A Note From The Chair:

Gawande, Sacks and McPhee…Oh My!

For some reason, I had a hard time settling on a topic for this semester’s BioLogue essay. I started out writing about the nature of facts and theories in science. This seemed particularly appropriate in light of all the conversation these days about climate change (think about it: why should the question of whether climate is changing, not to mention the reasons for that change, be an issue that divides along political lines?). But I wasn’t thrilled with my essay. And then I read an article about Dr. Matthew Meselson’s experiments with rotifers (are you familiar with these little aquatic invertebrates?). In part, I was amazed to learn that Dr. Meselson still has an active lab. Perhaps you know his most famous experiment: in 1958, in what has been described as “the most beautiful experiment in biology,” Meselson and Stahl demonstrated the semi-conservative mechanism of DNA replication (https://en.wikipedia.org/wiki/Meselson-Stahl_experiment). That was nearly 60 years ago, and he’s still going strong! And in part I was intrigued by Meselson’s recent findings that rotifers do, in fact, have sex (see http://sickpapes.tumblr.com/). Nobody had previously been able to demonstrate this, yet rotifers have a surprisingly long evolutionary history for an apparently asexual organism.  

Continued on page 4............
Faculty and Staff News

Comings & Goings

Dr. Cheryl Conley and Dr. James Runkle both retired in June 2015 after working in the Biological Sciences Department for many years. We thank them for all their contributions the department, their research and their dedication to their students.

We sadly also said goodbye in July 2015 to our Administrative Support Coordinator Jan Franklin, who moved across the way to the Math Department. We thank her for all of her hard work and wish her well in her new position.

Welcome: Mr. Brian Borchers

Brian joined the Department of Biological Sciences staff in February as an Academic Advisor. He is a two-time alumnus of Wright State and has approximately ten years of professional experience in education as both a high school teacher and a collegiate academic advisor. His primary advising responsibilities are the B.S. and B.A. Biological Sciences degrees, the B.S. and B.A. Biological Sciences-Life Science Education Concentration and the Biology Minor. In addition to his academic advising responsibilities, Brian responds to inquiries about studying Biology at Wright State from prospective high school students and is advisor to the Biology Club.

Welcome to the Department Brian!

Welcome: Dr. Katie Hossler

Dr. Katie Hossler joined the Department in August. She was an undergraduate student at Notre Dame, then completed graduate school and further research as a post-doctoral fellow at Ohio State. Her research interests are in environmental sciences, especially the biological and physical factors that influence the functioning of wetlands.

Welcome to the Department Dr. Hossler!

Welcome: Ms. Tammy Bash

Tammy Bash joined the Department in October as Director of the Clinical Laboratory Science program. Ms. Bash has a long history at Wright State, where she completed two graduate degrees and previously worked as an academic advisor, a lecturer and the Assistant Registrar. She has much expertise in university data management systems, but her true love is microbiology.

Welcome to the Department Tammy!

Bio Office Student Assistants

Good luck to Freyja Turner and Jordan Bane who left us in July 2015.

And welcome to the new Bio office student assistants: Chad Padgett, Kimmy Truong and Karly Boerger.
## Fall 2015 Departmental Seminar Series

**Monday’s 1:25 - 2:20 PM, Rike 158**

<table>
<thead>
<tr>
<th>Date</th>
<th>Speaker</th>
<th>Title</th>
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<tr>
<td>Aug. 31</td>
<td>Len Kenyon</td>
<td>“Effective Instruction and Learning in Biological Sciences”</td>
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<tr>
<td>Sept. 14</td>
<td>Bill Boone</td>
<td>“An Overview of the Application of Rasch Psychometric Techniques Utilizing Cancer Care Data”</td>
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<td>Sept. 21</td>
<td>Dan Krane</td>
<td>“Examiner bias in forensic DNA profiling”</td>
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<td>Sept. 28</td>
<td>Luis Vidali</td>
<td>“Participation of the cytoskeleton in plant cell organization and growth”</td>
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<td>Oct. 5</td>
<td>Chris Ivey</td>
<td>“Plant-insect interactions and the evolution of mating systems”</td>
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<tr>
<td>Oct. 12</td>
<td>Daniel Klionsky</td>
<td>“The failure of autophagy may play a role in such diseases as cancer, neurodegenerative conditions like Parkinson’s and Alzheimer’s and cardiomyopathy”</td>
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<td>Oct. 19</td>
<td>Nelson G. Hairston, Jr.</td>
<td>“Interactions between microevolutionary, population, community, and ecosystem processes”</td>
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<td>Oct. 26</td>
<td>Liza Pon</td>
<td>“Cytoskeletal dynamics and function in control of mitochondrial motility during inheritance, and the role of this process on cell cycle progression and lifespan control”</td>
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<td>Nov. 2</td>
<td>Sandra Kostyk</td>
<td>“Neurorecovery in the Central Nervous System”</td>
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<td>Nov. 9</td>
<td>Quyen Hoang</td>
<td>“Structural biology of neurodegenerative disease and structure-based drug design”</td>
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<td>Nov. 16</td>
<td>Ernest Wright</td>
<td>“Genetic diseases of sodium glucose cotransporters where mutations cause transport defects”</td>
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<td>Nov. 23</td>
<td>Kevin McCracken</td>
<td>“Molecular mechanisms that underlie parallel changes in replicate lineages that independently colonized the Andes”</td>
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<td>Nov. 30</td>
<td>Laura Sirot</td>
<td>“Of Flies and Men: Causes and Consequences of Ejaculate Composition Variation”</td>
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<td>Dec. 7</td>
<td>Dali Liu</td>
<td>“Key protein structures that are mechanistically informative on biochemical processes”</td>
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### Congratulations Graduates!

