

University of Michigan

**WISE**<sup>M</sup>**rp**  
 WOMEN in SCIENCE  
 and ENGINEERING residence  
 program

# Words to the WISE

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### A Glimpse at WISE RP 2008-2009

- 16% of first-year WISE RP students are from a state other than Michigan and 3% are from outside the USA.
- 47% of new WISE RP students intend to pursue an LSA major and 53% intend to major in Engineering.

Welcome to the Women in Science and Engineering Residence Program! We are especially excited to welcome our ninety-eight first-year students who represent several countries and nine states. In addition, we have forty-nine returning students who are leading the WISE RP as resident advisors, program board members, and peer mentors.

We are especially excited to be back in our newly-renovated home, Mosher-Jordan Residence Hall. I know you will all share our excitement of living and learning in our new environment which offers cutting-edge classroom spaces for our weekly class, UC 107, as well as a new dining center that will serve the entire Hill area.

There are also two important events taking place in September that I want to bring to your attention. Each

year, we ask all first-year students to participate in our three-wave survey/assessment tool. These surveys are vital to our community success because they help us learn more about the effectiveness of our programs. In mid-September we will be launching the first wave of this survey. As students at one of the top research universities, I know that you'll recognize the importance of participating in this research for our community.

Also, as you heard this past summer, the MRC is participating in the second annual Summer Reads Program sponsored by the LSA Dean's office. The book chosen by the Summer Reads committee is, ***Power to the People: How the Coming Energy Revolution Will Transform an Industry, Change Our Lives, and Maybe Even Save the Planet*** by Vijay Vaitheeswaran. The book and many

exciting upcoming events are linked to the LSA 2008-2009 theme year, ENERGY FUTURES: Society, Innovation, and Technology.

Vijay Vaitheeswaran will be on campus to deliver a keynote address on **Sunday, September 28, at 7:00pm** in Rackham Auditorium. All WISE RP students are required to attend this important introduction into the intellectual community at the U of M. Your RAs will be organizing your hall's attendance at the lecture. You'll be seeing more information about this lecture and related events throughout your hall.

In closing, this year marks the 16<sup>th</sup> year of the Women in Science and Engineering Residence Program. With our outstanding incoming class and our strong group of returning community leaders, let's work together to make this our best year yet!

## Welcoming Words: Beth Gibney

I'd also like to wish you all a warm welcome to the WISE RP community! The staff of the WISE RP are looking forward to a great year, and we are excited to be back in Mosher-Jordan. We have a wonderful group of students returning to the program to serve in leadership roles, and I'm confident that our new WISE RP students will contribute their own talents, enthusiasm, and intellectual engagement to the community.

In my role as the Associate Director, I manage most of the day-to-day operations of the program. I directly supervise the four WISE RP Resident

Advisors, the Peer Mentors, and the Program Board Members. My primary role, however, is to serve as a resource and support for all of the WISE RP students.

I hope that you will all feel comfortable approaching me with whatever questions or concerns you may have. I can serve as a resource for a variety of issues you may experience throughout the year, such as academic difficulties in classes, homesickness, struggling to balance your time, and roommate conflicts.

The University of Michigan has a

plethora of resources available to it students, and I am here to help you to connect with them. So while I may not personally have the answer to all of your questions, I will do my best to help you find it! My door is always open—please feel free to stop by my office at any time.

As a member of the WISE RP community, you have access to a number of wonderful and unique benefits, including great leadership opportunities, facilitated study groups, and the support of your peers and our staff. Please take advantage!

## Meet the Grad Program Assistant: Karen Hochheiser

Along with the rest of our staff, I'd like to welcome our new and returning WISE RP students! I feel incredibly privileged to have the opportunity to work in a community filled with such bright, talented, and motivated students. Although I have only been with WISE RP for a few short weeks, I have been impressed by the dedication the students have to their studies and to each other, and I am looking forward to a great year.

I am a first year M.A. student in the Center for the Study of Higher and Postsecondary Education here at U

of M, and I will be working with the WISE RP throughout the entire school year. My role as Graduate Program Assistant of WISE RP will change and expand throughout the semester.

I am currently supervising the Peer Mentors, and I will have the distinct pleasure of meeting with each of these incredible student leaders throughout the month of September. As the semester continues, my role will include supervision of the recruitment team, the formal planning committee, and the Program Board. I am

excited to be involved in many aspects of the WISE RP and to work closely with the students in the community.

I know I will be learning a lot from all the WISE RP women this year, and I hope I can also be a great resource to all of you. Feel free to come by my office anytime to ask question or just to chat!



