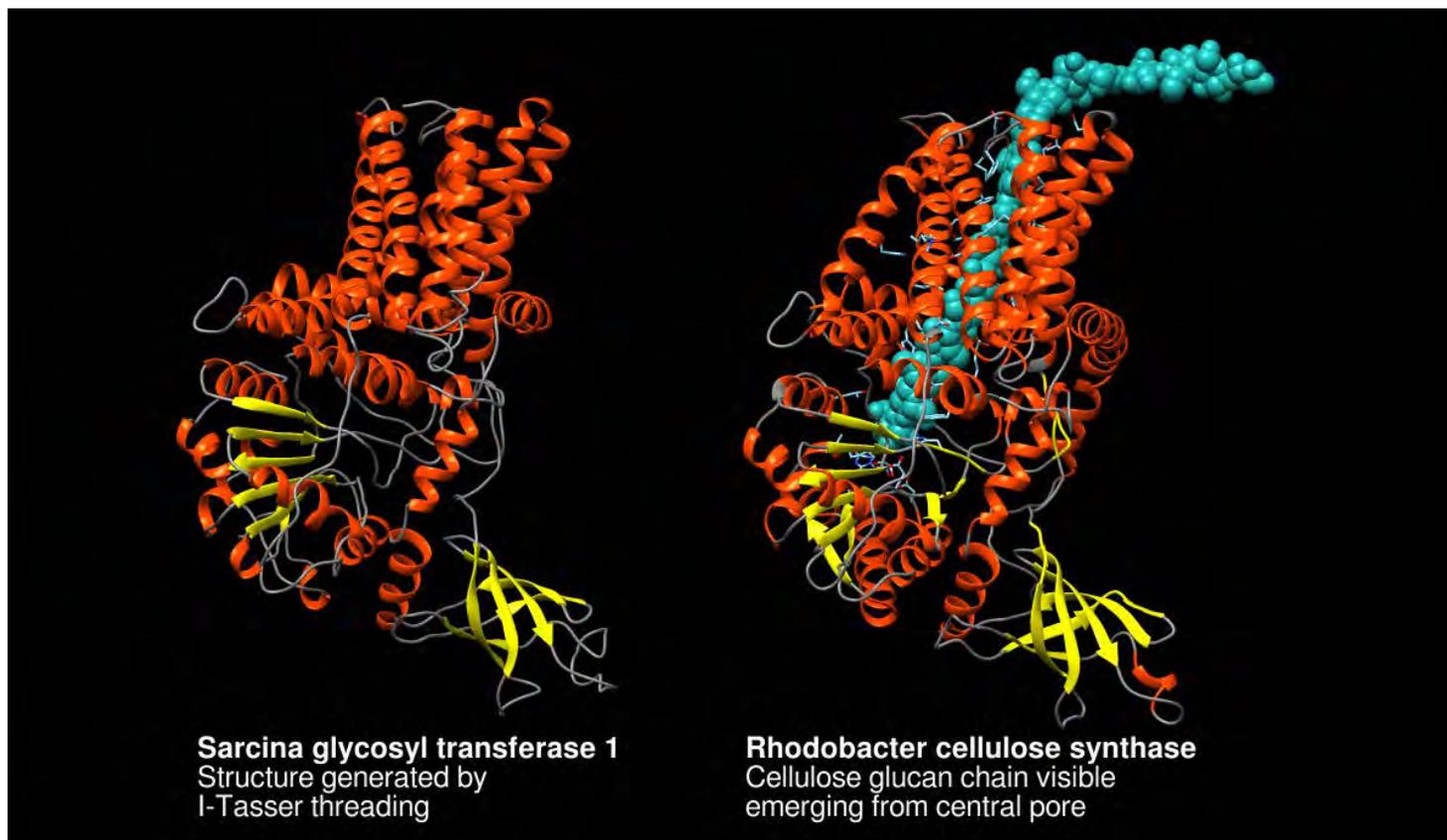
WHERE ARE THEY NOW?



Cindy Cesar BS '13 was recently accepted into Tuft's Cummings School of Veterinary Medicine. With a lifelong ambition to be a veterinarian and a lot of determination and hard work, Cindy shows us that grit can turn dreams into reality. Cindy currently works as a veterinary technician here in RI and will be packing her bags and heading to MA this summer to begin work on her Doctorate in Veterinary Medicine.

