

# Words to the WISE

## WISE Night Recap

This semester, the WISE RP has hosted several exciting WISE Nights. On September 11th, the annual Sundaes on Tuesday event offered students the opportunity to hear tips from returning students about how they can succeed in their transition to U of M. They also learned more about the many science- and engineering-related resources they can take advantage of throughout the year, such as the Science Learning Center (SLC).

On October 9<sup>th</sup>, **Dr. Janet Smith**, a Professor in U of M's Department of Biological Chemistry, shared some of her research findings related to structural biology.

On October 24<sup>th</sup>, **Professor Tim McKay** hosted a WISE Night entitled "Testing Your Physical Intuition" that featured the UM Physics Department. He completed a number of physics demonstrations, and WISE RP students worked in teams to find solutions for many physics questions. He also shared great tips for how to go about pursuing a Physics degree or graduate studies here at UM.

On November 6<sup>th</sup>, **Dr. Bobbi Low**, a Professor in the School of Natural Resources and Environment, spoke about the field of sociobiology. She also spoke about the hypotheses from her book, "Why Sex Mat-

ters: a Darwinian Look at Human Behavior" and shared some interesting case studies from her research. For example, she highlighted some of the differences between the sexes on what they are looking for in a mate.

On November 27<sup>th</sup>, **Professor Jerry Lynch** from the College of Engineering offered a lecture on civil engineering and his work on smart structures. He emphasized that civil engineering, one of the oldest fields of engineering, looks at issues related to the security of bridges, buildings, roads and other structures. Professor Lynch also elaborated on the important roles that civil engineers are playing in addressing many global issues such as the energy crisis.

## 2007 Summer Reads Program

Students in the WISERP had the exciting opportunity to participate in the first annual 2007 Summer Reads Program. The Summer Reads Program, supported by the *College of Literature, Science and the Arts (LSA)*, invited all students participating in a Michigan learning community to read a selected book prior to arriving in campus in late August. This year's book selection was *China Shakes the World* by **James Kyngge**, which ties in with the LSA Theme Year, **ChinaNow: a contemporary exploration.**

On September 18<sup>th</sup>, the WISE RP students attended a public lecture by Kyngge, who shared his insights into the current state of China within a global context, as well as the future of China's economy and political landscape.

In addition to attending the public lecture, WISE RP students Kristina Roe and Stephanie Wightman served as representatives of the WISE RP at a special lunch featuring the author. Following the public lecture, WISE RP second-year student, Cathy Cline, had the opportunity to

dine with James Kyngge, Kenneth Lieberthal, an Arthur F. Thurnau Professor of Political Science, and other distinguished faculty members.

After her participation at the event, Cline said that she feels "that it is important that students have the opportunity to learn more about China, and the Summer Reads Program has accomplished this and much more." Several WISE RP students also participated in a Dragon Boat Race on the Huron River on September 30<sup>th</sup>.

### Mark your Calendars:

◆ **WINTER STEPs:** January 5, 2008 from 2:30-6:00pm

◆ **WISE Formal:** January 26, 2008 from 8-11pm

◆ **WISE Nights for 2008 from 6:30 pm-7:45 pm**

\* January 15

\* January 29

\* February 12

\* March 11

\* March 18

\* April 1

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Students "Testing Your Physical Intuitions" with Professor Tim McKay.

## RESEARCH: Anticoagulation of the Artificial Lung

Sarah Lewis

This year I decided to participate in the Undergraduate Research Opportunity Program (UROP). I thought this would be a great chance to determine if I want to do research as a career or not. I thought that UROP would be good to put on my resume for future internships.

The first week of school, I was given a book with over 500 projects listed with their descriptions. From those 500, I was supposed to narrow it down to my top ten. I applied to all biomedical projects and received my number one choice.

I work for Professor Keith Cook in the artificial lung lab. There are many different UROP projects within his lab. I work on one called, "Anticoagulation of the Artificial Lung." Our aim is to

research a specific molecule and its effects on clotting of the blood. We want to find the correct concentration to use in coordination with the artificial lung to prevent clotting of the blood on the device. I have had to do a lot of reading and initial calculations because this molecule costs \$550/mg.

