NOTES FROM THE CHAIR…

Do you trust this column?

Probably most of you reading this column are students majoring in science. As you proceed on this trajectory, have you thought about what makes a good scientist? A number of traits come to mind. Certainly curiosity is near the top of the list; science is all about asking questions and exploring. An ability to communicate clearly and an attraction to problem solving are helpful. And a hallmark of scientific thinking is skepticism. Indeed, each monthly issue of Scientific American includes a column by Michael Shermer called “The Skeptic.” (He is also the author of the book “Why People Believe Weird Things,” which discusses these ideas at greater length.)

What is skepticism? The American Heritage Dictionary defines skepticism as “A doubting or questioning attitude or state of mind.” In other words, view information with a critical eye. Or, as the folks on CSI like to say, “Follow the evidence.” Scientists have this orientation; they like to see evidence. And scientific theories fit within this framework as well. They are most useful if they make predictions that can be tested in the light of evidence. In fact, that is often cited as a defining feature of what makes any idea scientific: can it be disproved (falsified) by contrary evidence.

Every day you are presented with information and ideas that you need to evaluate. These may range from propositions that you find frankly preposterous, to those that seem reasonable but about which you have little first-hand data, to those that you trust with confidence from your own experience. Sitting on my desk at the moment are a leaflet touting the powers of quartz (“Placing quartz on your computer…protects the machine against negative energy you give out when you’re in a bad mood”), an article on the link between CO2 emissions and global warming, and a report claiming health risks of moderate obesity. I would bet that, like me, you are not an expert in all these areas. So how do you decide whether to trust the ideas, perhaps even to change your lifestyle over them?

Continued on page 2…
Notes from the Chair continued…

Ideally, one would evaluate each proposition by running a series of tests. Buy some quartz and test the operation of your computer under a series of controlled conditions, with and without the stone’s “protection.” Unfortunately, it is simply impractical to test every claim that you hear. So, how to proceed? First, as best you can, think about whether the idea makes sense based on what you know of possible mechanisms. (Do negative emotions generate energy fields that disrupt computers, and can quartz divert them?) Second, consider the source of the idea. What are the credentials of the proponents? Do they have ulterior motives, like political or financial gain? (Are those promoting or dissenting about the dangers of global warming reputable scientists? Do they have connections with particular energy or industry groups?) Third, explore the evidence; look up a paper or two, dig into the data, take a class. (Did the study on moderate obesity control for confounding effects like smoking and socio-economic status? Did it use sound statistics? Is it supported by other studies?)

You may only be able to make an evaluation to some reasonable degree of certainty. Over time, you may learn of additional evidence, and this may cause you to change your mind. But changing your mind in the face of new evidence is ok—in fact, that’s another hallmark, maybe the defining feature, of a good scientist.

Being overly skeptical, so that you reflexively dismiss what you don’t understand, can be problematic; William Thomson, first Lord Kelvin, was an eminent 19th century physicist, but he also remains famous for his misplaced skepticism (“Radio has no future.” “Heavier than air flying machines are impossible.”). On the other hand, a healthy skepticism may allow you to differentiate between legitimate and unwarranted claims, and to more carefully consider what you believe about the world, and why. As Socrates said more than 2000 years ago: the unexamined life is not worth living.

So: should you believe me about all this? Probably not—at least not without some skepticism!

Wright State University Students Honored

Nicole Kahle: WSU Student 2008-2009 Employee of the Year

Nicole Kahle was recently selected as the WSU Student Employee of the Year. This is an honor that is only given to one WSU student and is extremely competitive. Nicole has been working for the Department of Biological Sciences since February of 2006, most recently in the advising office, where she has had a major role in the smooth operations of the office. She is set to graduate in spring 09’ with a nursing degree and hopes to find a job in an acute care setting. Nicole is from Glandorf, Ohio and attributes her work ethic to her upbringing on a dairy/grain farm. In her spare time, she enjoys reading, working out, and spending time with friends. Congratulations Nicole, on a well-deserved recognition!

