11 A&M profs awarded National Science Foundation grant

Eagle photo by Dave McDermandThe National Science Foundation awarded grant money to 11 Texas A&M professors, including Zhilei Chen. Chen's next project involves creating longer-lasting batteries for medical devices out of biological components.

Last year, Texas A&M professor Zhilei Chen experienced what she describes as one of the most memorable moments in her research so far.

The assistant professor in the Artie McFerrin Department of Chemical Engineering, along with her team, found a compound that inhibits HIV, the virus that causes AIDS, as well as the hepatitis C virus.

"It really has the potential to be used as a prophylaxis to prevent HIV," she said, referring to the treatment that might just help prevent the disease from attacking the body, rather than treating the symptoms following diagnosis.

Chen and 10 other scholars at the university this spring became recipients of the National Science Foundation's most prestigious award for junior faculty across the country — induction into the Faculty Early Development Career Program. The researchers, all engineers and scientists, are given varying amounts of financial support from the foundation for their efforts toward integrating research and education.

Chen said she'll continue researching engineering treatments for viruses, like the HIV breakthrough, but the National Science Foundation funds will be used over a four-year period to fund another mission: designing what she calls a "bio battery."

"For example, someone needs a pacemaker. Eventually the battery goes out. We want to make a battery made of biological components that will last a long time," Chen said. The battery will have an "abundant energy source" from the body's glucose, which will use enzymes to convert the sugar into electricity.

Chen, who moved to the United States from China in 2000, earned her doctorate at the University of Illinois in 2006. Before becoming part of the A&M faculty in 2008, she attended Rockefeller University for postdoctoral studies.

When it came to picking a research field, there was just one: Biomedical research.

"I enjoy applying what I do to something that is useful and unique," Chen said, adding that she finds teaching to be a rewarding experience as well.

"I see when [the students] come in – they don't know much, and then they graduate and become an expert in a certain field."

This is Chen's second attempt at securing the coveted recognition in the CAREER program.

"In retrospect, I was glad that it didn't get funded the first time. The initial design was far more complicated and probably wouldn't have worked. We greatly improved our strategy based on the reviewers' comments, and made our system much simpler and more effective," Chen said.

When the award recipients were announced in March, Chen said she was more than just excited. It helped validate all the priorities in her life: Balancing her family, teaching and researching.

"I tried really hard to get it, and it just validates what we are doing," she said. "It gives me more confidence in my line of research. And, of course, the money is important to continue what I'm doing."

Other faculty members who earned a CAREER award include:

• Five assistant professors from the Department of Computer Science and Engineering within the Dwight Look College of Engineering: James Caverlee, Gabriel Dos Reis, Scott Schaefer, Le Xie and Byung-Jun Yoon.

• Tatyana Igumenova, assistant professor in the Department of Biochemistry and Biophysics.

• Helmut G. Katzgraber, assistant professor in the Department of Physics & Astronomy.

• Wenshe Liu, assistant professor in the Department of Chemistry.

• Grigoris Paouris, assistant professor in the Department of Mathematics.

• Cris Schwartz, an assistant professor in the Department of Mechanical Engineering in the Dwight Look of College Engineering.

For more information on their research projects, go to http://bit/ly/JOzGnC