

Faculty Focus

By J. Trout Lowen PHOTOGRAPHED BY BILL KELLEY

In and out of the classroom, St. Olaf College faculty are exploring creative new ways to help students learn everything from classical music to statistical analysis. They are plumbing the depths of the infinitely small universe of partition combinatorics and delving into the universal debate over the roles and relationship of politics and religion.

Sharon Lane-Getaz

ASSISTANT PROFESSOR OF STATISTICS AND EDUCATION

"The whole world runs on statistics, we are just in a state of denial," Lane-Getaz claims. The mere mention of Sharon Lane-Getaz's work in statistics education can elicit some unusual responses from people. A feeling of terror tops the list.

Students often show up for the first day of her class toting some of that same anxiety, so Lane-Getaz, who joined the St. Olaf faculty this past fall after serving as adjunct faculty in statistics in the spring and summer of 2007, is working to calm their fears by bringing new teaching techniques to the classroom. Lane-Getaz, who earned a Ph.D. in statistics education from the University of Minnesota, is using some of the same techniques that served her so well during her 18-year-career providing technical support for customers and clients at IBM.

Her current interest is using technology in the classroom and employing new teaching methods for students who have a little anxiety about the subject. One way is to teach statistics within the context of real-life problems, using technology to analyze this real data, and employing active-learning techniques. The emphasis is on understanding concepts rather than learning computational recipes. She says that helping students to see how much they know and how much they can discern about a problem before they begin to formally analyze it using statistical methods can reduce their fears and boost their confidence.

"It's a new approach to teaching statistics," she says. "It's a little bit slower in some ways, but it may be deeper. I hope to contribute to analyzing these teaching methods with my research."

In her current research, Lane-Getaz is using statistics to analyze how students learn statistics and to identify teaching methods that are more effective at helping them learn certain concepts. "Specifically, I developed an instrument for my dissertation that measures students' understanding and misunderstanding of statistical significance," she says.



Kristina C. Garrett

ASSISTANT PROFESSOR OF MATHEMATICS

Kristina Garrett loved mathematics as a child, often plowing through the problems in an entire textbook in just a few weeks. She also loved puzzles, which is one of the reasons she says she ended up in the field of combinatorics, a branch of pure mathematics.

"I love doing problems and finding answers and thinking about new situations," she says.

Garrett specializes in the study of partition theory, which focuses on the ways a number can be broken into smaller pieces. Mathematical physicists use partition theory, for example, when looking at the behavior of electrons in different states, but Garrett's research is less focused on practical applications than on open-ended, theoretical inquiry. "It's basic research," she says. "You never know where something is going to go."

Garrett earned a bachelor's degree in mathematics from M.I.T. in 1994 and a Ph.D. from the University of Minnesota in 2001, where she studied combinatorics and group theory. She taught mathematics at Carleton College for four years before coming to St. Olaf.

In 2005, research by Garrett and her students led them to uncover a pattern in the partitions modulo number 11 that had eluded researchers at other institutions. Garrett turned to a computer scientist and students in the St. Olaf computer science program for help in generating the volume of data needed to look for a pattern. "They wound up doing some amazing computer science, generated a ton of data, and we found this pattern that we then sent out to researchers at Pennsylvania State, the University of Florida and Michigan State."

Their efforts garnered recognition from world-famous numbers theorist George Andrews, considered the "father" of partition theory. "It was pretty exciting," Garrett says.



Jamie Schillinger '93

ASSISTANT PROFESSOR OF RELIGION

When Jamie Schillinger graduated from St. Olaf with degrees in political science and religion, his interest focused largely on the historical impact of theology and politics on each other.

Schillinger had no idea at that point that contemporary events would put his work front and center. Schillinger went on from St. Olaf to earn a master's degree in moral and political philosophy from St. Andrews University in Scotland and a Ph.D. from the University of Chicago Divinity School where he studied both Christian and Islamic thought, as well as the Arabic language.

In 2000, Schillinger followed his interests in Islam to Damascus, Syria, returning to the United States just before the September 11, 2001 terrorist attacks.

After 9/11, the need for people who understood the Middle East and who were conversant with Islam and how it relates to Christianity and Western secularism peaked, Schillinger says. He has been teaching and writing on those topics, among others, since.

In the classroom, Schillinger's primary goal is to introduce students to the theological and political discussions going on around the world in places of worship and in policy think tanks and to enable them to begin to listen to different voices and cultivate the skills needed to participate in those discussions.

"It's exciting to take something like religion and politics and enable students to thoughtfully engage, say, a radical secularist at one extreme and a radical theocrat at the other extreme, and then find their own place somewhere on the spectrum," he says.

In his current research, Schillinger says he is parsing the interdependent, triangular relationship between faith and reason and ethical behavior as seen through the paradigm of specific virtues, such as humility, and looking at how Christianity and Islam can influence conceptions and practices of such virtues, both on their own and in dialogue with each other.

Jun Qian

ASSISTANT PROFESSOR OF CLARINET AND CHAMBER MUSIC

In the conservatory, Jun Qian was taught that rigorous practice was the road to perfection. Since joining the St. Olaf music faculty in 2007, however, Qian has come to view things differently.

"St. Olaf actually changed my mind about music education," says Qian, who earned a bachelor of music from Baylor University and a master's and D.M.A. from the Eastman School of Music.

His students are enthusiastic and eager to explore music and the clarinet through a variety of musical genres, from classical to jazz to new compositions written by fellow students. They are also looking for ways to learn smarter and more efficiently.

"Rather than spend tons of time in the practice room, they use their brains to practice rather than just labor through lots of stuff," Qian explains. "My challenge is how to guide them."

Qian often guides them with a firm and demanding hand, he acknowledges. Some of his students call him a perfectionist, a label he wears without apology. Qian has appeared as concerto soloist with symphonies in China and in the United States (including at Carnegie Hall). In October 2004, he was the featured soloist at the International Performing Arts Festival in Japan, and he gave a solo recital in Paris the following year.

"Maybe I'm not an easy teacher, but I'm not expecting them to fully appreciate me now; they will appreciate me after they graduate," he says.

Qian looks for potential in a variety of places. In his first year at St. Olaf, he taught master classes at local high schools, taught throughout China, formed a youth clarinet ensemble for high school students from Northfield and the Twin Cities, and created the Virtuosi Chamber Winds at St. Olaf, which specializes in wind repertoire for eight to 13 players.

"The level of playing is one of the highest, I can say, because of the excellent music program [at St. Olaf]. It is a blessing for me to teach these talented young musicians at St. Olaf as well as work with my great colleagues."

— JUN QIAN

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