Lindsey Hogle: Miami Valley PreMed of the Year

Lindsey Hogle was named the 2009 Miami Valley Academy of Family Physicians Premedical Student of the Year. One individual from WSU and the University of Dayton were chosen for this honor. Lindsey is a biological sciences major and is involved in mentoring prehealth students, volunteering with mentally disabled adults, and working as a certified nurse assistant at a local nursing home. She has been accepted to the WSU Boonshoft School of Medicine and will start classes in August 09’. Lindsey received the award and a $500 scholarship at an awards luncheon on March 4th. Congratulations Lindsey!

(Picture: Dr. Annette Chavez, President of the Miami Valley Physicians, & Lindsey Hogle)
Chris Schooley: 2009 Presidential Inauguration Volunteer

On January 20, 2009 Chris Schooley, Biological Sciences master’s student, had the opportunity of a lifetime. He was given the chance to actually participate in the historic 2009 Presidential Inauguration of Barack Obama in Washington, D.C. Throughout various points of the 2008 presidential election, Chris helped the Obama team making phone calls, registering voters, and a number of other tasks. Due to his efforts with the Obama campaign, he was invited to help on the Jim Martin for Senate campaign in Georgia. It was during the Martin campaign that he met the person who would go on to be the event coordinator for the entire 2009 presidential inauguration. Chris was asked to volunteer in the Presidential Parade Viewing Stand. It was here that he was able to shake President Obama’s hand and say goodbye to him after the parade was over. Later, Chris was able to be on the lawn of the white house, along with other volunteers, the moment Obama took office.

Chris said, “when people attended the Inauguration, they knew they were witnessing history as it was happening. I’m sure one day my children will ask me where I was during such a historic moment and now I can say that I was right there!”

Ramya Maddela: Spring 09’ SGA CoSM Senator

Ramya Maddela was recently announced as the spring 09’ Student Government Association College of Science and Mathematics (CoSM) Senator. She hopes she will have a bigger voice through this position and as a result, will be able to engage in more initiatives that will better the CoSM. Ramya believes “that in order to fully experience WSU, you have to engage in more than just academics,” which is why she sought this position in the first place. She wants all students to feel free to contact her if they have any questions, concerns, or comments regarding the CoSM (maddela.2@wright.edu).

Ramya is currently a junior in the biological sciences program and intends to pursue medical school after obtaining her bachelor’s degree. Good luck with your new position!

Polar Plunge 2009 continued...

The team’s leader, Beau Links, put forth a tremendous amount of effort to form the team. He contacted 165 people to ask them to participate and even wore a “vintage” Larry Bird outfit for the costume competition portion of the day. One of Beau’s recruits, Dr. Krane, had the following to say about the event: “The more I think about participating in the Polar Plunge, the happier I am that I did. It was great to see so many Biology students actively taking part in helping the community and the camaraderie was wonderful.” It is clear that Beau’s efforts not only helped the Special Olympics but also helped bolster the sense of community among the Wright State University team members.

Thank you to all the participants for representing WSU at this great event and to Beau for taking the lead. Hopefully there will be many more WSU Polar Plunge teams in the future!

Biology Student Takes the Lead on WSU’s 1st Club Football Team

Not only is Mohammad “Moody” Kassem the president of the Biology Club, he can now add president of the WSU Club Football team as well! Through his position as Student Government Association’s Director of Student Affairs, Moody has paved the way for collegiate club football at WSU.

The team is student-run by a group of 10 and coached by 8 individuals, many with experience coaching and/or playing NCAA collegiate football. The WSU Club Football team is a member of the Midwestern Club Football Conference and is sponsored by many local businesses, including Qdoba.