So far my UROP project has been very interesting, despite the large amount of reading I do in conjunction with the research. Since my project is in the very early stages, it is exciting to be able to find out all of the information and make important decisions. If I do not get enough hours by reading, I help out in sheep studies and usually watch them from 8pm to 2am. I check up on the

sheep every hour and get to do my homework for the rest of the time.

UROP has many benefits other than just the opportunity to research for a year. You can be connected with summer internship opportunities through UROP or your faculty sponsor. Also, once you are a junior you can be a peer advisor. The peer advisors work directly with all of the UROP participants to help them throughout their research experience. I plan on continuing research either with UROP or as a job next year.

*Sarah is a first-year student who plans to study biomedical or chemical engineering.*

To learn more about the Undergraduate Research Opportunity Program

(UROP), visit

[www.lsa.umich.edu/urop/](http://www.lsa.umich.edu/urop/) or

stop by their office

located at 1190

Undergraduate Science

Building.



## RESEARCH: ARMY Research Lab

Shira Bennett

As I am sure that every student has heard at one point or another, research is a valuable part of the educational experience. So, when I received the mailing about the Undergraduate Research Opportunity Program (UROP) before coming to Michigan, I decided to apply. After going through the paperwork and interview process, I accepted a position working with a professor in the mechanical engineering department who is working on the design of micro-robots in conjunction with the Army Research Lab in Maryland.

The project is focused on developing the best method for fabricating micro-robots, which, at full size, are no bigger than a thumb nail! A great thing about my UROP experience is that I actually get to actively participate in this project, instead of doing busywork for the professor. Each week, I meet with my professor and he explains both what I will be doing and why it is necessary for the production process. I then spend about five hours working to modify the design and develop a type of "blueprint" for fabrication using the computer drafting program, AutoCAD.

Through this project, I have definitely learned a great deal about the design process and improved my computer drafting skills. Participating in UROP is definitely something that I would encourage everyone to try. Not only has it provided me with insight into the design and research process, but it has also

helped me to build a relationship with a professor, which is highly encouraged for all students. Even if the UROP program does not work for you, I would recommend getting in touch with a professor working on something of interest to you and participating in research on your own. It will not only give you a nice "resume builder," but will teach you valuable things about the world of research.

*Shira is a first-year student who plans to study mechanical engineering.*



A panel of WISE Women discuss their majors and opportunities for research during the first WISE Night in September.

# RESEARCH: Periodontics and Tissue Growth

Megan Bland

Many college students often think of research as an opportunity reserved for upperclass or graduate students. However, the Undergraduate Research Opportunity Program (UROP) at the University of Michigan supplies underclassmen with the chance to participate in relevant and interesting research that takes learning outside of the classroom.

I am a freshman planning on majoring in biomedical engineering, and this is my first year participating in UROP. I am working in a periodontics lab that is focused on the use of growth factors to stimulate tissue growth. I am working specifically with a PhD student who is examining the use of scaffolds to help regenerate tissue that is destroyed as a result of disease or injury. This is a challenging aim because not only are different types of tissue such as bone

tissue and gum tissue destroyed, but the area of the defect has an irregular geometry.

To combat these challenges, the defect is mapped using microcomputed tomographic imaging technology and the scaffolds designed using computer aided design software. Eventually, the scaffolds will not only help regenerate tissue, but will also be able to be used to improve gene therapy.

Participating in UROP has allowed me to gain hands-on experience and to apply the concepts I learn in my science and engineering classes to the tasks I perform as part of the research.

UROP also has also exposed me to what it is like to be a graduate student in biomedical engineering, as well as to the array of current research in the field of biomedical engineering. These are both in-

valuable experiences that have solidified my choice of biomedical engineering as my major. Lastly, but perhaps most importantly, UROP has provided me with both graduate students and faculty who serve as mentors within the lab and within my field of study, which is something that can be difficult to obtain in the large lectures that are typical of first-year classes.

I would highly recommend participation in UROP for all students. Opportunities are abundant for all underclassmen; there is even a special program for upperclassmen who have not yet participated in UROP. The experience is unique and is one that will serve you far into the future.