WISE RP women bonding during STEPS.



## My Summer at TARDEC

Liz Boettner

This summer I became exposed to the inner workings of TARDEC, Tank-Automotive Research, Development and Engineering Center in Warren, Michigan. I spent my ten weeks at TARDEC working on a project to be displayed at the annual Summer Hire Expo.

My project involved injury risk assessment of soldiers exposed to improvised explosive devices (IEDs). I handled this assessment by analyzing data of four previously conducted physical tests, and by helping the senior engineer I worked with develop a computer

simulation. This simulation replicates a person's movements due to vertical accelerations. With this simulation, the effects on a person's body due to these accelerations can be replicated without actually performing a physical test. This process will help reduce costs of testing.

In addition to my own project, I was also able to observe other projects handled by engineers at TARDEC. I attended weekly meetings where I heard about a variety of projects pertaining to safety and reliability concerns

involving soldiers and military vehicles.

At the end of the ten weeks, during the Summer Hire Expo, I got a chance to see the other projects worked on by Summer Hires. Overall this summer allowed me to get a preview of engineers in the work environment and see a variety of engineering used by the Department of Defense.

*Liz is a second-year Program Board member studying engineering.*

## Industry Internship vs. Summer Research

Lauren Fladger

This time of the year is particularly stressful for science and engineering students because career fair fever has swept across North and Central Campuses (even though it seems like we just arrived on campus!) To be honest, I am quite intimidated when I first walk into a career fair, but after speaking at a few tables, I am able to fall into the rhythm of the fair. I know that there is so much pressure on students to gain industry internships (particularly after sophomore year), and I admit that I definitely succumbed to that unspoken rule that *you must find a summer industry internship*. Unfortunately, I never

thought that a summer research position was a viable resume-building summer activity. So I spent my first two summers in the biotechnology and pharmaceutical industries, even though I have always enjoyed lab work (like organic chemistry lab and my UROP project during freshman year).

After speaking with several members of the Chemical Engineering (ChE) faculty and with Dr. Montgomery, the ChE undergraduate advisor, I have learned that it is extremely valuable to diversify your resume. I asked around to some of my peers in different departments (mechanical engineering, bio-

chemistry, and computer science) and they told me that they heard the same messages from various professors and advisors. So this summer I am determined to do what I want to do: perform academic research in a university lab. I encourage any WISE RP residents who have questions about internships to come chat with me, but don't forget: as long as you are doing something that you enjoy during your summer break, you will be gaining valuable interpersonal and professional development skills.

*Lauren is a third-year resident advisor studying chemical engineering.*

## Are You First?

Did you know that approximately 10% of students at the University of Michigan are the first to go college in their family? The idea of a student organization for first-generation students came about around a year ago, and the group finally became a reality when First-Generation College Students @ Michigan was formed last year.

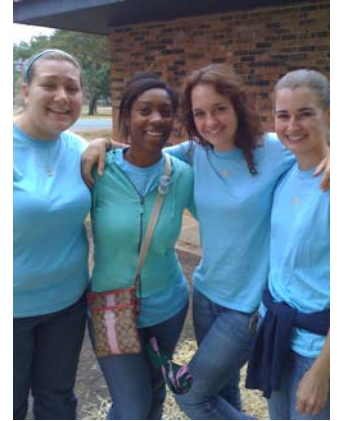
As a first-generation student, I know what it can feel like not understanding the college application process, FAFSA, and what to expect once on campus. I also was not sure how people

were going to treat me for being “different” in a sense. Therefore, I was really excited when I heard about the group, and I think this is our year to expand. First-Gens had a table at Festifall and an interest meeting shortly thereafter.

The mission of First-Generation College Students @ Michigan includes the three “R’s”: recognizing, raising awareness of, and resolving the needs of undergraduate first-generation college students on the University of Michigan’s campus. First, we need to recognize that first-gen

students do have a disadvantage compared to students whose parents attended college. Next, we want to raise awareness on campus so that others can recognize the disadvantage as well, and learn about our experiences and what we can bring to the table. Finally, we would like to eventually help resolve the disadvantage by possibly reaching out to high school students. If anyone is interested in learning more, you can email me at [aimrie@umich.edu](mailto:aimrie@umich.edu). Anyone, first-generation or not, can join!