#### SPRING 2015
- Erin Alexander
- Michael Adams
- Kaitlyn Anderson
- Kile Aukerman
- Oluwaseun Banjoko
- Laura Benton
- Blaine Bittorf
- Alyssa Black
- Nicholas Boyer
- Eric Burkitt
- Brandon Butler
- Cortney Dingledeine
- Christopher D’Mello
- Erin Dorsten
- Lisa Earnest
- Daniel Edwards
- Brett Edwards
- Sarah Evans
- Katherine Fahy
- Amanda Farrow
- Shawn Focht
- Kayla Fryman
- Keith Fuller
- Samantha Gagle
- Mumtaz Gardezi
- Jennifer Gibson
- Josh Hanna
- Elizabeth Harris
- Rebecca Heighton
- Marie Heis
- Erica Hile
- Katelyn Huddleston
- Angela Hulgan
- Madalyn Jazek
- Alexandra Keller
- Daniel Keltner
- Katelyn Kinsel
- Melissa Kodger
- Nhi Lam
- Ashley Langjahr
- Sarah Lilley
- Robert Magley
- Elizabeth Mallets
- Valerie Mangold
- Sarah Marr
- Elizabet Martin
- Travis McGrath
- Prital Mehta
- Taylor Miller
- Benjamin Moore
- Maria Mostaed
- Sudarshan Mullapudi
- Joshua Perrin
- Ricardo Pineda
- Brent Powell
- Brandon Purdy
- Skylar Reckers
- Jennifer Rees
- Omar Reyes
- Alexander Rinn
- Laura Santiago
- Kritika Sharma
- Jennifer Sheehan
- John Simindinger
- Brittney Snyder
- Francis Speranza
- Jordan St. Jacques
- Baurami Sun
- Erin Tavalero
- Jack Van Horn
- Hannah Vollmer
- Mary Westwood
- Hailey White
- Elizabeth Williams
- Sarah Witt
- Carissa Wolfe
- Jordan Young
- Desiree Yunker

#### SUMMER 2015
- Kathryn Barber
- Benjamin Bucher
- Jessica Hey
- Kelly Hitt
- Chelsea Hurley
- Christine Ingram
- Annabelle McGee
- Jamie McGuffin
- Justin Moritz
- Amanda Payne
- Eric Reed
- Carrie Reynolds
- Erin Roberts
- Lauren Shafer
- Samantha Stein
- Kayla Watters
Great themes for an essay: a preeminent scientist studying weird little critters to address fundamental questions about evolution, genetics and sex.

(A rotifer. Image from Nikon Microscopy)

But then, in the middle of it all, the latest issue of the New Yorker (September 14, 2015, with Kanye West on the cover) appeared in my mailbox. I flipped through the magazine and right in a row I saw 3 of my favorite authors on science themes: Atul Gawande; Oliver Sacks; John McPhee. I quickly set aside what I was doing and read those three essays. And then I couldn’t help but toss version two of my Biologue essay alongside version one (sorry, Dr. Meselson; perhaps I’ll get back to you later) and start over. As it turns out, none of the three New Yorker essays are directly about science. But they still resonated with me as a scientist, and they hold valuable messages for students as well.

