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Undergrads pursue interdisciplinary research

By **Jeff Samoray**, OU Web Writer

Oakland University undergraduates have a unique opportunity to pursue engaging, interdisciplinary research with the departments of **Chemistry** and **Biological Sciences**. Five students of both majors have been selected to participate in the 2002 Oakland University Merck/AAAS Interdisciplinary Research Program.

Each of the students is working under the direction of two faculty members – one from each discipline – on projects involving 12 weeks of full-time research this summer.

"The purpose of this program is to promote an interdisciplinary research experience for undergraduates in biology and chemistry and encourage them to consider going on to graduate school," said Kathleen Moore, professor of chemistry and the project director. "This program is unique in that students get to work with a faculty member from each discipline. The students receive even more faculty attention than they already receive."

This year's participants and their projects are:

- Bo Bezeau, a biochemistry major, is working on "Synthesis and genotoxic evaluation of novel modified nucleosides" under the direction of Professor Rasul Chaudhry (biology) and Professor Roman Dembinski (chemistry).
- Jennifer Froelich, a chemistry major, is working on "Rapid detection of biohazards with a quartz crystal microbalance" under the direction of Professor Gabrielle Stryker (biology) and Professor Xiangqun Zeng (chemistry).
- Aaron McBride, a biochemistry major, is focusing on the "Development of a high throughput cell-free transcription activation assay" under the direction of Professor Arik Dvir (biology) and Professor Denis Callewaert (chemistry).
- Melissa Noble, a biology major, is working on "The source of kin recognition pheromones in the social wasp, *Polistes fucatus*" under the direction of Professor George Gamboa (biology) and Professor John Seeley (chemistry).
- Rebeca San Martin, a biochemistry major, will focus on "Tissue inhibitors of metalloproteases: transcriptional regulation and protein characterization" under the direction of Professor Douglas Wendell (biology) and Professor Kathleen Moore (chemistry).

"I think my research is very valuable and is a lot better than just reading from a textbook," said Froelich, a junior chemistry major. "It's very hands-on and provides great experience. I want to pursue a master's degree and am interested in working in a crime lab. My faculty advisers are there for me when I have questions, but I'm also allowed to do a lot of work on my own. It's a really good opportunity – something I definitely don't think I'd find at a larger institution."

Oakland University was one of just 15 institutions from across the country selected in 2001 for the program. Each institution receives three years of support – Oakland is in the second of its three years. The program is funded by **Merck and Company**, a pharmaceutical company, and administered by the **American Association for the Advancement of Science** (AAAS), the world's largest federation of scientific and engineering societies. The AAAS selects the institutions to receive the Merck program grant.

"It's pretty prestigious for Oakland University to be selected for this program. One of the reasons we were chosen is that Oakland has a long and established track record of promoting undergraduate research in biology and chemistry," Moore said.

The program is open to all science majors, though sophomores and juniors with a 3.0 or higher grade-point-average are preferred. Applications are distributed in various science classes in January, and the Interdepartmental Biochemistry Program Committee makes the student selections in March based on a number of criteria.

"Besides the basic criteria, we look for students who have an interest in graduate work," Moore said. "They also have to write an essay explaining why they're interested in participating, and they have to provide a faculty recommendation. Some of the

students we've selected have previous research experience, but for the most part the faculty members lay out the research proposal since they have an idea on how the disciplines can connect. Then it's up to the students to make it real."

At the end of the 12-week research period, the students need to present an abstract summarizing their data and conclusions. The student also may further develop their research into a poster or oral presentation for a forum such as Meeting of the Minds or a publishable article for a scientific journal.

The program also has an impact on other science majors in the form of various ancillary programs, Moore said.

"Most of the budget from the Merck program goes to the summer students in support of their projects. The remainder is used for sponsoring programs such as the 'Careers in Science' panel discussion we had last April. We also anticipate bringing in some guest speakers from an interdisciplinary graduate program," Moore said.

For more information on the Merck/AAAS Interdisciplinary Research Program, contact Kathleen Moore at (248) 370-2338 or kmoore@oakland.edu.

SUMMARY

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