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Professor's grant aimed at inspiring high school students

By **Rebecca Wyatt Thomas**, OU Web Writer

For the past three years, high school students from the International Academy have been participating in research in the lab of Assistant Professor of Chemistry Ferman Chavez. After witnessing how interested the students became through their work in the lab, Chavez wanted to find a way to spread that interest in chemistry to other high school students. In early 2008, Chavez was awarded a National Science Foundation CAREER awards to fund a program to do just that.

"If you can catch the students' interest early, they can follow the right path to get into the sciences," said Chavez, whose program will focus on students at the high school level. "It's often difficult to get students excited about chemistry at the high school level."

Chavez's research focuses on bioinorganic chemistry, more specifically the synthesis of molecules to mimic metal-containing enzymes. Using high-tech lab equipment, Chavez can subject molecules to various conditions to study how they work. In the lab, these molecules can be tested to see if they reproduce the chemistry of the enzymes.

Chavez is working with enzymes that degrade oxalate. High oxalate levels within the body can cause kidney stones. Using these enzyme mimics to lower oxalate levels in the environment can help to reduce exposure to humans.

Through the \$640,000 grant, Chavez will incorporate his field of research into the program he has designed for the high schools.

Chavez has selected five high school chemistry teachers who will brainstorm with him and serve as consultants to develop high school experiments and demonstrations.

"The high school teachers are the experts. I am lending the ability to teach advanced concepts and help students see the real-life application of chemistry and make them more interested in it," Chavez said.

Throughout the five-year grant, Chavez plans to identify the ideas that should be taught to the students, videotape experiments in his lab that teachers can use in the classroom, author a workbook to supplement the videos, develop workshops to educate teachers on ways to present the information to students and distribute his program to high schools in Michigan and nationwide with a Web component.

Chavez has applied for the NSF grant twice in the past and he knew this was his last chance to receive the award. Professors can only apply for the grant three times, and it is only granted to untenured faculty. This year Chavez is up for tenure.

In previous years, he was given feedback to improve his request for the grant. He used that feedback to enhance his proposal and get the grant reviewers interested in his high school outreach program.

Chavez learned he received the grant in early January. He will gather information this spring and will work with the high school beginning this summer.

SUMMARY

For the past three years, high school students from the International Academy have been participating in research in the lab of Assistant Professor of Chemistry Ferman Chavez. After witnessing how interested the students became through their work in the lab, Chavez wanted to find a way to spread that interest in chemistry to other high school students. In early 2008, Chavez was awarded a National Science Foundation CAREER awards to fund a program to do just that.

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