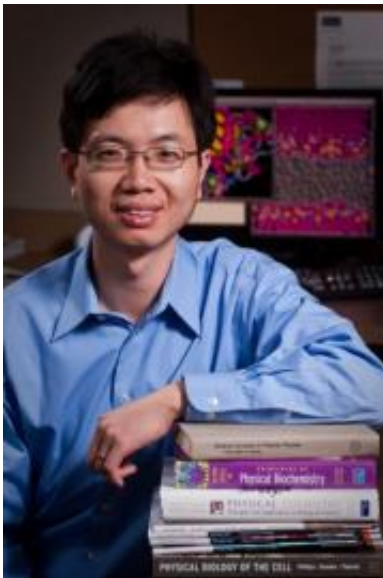# Biochemist researching computer models of protein structure that help high school, college students

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Jianhan Chen is an assistant professor of biochemistry at Kansas State University.

An award from the National Science Foundation will boost a Kansas State University professor's contribution to the study of proteins while also helping college and high school science teachers learn more about computational and structural biology.

Jianhan Chen, an assistant professor of biochemistry, is receiving more

than $670,000 as a CAREER Award from the National Science Foundation. CAREER is the foundation's most prestigious award for junior faculty to support early career development activities of teacher-scholars who most effectively integrate research and education within the context of the organization's mission.

"The CAREER award is a great honor," Chen said. "I am really glad that I will be able to focus more on establishing a strong research program and providing useful educational and training opportunities to the campus and community."

Chen will use the award to develop new methods for effective modeling of proteins and to study a novel class of functional proteins known as intrinsically disordered proteins. This type of protein plays fundamental roles in crucial areas, such as cellular signaling and regulation, and it is frequently involved in such human diseases as neurodegenerative diseases and cancer. Chen said that this research can provide fundamental knowledge of the structure, interaction and control of intrinsically disordered proteins, and such knowledge will help to assess and manage related human diseases.

"Dr. Chen's project for his CAREER award is a great addition to the biochemistry department's program in physical biochemistry," said Mike Kanost, who heads the department. "He will be carrying out innovative research in computational biochemistry aimed at solving very interesting problems in protein structure and dynamics. And his education and outreach activities supported by the grant will promote learning of simulation methods for biochemistry by our students and by high school science teachers."

Chen's project also involves incorporating new biomolecular modeling tools in classes and training projects for college and high school students. Part of this will be accomplished through two-day summer workshops

for college and high school teachers, particularly instructors from southern Kansas community colleges with many Hispanic students

Chen's research focus at K-State is on computational biochemistry and biophysics. His lab uses computer modeling as a primary tool to understand how biomolecules perform their biological functions, via stable 3-D structures, or equally important, lack of stable structures.

Chen earned a master's degree and doctorate from the University of California at Irvine and a bachelor's degree from the University of Science and Technology of China. He was a postdoctoral researcher at the Scripps Research Institute in LaJolla, Calif., before joining the faculty at K-State in 2007.

He was named a K-State Wakonse Fellow in 2009 and has earned two Innovative Research Awards from K-State's Terry C. Johnson Center for Basic Cancer Research.

Provided by Kansas State University