Stop by their first pep rally and burrito eating contest on April 23rd on the quad (11am-3pm). The team will play its first game on April 25th at Wayne High School against the Miami Valley Warriors. For more information visit www.WrightStateFootball.com
### 2009 Biology Honor Graduates:

**DEPARTMENTAL HONORS**

- Hilary Allen (Stireman)
- Lauren Ford (Bubulya)
- Sarah Frey (Schen)
- Amanda Hawkins (Baird)
- Leah Kerschner (Krane)
- Jaclyn McCabe (Bubulya)
- Ashley Sawyer (Bubulya & Leffak)
- Eric Snell (Miller)
  - Eric finished his project in 08’, graduating in 09’

### Biology Students: Research in Brazil

Three WSU undergraduate biology students (Delawrence Evans, Cherissa Rainey, and Lia Jones) spent several months recently in Brazil as part of the Biomedical Sciences Exchange program organized out of Wright State’s Department of Pharmacology. The students had a variety of experiences in both research laboratories and clinical settings, and also enjoyed life in Brazil. They were able to gain credit toward their WSU degrees. In March, the students talked about their experiences at the University Center for International Education. According to WSU President Hopkins, “These students are role models for others considering study abroad.” Contact Dr. David Goldstein (david.goldstein@wright.edu) or Cathy Winslow (catherine.winslow@wright.edu) for more information about the program.

### WSU Biological Sciences Department Hosts Darwin

On February 27th, the Department of Biological Sciences celebrated Charles Darwin’s 200th birthday with a visit from Charles Darwin himself! Robert Dennison is an Advanced Placement Science Lead Teacher for the Houston Independent School District who began performing as Charles Darwin for gatherings of science teachers, scientists, and science historians in 1990. His ability to so closely portray Darwin both from an informational and a physical perspective led to him being given the honor of posing as Darwin for photographers in Darwin’s restored home, Down House, in 1999. Mr. Dennison has spoken throughout the United States, as well as Canada and England, as Charles Darwin and has received much praise for his performances over the past 18 years. He is currently on the Board of Directors of the National Association of Biology Teachers and has been awarded numerous honors such as the Distinguished Teacher Award from the White House.

It may be no surprise then, that approximately 200 people from the WSU community attended the February 27th presentation. Mr. Dennison spoke in character for about 45 minutes, recounting his life and thinking in words taken directly from Darwin’s writings. He then answered questions from the audience, first in character as Darwin, then as Mr. Dennison.

### Anita Boadi: Biology Student Pursues Ghana Internship

Biological Sciences, PreMed student Anita Boadi recently interned at the Center for Cocoa Research in Tafo, Ghana where she did quite a number of experiments. Among others, she had the opportunity to assist the Center with one of their newest projects, which involved trying to improve the shelf life of cocoa products using extracts from local produce, such as ginger. Anita was also given the opportunity to observe the distillation of cocoa wine, and she assisted in research that aimed to improve the quality of cocoa beans under various shading conditions.

Anita is originally from Ghana (West Africa). She hopes to attend and complete medical school in the United States and return to Africa to practice medicine in underprivileged communities. She currently is working on WSU’s campus in Dr. Leffak’s lab in the Diggs building (Department of Biochemistry). She received research credit for her internship in Ghana that was applied to her biological sciences degree. Great job on your internship, and good luck with all your future endeavors!
Dr. Larry Arlian: Dr. Larry Arlian has been a member of the Wright State University Biological Sciences Department for more than 35 years. Throughout that time, he has had a prominent research program in the study of mites—small arachnids that may be ectoparasites of vertebrates, as you would probably know if you took Dr. Arlian’s popular Parasitology course. Dr. Arlian is now making a transition in his status at Wright State, from Professor to Research Professor. That shift will allow him to focus more fully on his research, especially on allergic reactions to house dust mites and on infestation of people and animals by scabies mites. Those of you interested in this research will be able to find Dr. Arlian in his new laboratory in 054 Bio Sci.

Dr. Tom Bubulya: Dr. Tom Bubulya, along with collaborators among the Science Education faculty, wrote a proposal to the Ohio Board of Regents that led to the residential summer STEM (Science, Technology, Engineering, & Mathematics) academy being funded. This academy brings high school students to Wright State University for experiences in several STEM disciplines. Dr. Bubulya will be the point person for the Biology portion of the program. He will in fact be teaching the Biology courses and coordinating with the other partners. The residential summer STEM program has existed for two years, but this is the first time that it has attracted external funding.