*Megan is a first-year student planning to study biomedical engineering.*



Dr. Janet Smith presenting her work on structural biology during the October 9th WISE Night.

## WISE RP Program Board News

The WISE RP will be hosting a ton of great events this semester! The WISE RP/MRC Winter Formal will be held January 26th from 8pm to 11pm in Palmer Commons. Not only is this a fun time to put your old prom dresses to good use again, but it's a time to get to know other WISE RP students and meet new people who are in the MRC! In addition to the Winter Formal, the program board is currently planning a variety of great events for the rest of the year. For example, we're planning on having a movie night once a month where we can all just hang out and eat popcorn. We're also planning

different community service activities where we can clean up some parts of North Campus and some area parks. This is yet another opportunity to get involved in the community and to get to know more WISE RP women. Also, the WISE RP will have its own booth at the K-Grams Kid's Fair this spring. Many WISE women are involved in K-Grams already, so this will be a great chance others to meet local kids and teach them something educational at the same time! There are many more programs and events in the works for this semester, including a pre-health seminar and internship words of wisdom panel. If

WISE women are interested in helping to plan any of these events, or if you have your OWN idea for an activity or program, please attend one of our meetings, which will be held every Monday at 5pm in Room 164 next to the dining hall. Hopefully everyone can make it to at least one meeting to let us know what you want to see happen in the community. Keep checking your email so you know what other fun things we are planning for you!

*Megan is a second-year program Board member studying kinesiology.*

Megan Gill



**The WISE RP Program Board will meet every Monday at 5pm in Room 164 in East Quad. Please come share your ideas for events and activities!**

## UNIVERSITY OF MICHIGAN

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The Women in Science and Engineering Residence Program (WISE RP) is an academically supportive living-learning community for women who are interested in academic majors and careers in the sciences, mathematics and/or engineering.



**We're on the Web!**  
[www.wiserp.umich.edu](http://www.wiserp.umich.edu)



## Getting Involved: Society of Women Engineers

Sarah Ilkhani-Pour

When I first came to Michigan, I set a goal: get involved and meet people. I had done gymnastics the past fourteen years, which left little time to develop hobbies. I was afraid to try something new for fear that I would fail. Then, I learned about the Society of Women Engineers (SWE). SWE seemed generic enough: the only requirement was to support women engineers. I attended meetings and many freshman outreach activities (who can resist free colliders!). At the end of first semester, being the slightly obsessive email-checker that I am, I replied immediately to an email I received explaining an officer position opening. I was contacted because I attended several freshman outreach events. A few emails later, I was given the position of SEE Camp Co-Chair. I had little idea what this entailed (something about running a summer camp), but I jumped on the opportunity anyway. Perhaps the decision was a bit rash, but I have benefited greatly from it.

The beginning of this school year, I passed a group of SWE women in the hall. They called me over: "Sarah, we were just talking about you." Apparently, they heard that SEE camp had gone well, and they had a new officer position opening. They asked if I was interested, and within a few days, I was named Regional Bid Co-Chair.

In November, I took a leap and ran for SWE Vice President. I had low hopes since I had a year less experience than other candidates. I gave my speech, threw in a "Go Blue!" and waited for the results. To my amazement, I was elected as the 2008 Vice President of SWE.

I highly encourage everyone to pursue a leadership position in an organization that matches your interests. My past year-and-a-half advancing through SWE has taught me several lessons:

- Whatever you do, do it the best you can. You never know who may be watching and what great things may come of it.

- Stay on top of email. Much information is passed through email, and quick responses are vital.
- Be enthusiastic! Enthusiasm reveals a person's dedication and drive. People have a greater desire to take up someone enthusiastic than someone blasé.
- Start small: just go to meetings and various activities. You'll meet people and eventually gain confidence to advance. If given an opportunity, jump on it! Although you should consider various options and gain complete information, do not wait for information to come to you. Initiate: respond and ask for more information immediately.

*Sarah is a second-year peer mentor who is studying biomedical engineering. She also currently serves as the vice president of the Society of Women Engineers.*