*Aimrie is a second-year peer mentor studying evolutionary anthropology*



**2008-2009 WISE Resident Advisors: (left-right) Cassie Pogoda, Lauren Fladger, Alicja Sobilo, and Christine Morrison.**



**The first session of UC 107 on September 2, 2008.**

## STEPS Success

I am not a morning person. As I trekked to the park early that Friday morning for STEPS, I was dreading the hours to come. I know now that I was wrong in my assumption. We started off the morning with an activity called “Have You Ever,” which was great because it got everyone to move around and it was a great way to learn new things about people.

Afterwards, in smaller teams, we were presented with a problem and quickly realized we would need to work collectively as a group to solve it. One of our challenges was to transport all fourteen people in our group across an icy “river” using only seven small woodblocks (icebergs). We didn’t know where the rescue boat was, and we had to get everyone onto the icebergs before we

were able to “see it.” In addition, we always had to be touching the icebergs or they would float away.

As a team, we were somehow able to get two people on each block (and three at one point) and successfully transport every single one of us to the rescue boat. After at least three failed attempts, that is! When we talked about it afterwards, we realized that listening to other people’s ideas and trial and error helped us achieve our goal. I was proud of my group and myself for completing all of the challenges. Despite the early morning wake-up, I had a great time meeting new people at the event, and I’m looking forward to the follow up session later this year.

*Jaimie is a first-year student studying chemical engineering*

## Jaimie Brougham



**Alumni and current participants enjoying the alumni event.**

## WISE RP Alumni Event

On Friday September 12, Mosher-Jordan opened its doors to WISE RP alumni. Past program participants, who still reside on campus, got a chance to see and explore the newly-renovated building. Alumni mingled with old friends in the Jordan lounge and reminisced about their experiences in the program. Current participants help set up the event and gave tours to the alumni. The program was a complete success, and alumni loved getting the opportunity to see the renovations and reconnect with old friends.

## Mission Statement

The Women in Science and Engineering Residence Program (WISE RP) is a supportive living learning community for women who are interested in academic majors and careers in science, mathematics, engineering, and technology. The mission of the WISE RP is to recruit, support, and retain a diverse population of women in the science, technology, engineering, and mathematics fields; to link students with resources and opportunities that will support their academic and personal pursuits; to develop relationships among students with similar interests while building a community based on mutual respect and affirmation of diversity; and to enhance students' undergraduate experiences by providing engaging cultural and educational opportunities.



Fall 2008 is off to a great start for the WISE RP women!

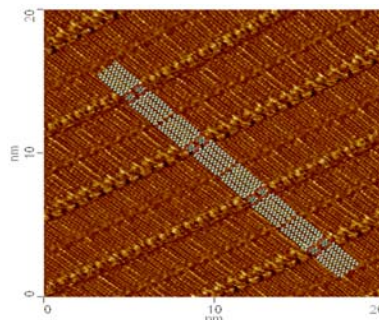


## Fun In A Chemistry Lab

Before I started my research a year and a half ago, "scanning tunneling microscopy" (STM) meant little more to me than "kdjfkx wokcm wokvjgdlkj." Now, I couldn't imagine life without STM!

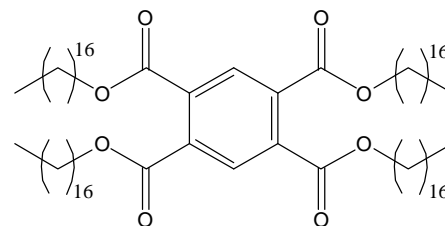
STM is a microscopic technique that allows one to see individual atoms. An STM experiment works as follows. First, a small sample of molecules is placed on some graphite. The molecules *automatically* arrange themselves in highly symmetrical and organized patterns on the graphite surface. The sample is placed just under a tip so small that the very point is only one atom wide. This is the heart of the microscope. It sounds a bit odd because when we think of microscopes, we generally think of light and mirrors. STMs do not use optics; they rely on the transmission of voltages between the sample and the tip. These voltages induce quantum tunneling, which (after the computer works

some magic) produces an image of the sample's surface. The images don't look like much more than patterns of gold lines and blobs at first, but if you look closely you can see individual molecules and atoms. Each molecule yields a different pattern, dependent on the molecule's properties. I then use a computer modeling program to make a model for the image. An example of an STM image with a computer model overlaid is shown here.



## Christine Morrison

That's my research in a nutshell, but so what? The whole point of my research is first to *understand* what intermolecular interactions cause what patterns to form and then to *control* the patterns. Learning to control materials on the nano-scale has huge applications in nano-technology.



Participating in research as a an undergraduate students is a wonderful opportunity that I highly recommend to other students.

*Christine is a third-year resident advisor. She is studying chemistry and biochemistry.*