A Note From the Chair

Change You Can Believe In?

In August, 1963, the March on Washington awakened the country to a range of social inequalities, and Martin Luther King’s “I Have a Dream” speech laid out a vision for change. Now, 50 years later, we hear a lot of discussion about whether that dream has materialized. It’s not an easy question; slow change can be hard to detect. As in the social sciences, so, too, in the “hard” sciences: without the right tools, we might not see change that happens slowly. And sometimes, seeing is believing. In July, an example from outside of biology graphically illustrated this point. The headline read: “The Pitch Dropped!” That exciting observation was the end result of an experiment started in Dublin, Ireland in 1944. The object was to demonstrate that tar pitch—a black, solid-looking petroleum product—is actually liquid. To do so, a “chunk” of tar pitch was put into a funnel and left alone. With a viscosity about 230 billion times as high as water, a drop of tar dripped out of the funnel about once every 10 years. But only this July was that event finally captured on video. At last, we can see: tar pitch is liquid! Continued on Page 3...

Stay Connected!

Facebook & Bio Dept. Website

You already spend your day on FB, why not include some BIO to make you feel better about it? ‘Like’ us on FB and receive the most up-to-date news, job opportunities, & current events related to Biology. Search: Wright State University Dept. of Biological Sciences

You can also visit: wright.edu/biology for Dept. info!
Good Luck Spring & Summer 2013 Graduates!

Spring 2013

Luis Aguilar
Jonathan Ali
Bryen Ballard
Elizabeth Caddies
Ashley Cantrell
Urmimala Chaudhuri
Elizabeth Coe
Susan Culbertson
Stephanie Farfarod-Rousseau
Paul Garverick
Logan Glendenning
Matthew Greene
Scott Holdgreve
Jeffrey Howell
Osarenkhoe Inneh
Nathaniel Johnson
Kevin Johnston
Samuel Kantonen
Colleen Kelley
Amy Kerry
Alissa King
Justin Lake
Orly Leiva
Joanie Ma
Jeremy Martin
James Morgan
Deepthi Nalluri
Vaishnavi Ragavapuram
Lacey Ruppert
Amanda Sherwood
Megan Shuret
Samantha Spitak

William Walker
Nicole Bailey
Jessica Brewer
Holly Campbell
Kelly Clausing
Andrew Cobucci
Chelsea Crager
Savannah Dolibo
Tara Fulton
Elizabeth Gimmison
Elise Gnagey
Casey Hess
Siham Hourani
Preston Howes
Jaclyn Johnson
Amma Boakye
Jessica Jones
Joel Kaser
Justin Kelley
Brittany Kliner
Jessica Korn
Elizabeth Landis
Melissa Lewis
Juliana Machicao
J. Chika Morah
David Munroe
Maikhanh Nguyen
James Readler
Cody Saylor
Jolene Short
Shayla Slaugh
Timothy Spoon

Spring 2012 Clinical Lab Sciences

Nickellatt Edwards
Justin Haney
Brad Johnston
Rachel Moore
Brittany Reed

Kimberly Green
Leanna Harrison
Kelly Kuntz
Elizabeth Newberry
Catherine Ripplinger

Summer 2012

Monica Mitchell
Joshua Buck
James Heupel
Shawn Pan
Halle Warha

Trisha Nguyen
Adel Hanandeh
Craig Hughes
Amanda Riddell
Cheryl Webb
Note from the Chair Continued...

That experiment might not impress you as having much global impact. But the general phenomenon—resistance to accept important ideas when the evidence accumulates slowly—occurs in many areas of science. Writing in the New Yorker (29 July, 2013), Atul Gawande asks why some ideas in medicine catch on quickly, while others languish. (Gawande is a surgeon and an engaging writer on issues in medicine; you might enjoy his books, *Complications* and *The Checklist Manifesto*). He cites the examples of anesthesia (the control of pain, originally with ether) and of antisepsis (the chemical control of infection). Anesthesia was introduced in 1846, and within 6 months it was being used in hospitals around the world. Antisepsis was introduced about 15 years later, and it, too, had the power to revolutionize medicine. However, in contrast to anesthesia, antisepsis was not widely accepted and practiced for about 25 years after its introduction. Why the difference? Gawande suggests that a major reason is the ability to observe the effect. Anesthesia’s consequences are immediate; surgery changed from traumatic and violent to quiet and controlled. Antisepsis, in contrast, combats an invisible foe (microbes) and manifests its benefits over a longer interval, well after the intervention is applied. The less visible process was resisted despite its utility.

