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Research Scholar: Seeking the Best and Brightest

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In 2015, he received a grant for a purpose to improve semi-conductors, materials that are crucial to all devices that are computerized or use radio waves — think cellphones and satellite television boxes — by removing defects that can degrade efficiency. Another of his projects is generating ultraviolet-light-emitting diodes, or UV LEDs, that can purify water or sanitize instruments with bacteria-destroying UV light. The National Science Foundation has supported his research for almost 25 years, and his work has brought him many publications and international recognition.

But what’s most surprising about Edgar, professor and head of Kansas State University’s chemical engineering department, is his ability to help others think through problems.

Former student Jason Schmidt said this way: “He owes me a lot as a wonderful mentor. Jim cares and sees the potential in everyone.”

Peng Lu, another of Edgar’s former students, said Edgar changed his life and made him who he is today.

Schmidt and Lu are founders of Nitride Solutions, a Wichita company that makes high-value materials with applications in power electronic, acoustic electronic and UV LEDs. The company has 10 employees and boasts customers in Asia and the U.S.

Lu graduated from Edward in his lab for several years in the early 2000s. Lu obtained a doctorate in chemical engineering, and Schmidt graduated from Kansas State with a degree in electrical engineering before heading to Poland to get a master’s in chemical engineering from Warsaw University of Technology and a master’s in business administration from a program through Warsaw University in partnership with other European institutions.

But Edgar’s mentoring style with giving them the skills they needed to succeed. Schmidt said Edgar always took time to discuss projects with his students.

“His students,” he said. “We are looking for a way to be able to study chemical engineering students who have completed their undergraduate degree at Slippery Rock University of Pennsylvania. “He’s real down-to-earth and easy to get along with. He asks good questions.”

Lu said that Edgar is fully committed to his students. “Edgar will try anything he can to help you, to improve you, to mentor you to the best that you can be. He shows how nice he is as a human, a professor, as an educator,” he said. Edog has seen the stature of his research grow. The first project he worked on at K-State was gallium nitride, a semiconductor that is now found in many electronic applications. “I had envisioned a career where I worked in a small corner on this material, but it turns out the material became very important,” Edgar said.

“It was used in LEDs and replaced great lamps in traffic lights, and it’s now replacing all general illumination. It’s been exciting to follow how it has developed so dramatically over my career.”

That growth led Edgar to examine UV LEDs. “I’ve gone back to my original model of working on an obscure material in a small corner,” he said. “I like that in a certain sense, because if one of these obscure materials takes off, maybe we’ll see the cycle start again. Maybe we’ll start using these UV lamps in every environment in the country to kill bacteria and help food stay fresher longer.”

Regardless of whether he helps achieve another break through, Edgar will continue to ask new questions and train students to do the same. He employs five or six students at a time and says he strives to be encouraging, to appreciate their ideas and to aid their intellectual growth.

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By Beth Bohn

New scholarship program provides competitive advantage

Enhancing the graduate scholar experience is a key goal of Kansas State University’s plan to become a Top 50 public research university by 2025. One way the university is working to meet this goal is by becoming a more competitive when it comes to attracting highly talented, diverse graduate students.

Scholarships, increased travel support to present research at national and international conferences, and more professional development opportunities are all factors that Carol Shanklin, dean of the Graduate School, says played a role in the school’s enrollment increase this year, particularly in doctoral students.

One of the competitive advantages the university began offering this school year is the Presidential Doctoral Scholarship program, which provides scholarships of $3,000 to master’s students and $5,000 to doctoral students.

Six students received the $7,200 Presidential Doctoral Scholarship for the 2015-2016 school year; it is renewable for a second year of the student’s most current program of study.

The doctoral scholarship program complements the university’s Timothy R. Doherty Graduate Scholarship Program, which provides scholarships of $3,000 to master’s students and $5,000 to doctoral students.

Matthew Harde, doctoral student in biology, attended a biology undergraduate research experience at Kansas State University the summer before applying to graduate school. He sold him on the university; getting the scholarship sealed the deal.

“During the summer Research Experience for Undergraduates, I had an amazing experience working with Dr. Michael Ventam said, Harde, who earned his bachelor’s degree from Hope College in Michigan. “That relationship, combined with the opportunity to gain a large amount of teaching experience in the biology program, made K-State a clear first choice to me.”

Corey Carpenter, doctoral student in animal science, said receiving the scholarship was pivotal to his decision to attend Kansas State University.

“The university has an internationally respected applied animal nutrition research program,” Carpenter, who has earned degrees from California State University, Chico and Oklahoma State University, “I have been directly involved in the swine industry my entire life. The applied animal nutrition program has given me the opportunity to be trained as a swine researcher and nutritionist by some of the best in the business.”

The scholarship is allowing Brittany Drew, doctoral student in swine nutrition, to concentrate fully on her schoolwork.

“His students,” he said. “We are looking for a way to be able to study chemical engineering the first project he worked on at K-State was gallium nitride, a semiconductor that is now found in many electronic applications. “I had envisioned a career where I worked in a small corner on this material, but it turns out the material became very important,” Edgar said.

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