CJ Pickett BS '13 was recently accepted into the UCSD/SDSU Joint Doctoral Program in Cell and Molecular Biology in San Diego CA. CJ worked in Dr. Meedel's lab while in the RIC Biology Department. He sends us this information: "As a member of the developmental biology lab of Dr. Robert Zeller, I am currently working on developing variations of CRISPR/Cas technologies for (1) blocking gene-of-interest expression and (2) for knocking perturbations *into* the *Ciona intestinalis* genome. I will be using these technologies as a way to further elucidate our lab's preliminary gene regulatory network of ciliated sensory neurons of the *C. intestinalis* peripheral nervous system."





This image was sent from down under by **Dr. Eric Roberts** who offers the following explanation:

This image shows a comparison of two bacterial enzymes that synthesize polysaccharides. On the right is the structure of the cellulose synthase of *Rhodobacter sphaeroides* that is based on X-ray diffraction. The growing cellulose chain (cyan) is seen emerging from a channel in the enzyme. A model of a similar enzyme from the Gram positive bacterium *Sarcina ventriculi* is shown on the left. As suggested by the similar tertiary structure, this enzyme is also thought to be involved with polysaccharide synthesis (either cellulose or a similar polysaccharide called mixed-linkage glucan). The *Sarcina* model is based on sequence data obtained by undergraduate researcher **Joe Guerreiro**. It was generated by using the *Rhodobacter* enzyme as a template for modeling the *Sarcina* protein. In both cases alpha helices are shown in red, while beta-sheets are rendered in yellow. (Dr. Roberts is currently on sabbatical in Adelaide, Australia.)



BIOLOGY CLUB NEWS

You don't see a python in the Biology lounge every day. So understandably, the lounge was full of students to enjoy the **Biology Club** sponsored interactive reptile show that took place on Wednesday, March 4th. Students were able to interact with: a small assortment of colubrid snakes, a yellow-footed tortoise, a common snapping turtle, a blue-tongued skink, a yearling American alligator, a ball python, and an 8 ft albino Burmese python!

Reptile expert, **Ray Ward** was the guest for the event. He is a member of the National Geographic Society and was the first President of the Rhode Island Herpetological Association. The club hopes to bring this experience to FLS again in the future.



Holding the python (L-R): Brian Quigley, Sarah Bilida, Adam Jacques, Jose Hurtado, Phillip Ashkar, Shiler Mohammed, Saman Nayyab, Mayelin Pacheco.

Next on the agenda for the Biology Club: elections. All officer positions are open for nominations and those interested should be contact the current president, **Ken Salhany Jr.** (ksalhany_4664@email.ric.edu) for more information on the election process. Also, if you're a Biology major, look for more information coming to your email inbox.

Second Panel Discussion Introduces Students to Careers in Infectious Disease



February 5, 2015. The **Biology Book Club** organized the second Career Panel Discussion for students. Following up on last semester's panel on brain science, this semester's panel on infectious disease drew a big crowd of students. Panelists included a doctor, several nurses, epidemiologists, public health consultants and a computer programmer who works locally in bioinformatics.

The panelists told the students about their jobs and fielded questions on a range of subjects. Vaccines were a hot topic, as were infectious disease education issues, both in the US and in developing countries. Students were advised: to figure out what you love, to seek opportunities to broaden your perspective, to banish a fear of failure, and to find internships and ways to serve the community.

The conversations didn't end after the 1.5 hour time slot. Several panelists stayed around FLS speaking with students for another half hour or more. Photos and additional insights, below.

"If you have a passion to learn, you will find someone with a passion to teach."
 Matt Ardito, BA
 Senior Applications Developer, Epivax, Inc.



"Be interested, reliable and dependable."
 John Lonks, MD
 Director, Inpatient Infectious Diseases Consult Service and Hospital Epidemiologist (Miram); Associate Professor of Medicine (Brown)



"You will have a lot of different jobs."
 Deborah Kutenplon, MS, CNM
 Assistant Professor of Nursing, RIC

NSTA NEWS

The members of **RIC Student Chapter of the National Science Teachers Association** just returned from the national conference in Chicago. Students had a great time seeing the sights and learning about new teaching strategies for their future classrooms. If you are in a teacher preparation program, or are interested in teaching science, and would like to join NSTA, please contact the officers at nsta@so.ric.edu (President **Maggie Lopes**, Treasurer **Emily King**) or the advisor at sconklin@ric.edu (**Dr. Conklin**). The next meeting is Wednesday, April 1, 2015 in FLS 209.



REGISTRATION OPENS MARCH 30!

Meet with your advisor to make sure you are thoughtfully planning your degree progress!

Remember:

- ◆ Biology Senior Seminar (BIOL 460) now requires pre-registration. See secretary Sharon Rogers for details.
- ◆ Independent study proposals due April 15.