**Today, difficulty in perceiving slow change likely is responsible, at least in large part, for the high level of public skepticism about two big ideas in science.** The first of these processes—biological evolution—is ongoing all around us. But typically it occurs in tiny increments. One of Darwin’s great insights was that the great age of the earth provides enough time for those small changes to accumulate into large-scale transitions. Ohio is a great place to see evidence of those transitions: Ohio geology exposes rocks that range in age from Ordovician (475 million years old) around Dayton to Permian (275 million years old) in the eastern counties, and the rocks are full of fossils. But this summer, I visited a part of the country where earth history is even more obvious. Dinosaur National Monument, in eastern Utah, reveals a rock layer chock full of dinosaur fossils. And driving 40 miles north from there along Route 191, one crosses nearly a billion years of history, with layers of rock exposed by uplifting and erosion. **The evidence for deep geological and biological change is simply overwhelming!** While that evolutionary change occurred over millions of years, climate is changing in our lifetimes. That pace is still slow enough that, in combination with political forces, public resistance to the idea remains widespread. It is increasingly easy to find visual evidence of climate change—from rising sea level around the low-lying Maldives Islands to melting glaciers around the world. And now, this August, a Chinese transport ship sailed from China to Europe across the previously frozen Arctic Ocean. What could be more convincing evidence of warming oceans? My PhD advisor, George Bartholomew, used to joke about his “rule of thumb”: **Never study anything smaller than your thumb!** His joke highlights our intuitive comfort in accepting the evidence of our eyes. But as scientists, we are trained to be observant, and we have tools that help us detect, measure, and explain structures and processes that are a challenge to our naked senses. **Evidence-based medicine, evolution of life, and changing climate: that’s change you can believe in!**

Dr. David Goldstein, Chair, Dept. of Biological Sciences
Student, Staff and Faculty News

Bio Faculty: Comings & Goings

Dr. Roberta Pohlman retired in June of 2013. She was with the Dept. of Biological Sciences for many years and we want to thank her for her service to the department, her research and her dedication to students. Enjoy retirement Bobbie!

The Dept. would like to welcome new faculty members Dr. Labib Rouhana and Dr. Shulin Ju. We look forward to working and learning with you!

Welcome: Matt Skira

Matt joined the Department of Biological Sciences as an academic advisor in the spring of 2013, but he is no stranger to WSU. He graduated in 2003 with a Bachelor’s degree in Communications. In 2005, he joined the Office of Residence Services as a Community Director where he served as an advisor to multiple student organizations. Matt received his master’s degree in Student Affairs in Higher Education in 2010 and is pleased to have joined a department where he works with a dedicated group of staff members and exceptional students on a daily basis.

Biology Club Officers 2013-14

Get connected and get more involved on campus - join the BIO Club!

President       Jenn Barbadora       barbadora.2@wright.edu
Vice President  Travis Goettemoeller  goettemoeller.20@wright.edu
Treasurer       Prital Mehta         mehta.34@wright.edu
Secretary       Matthew Collins       collins.250@wright.edu
Events Coordinator  Audrey Johnson   johnson.967@wright.edu
House of Reps.   Erica Smith         smith.1488@wright.edu
## 2013 Fall Departmental Seminars