The piece by Oliver Sacks is bittersweet. Sacks was a neurologist; you may know him from his books (The Man who Mistook his Wife for a Hat and others) or from the movie Awakenings, in which Robin Williams played Sacks as he observed and treated patients with severe Parkinsonism. The case studies in his books illustrate both the amazing power and the limits of the human brain, both unimpaired and diseased. Sacks died just a couple of weeks ago and his New Yorker essay is one of several that he published in full anticipation of that end. In this particular essay, Sacks reflects on a food item (gefilte fish—balls of ground, boiled whitefish) that connected from his early life (with his mother’s weekly kitchen ritual) to his middle years (when a household assistant from a completely different cultural background revived his mother’s recipe) to his last days (when the proteinaceous jelly that forms on gefilte fish sustained his weakening body). The essay is typical of Sacks: evocative of senses and impressions, self-reflective, fundamentally humane. Sacks was a doctor, but his writing always revealed that his interest was to understand people and to address illness within a holistic view of the individual. For those interested in studying medicine or in teaching pre-medical students, it’s a great lesson.

A physician who, I learned, was strongly affected by that lesson was Atul Gawande. Gawande is a surgeon at Brigham and Women’s Hospital in Boston, but his writing takes on broad issues in medicine, from how to implement best practices in healthcare (The Checklist Manifesto) to how to deal with death and dying (Being Mortal). In this New Yorker essay, Gawande reflects on his interactions with Sacks, mostly via an exchange of letters. Gawande clearly resonated with Sacks’ holistic view of his patients. He also directly acknowledges the role that Sacks played as a mentor, transforming Gawande’s view of himself as a writer. Indeed, Gawande’s web site (atulgawande.com) now lists “writing” as the top of his three focus areas, along with surgery and research. Gawande’s broad view of medicine, his ability to clarify complex issues and his commitment to improving medicine for all are remarkable.

Both Sacks and Gawande are doctors who happen to be great writers. John McPhee is a great writer who happens to be interested in science (among other things). I first encountered McPhee through his book Encounters with the Archdruid, which discusses the environmental movement through conversations with David Brower, founder of Friends of the Earth. McPhee has written on many topics, including geology, birch-bark canoes, oranges, the Alaskan wilderness, the Mississippi River and more. McPhee is a professor of writing at Princeton and he is a stickler for composition. His New Yorker essay muses on the topic of deleting extraneous text. He describes exercises that he gives his students in which he asks them to shorten particular pieces of prose with minimal compromise to content and tone; I particularly like the assignment to delete 3 lines from the Gettysburg Address! Economical, evocative writing is a skill that serves any scientist well. Whether you are writing a grant proposal, a personal statement for post-graduate school or an assigned research paper, your reader will appreciate good writing. McPhee reminds us that any topic can be made interesting and any writing can be improved; it just takes engagement with the subject and practice, practice, practice.

So, three great writers, whose books I highly recommend. And lots of lessons for any practicing or intending scientist: Follow what interests you. Learn to communicate clearly. Practice healthy skepticism. Embrace diversity. Take on the world.

Dr. David Goldstein, Chair
Recommended Readings from the Chair

- An Anthropologist on Mars by Oliver Sacks
- The Man Who Mistook His Wife for a Hat and Other Clinical Tales by Oliver Sacks
- The Control of Nature by John McPhee
- Being Mortal by Atul Gawande
- Complications: A Surgeon’s Notes on an Imperfect Science by Atul Gawande
- Assembling California by John McPhee
Advising Resources

Students apply for graduation online via Wings Express. To complete this process you must first email an academic advisor for approval:

brian.borchers@wright.edu  matt.skira@wright.edu
courtney.smith@wright.edu

Important Dates:
October 19, 2015: Spring Class Schedule Released
November 1, 2015: Last day to drop with a ‘W’ (Full Term)
November 5, 2015: Spring Registration Begins
November 11, 2015: Veteran’s Day, WSU Closed
November 26-27, 2015: Thanksgiving, WSU Closed
December 12, 2015: Last Day of Fall Semester Classes
December 14-18, 2015: Finals Week
December 19, 2015: Fall Commencement
January 11, 2016: First Day of Spring Semester Classes
January 18, 2016: Martin Luther King Day, WSU Closed
Feb. 29 – March 4, 2016: Spring Break
http://www.wright.edu/registrar/academic-calendar

Academic Advising

Please call the Advising Line at (937) 775-4226 to schedule an appointment with an advisor.

Undergraduate Degrees:
Matt Skira ~ Courtney Smith ~ Brian Borchers

Graduate Degrees: Laura Buerschen

Clinical Lab Sciences-Clinical Program: Bev Schieltz (937-775-2712)

The Bioologue Newsletter contains important information for students within the Department of Biological Sciences at Wright State University. Please email Brian.Borchers@wright.edu with questions or comments.

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http://science.math.wright.edu/biology