Dr. Katherine Excoffon: Dr. Katherine Excoffon recently co-authored an article that was the focus of a press release on the Berkeley website. The press release, entitled ‘Evolved’ Virus May Improve Gene Therapy for Cystic Fibrosis, mentions that while a research scientist at the University of Iowa (her appointment prior to joining WSU in January 09’), Dr. Excoffon and fellow researchers from the University of California, Berkeley, and the University of Iowa turned a relatively benign virus into a highly infectious form that is ideal as a carrier for gene therapy. According to the press release, “In its first gene therapy test, it completely cured human cystic fibrosis lung tissue in culture.” To learn more about the research findings and to read the entire press release visit: http://www.berkeley.edu/news/media/releases/2009/02/17_schaffer.shtml

SPRING QUARTER SEMINARS

April 6  Dr. La'Tonia Stiner  “Stress and immunity: The influence of stress on immune function”
April 13 Dr. Jocelyn Côté  "A role for arginine methylation in spinal muscular atrophy"
April 20 Dr. Chris Webster  “Norway maple and conservation of northern forests”
April 27, Dr. Tiffany Knight  “Effects of rodent predation and hybridation on the extinction risk of the endangered plant, Lupinus tidestromii”
May 4  Dr. John Pearce  “Combining banding, telemetry and genetic data to infer ecological, evolutionary, and disease-related patterns of migratory birds”
May 11 Dr. Michelle Boone  “How amphibian communities respond to pesticides: From mesocosms to nature ”
May 18 Dr. Elena Petroff  “Complex interactions between acid-sensing ion channels and BK K+ channels”
June 3  Dr. Tomek Swigut  “Role of histone methyltransferases in early cell fate determination”

Seminars meet from 1:30-2:30 PM in room 103 BH Biological Sciences building.
Mark Your Calendars!

Spring Quarter Schedule:
- March 30: Spring Quarter 2009 Classes begin
- April 6: 70% refund period begins
- April 14: Last day to withdraw and receive 70% refund
- April 17: Last day to drop a class without a grade
- May 15: Last day to drop a class with a grade of “W”
- May 25: Memorial Day, University closed
- May 26: Last day to apply for August 2009 graduation
- June 6: Last day of Spring quarter classes
- June 8-13: Final Exams for Spring Quarter
- June 13: Spring Commencement Ceremony

More BIO Students in Research

The Department of Biological Sciences continues to make great strides in its efforts to engage students in research experiences (BIO 495-honors, BIO 499-independent, EXB 466-internship, BIO 490-co-op). This is evident just by looking at the total number of students in departmental honors during the 2008-2009 year (7) compared to the total number of students already signed up for departmental honors for the 2009-2010 year (13 to date).

Perhaps even more impressive is the fact that out of the 21 winter 09’ biology graduates, 10 were involved in research (48%) and over 50% of the spring 09’ biology graduates have been or are currently involved in research.

To both the students involved in research and the individuals in the department who are helping to provide and/or facilitate the research opportunities, “Great job!”

Leadership Opportunity Available:

The College of Science and Mathematics (CoSM) Dean’s Circle is looking for motivated students to serve a two-year term on a board that works closely with the Dean of the CoSM. Applications will be made available soon. Please keep an eye on your email for more information.

Graduation Approval

If you are planning on graduating after summer or fall quarter, please see an advisor for graduation approval.

Application filing periods are:
- Summer Graduation: March 2-May 25
- Fall Graduation: May 26-August 21

Wright State University

Need Advising? If you need to schedule an appointment with an advisor, please call 775-4226 or e-mail bioadvising@wright.edu. Make sure to include the name of the advisor of wish to meet with, along with your availability.

Department of Biological Sciences
Wright State University
3640 Colonel Glenn Highway
Phone: (937)775-2655
FAX: (937)775-3320
www.wright.edu/biology

Undergraduate Degrees:
- Jacqui Neal
- Lindy Lauterbach

Graduate Degree:
- Laura Buerschen

Clinical Lab Sciences:
- Bev Schieltz

ATTENTION STUDENTS:

The Department of Biological Sciences administrative and advising offices have moved to room 235 BH.

The BioLogue is a quarterly student newsletter that contains important information for students in the Department of Biological Sciences.