<table>
<thead>
<tr>
<th>Date</th>
<th>Speaker &amp; Affiliation</th>
<th>Topic</th>
<th>Host</th>
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<tbody>
<tr>
<td>Sept. 9</td>
<td>Dr. Sarah Covshoff, University of Cambridge, UK</td>
<td>“Supercharging rice photosynthesis to meet global food demands”</td>
<td>Host: Dr. Goldstein</td>
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<tr>
<td>Sept. 16</td>
<td>Dr. Greg Hampikian, Boise State</td>
<td>“DNA Dangers: Amanda Knox and other innocence cases”</td>
<td>Host: Dr. Krane</td>
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<tr>
<td>Sept. 23</td>
<td>Dr. Nick Barber, Northern Illinois University</td>
<td>“Ecological interactions aboveground and belowground organisms in agricultural and restored communities”</td>
<td>Host: Dr. Cipollini</td>
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<tr>
<td>Sept. 30</td>
<td>Dr. Lisa Kenyon, Wright State University</td>
<td>Title: TBA</td>
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<td>Oct. 7</td>
<td>Dr. Richard Kinkead, U. Laval</td>
<td>“Development of respiratory control and the emergence of air-breathing in frogs”</td>
<td>Host: Dr. Hartzler</td>
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<tr>
<td>Oct. 14</td>
<td>Dr. Kathy Spindler, University of MI</td>
<td>“Contributions of viral and host factors to mouse adenoviral encephalitis”</td>
<td>Host: Dr. Excoffon</td>
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<tr>
<td>Oct. 21</td>
<td>Dr. Mike Sorenson, Boston U.</td>
<td>Title: TBA</td>
<td>Host: Dr. Peters</td>
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<td>Oct. 28</td>
<td>Dr. John Stireman, Wright State University</td>
<td>Title: TBA</td>
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<td>Nov. 4</td>
<td>Dr. Morgan Ernst, UT State</td>
<td>“Constraint based approaches in ecology”</td>
<td>Host: Dr. Bahn</td>
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<td>Nov. 6</td>
<td>Dr. Ethan White, UT State</td>
<td>“Addressing macroecological questions with big data”</td>
<td>Host: Dr. Bahn</td>
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<td>Nov. 18</td>
<td>Dr. Eric Tepe, University of Cincinnati</td>
<td>Title: TBA</td>
<td>Host: Dr. Stireman</td>
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<tr>
<td>Nov. 25</td>
<td>Dr. Paula Bubulya, Wright State University</td>
<td>Title TBA</td>
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<td>Dec. 2</td>
<td>Dr. Vladislav Snitsarev, Montclair St.</td>
<td>“Under pressure: Mechanosensitivity and signaling in baroreceptor nodose neurons”</td>
<td>Host: Dr. Excoffon</td>
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Seminars are at 1:25 p.m. and will meet in in 401 Millett Hall.

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### Bio Student Published

Frank Speranza’s work with Dr. Julian Cambronero and Madhu Mahankali was published in the Journal of Leukocyte Biology. The title of the journal article is “Macrophage migration arrest due to a winning balance of Rac2/Sp-1 repression over beta-catenin induced PLD expression”. Congratulations on this accomplishment Frank!

### Bio Student Scholarship Recipients

<table>
<thead>
<tr>
<th>Name</th>
<th>Host</th>
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</thead>
<tbody>
<tr>
<td>Naava Honer</td>
<td>Caitlyn McComb</td>
</tr>
<tr>
<td>Alban Holyoke</td>
<td>Alexandra Henley</td>
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<tr>
<td>Alicia Mowell</td>
<td>Melissa McCune</td>
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<tr>
<td>Sativa Johnson</td>
<td>Zainab Sumra</td>
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<tr>
<td>Kayla Fryman</td>
<td>Christine Edwards</td>
</tr>
<tr>
<td>Lola Dennis</td>
<td>Oluwaseun Banjoko</td>
</tr>
<tr>
<td>Christina Culler</td>
<td></td>
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</table>
APPLYING FOR GRADUATION?
Students now apply for graduation online via Wings Express. To complete this process you must first email Dr. Patti Roberts for approval at patricia.roberts@wright.edu.

One of your best resources is your academic advisor. Do not hesitate to meet with your academic advisor if you have questions about your degree.

Wright State University

Academic Advising
Please call the Advising Line at (937) 775-2556 to schedule an appointment with an advisor. When scheduling, be sure to include your major and/or concentration and describe your questions.

Undergraduate Degrees:
Matt Skira ~ Dr. Patti Roberts ~ Courtney Smith
Clinical Laboratory Sciences: Bev Schieltz ~ Dr. Cheryl Conley
Graduate Degrees: Laura Buerschen