Dear reader,

The Department of Statistics newsletter is published for the alumni, friends, students, and faculty of the Department of Statistics, an academic department in the College of Liberal Arts and Sciences, and the College of Agricultural and Life Sciences at Iowa State University. It provides the latest news and achievements of the department and we are thrilled to share it.

Kind regards,

**Dear reader,**

The Department of Statistics newsletter is published for the alumni, friends, students, and faculty of the Department of Statistics, an academic department in the College of Liberal Arts and Sciences, and the College of Agricultural and Life Sciences at Iowa State University. It provides the latest news and achievements of the department and we are thrilled to share it.

**Have a story?**

Email Kati at klsmith@iastate.edu

**IOWA STATE UNIVERSITY**

Department of Statistics
Thank you for reading the 2016 newsletter of the Department of Statistics at Iowa State University. This is our first newsletter in several years, but we hope to re-establish publication on a regular basis, and also hope you enjoy this update on the recent activities and accomplishments of our students, faculty, and alumni.

This issue features the accomplishments of Statistics faculty members Alicia Carriquiry, who directs a new ISU research center focused on forensic science applications; Anna Peterson, one of the Statistics faculty involved in developing and teaching courses for ISU’s new Masters in Business Analytics program; and Karin Dorman, who has been selected to be the first holder of the endowed Dale D. Grosvenor Chair.

The STAT-ers, our statistics graduate student organization, continues to be an active and important part of the Department. Our graduate students are active in several activities beyond the University; a team from ISU won first place in the 2014 international Data Mining Cup, and our teams took 2nd and 3rd place in the 2015 competition, and 2nd and 5th placers in 2016.

We also take great pride in the accomplishments of our alumni, and hope to publicize these in future issues, so please share your news (or any other feedback) with us by calling (515-294-3440) or email (statistics@iastate.edu). And do drop by to see us in Snedecor Hall when you are in Ames.

Sincerely,

Max D. Morris
Department Chair

The ISU Statistics Department hosted a reception for alumni and friends at the Joint Statistical Meetings in Chicago in August. Current and former students and faculty members enjoyed reconnecting and catching up with each other. If you missed this event, we’ll hope to see you at a future JSM reception.
The Iowa State University College of Business has partnered up with statistics and engineering faculty for the Master of Business Analytics program.

The Master of Business Analytics is an online program created for working professionals. It was designed with the idea that students are able to continue to work while completing the program.

From the Statistics Department, Anna Peterson and Bill Meeker helped design classes for the Business Analytics program and just finished the second semester of teaching the classes. According to Peterson, a lot of research has been done about online learning and how to create classes specifically for distance education. One key factor is condensing the material into shorter units. Condensing the material is important for the online learners to focus on the important information. The students who are enrolled in this program are already working professionals and need to learn as much as they can in a short amount of time. “These lessons are ten minutes, or fifteen minutes. Compared to when we go and actually lecture in a classroom on campus, you’re lecturing for maybe 50 minutes or an hour and 20 minutes.”

According to a Pew Research survey, nearly half of recent college graduates have taken online courses. Online courses, as well as entire online programs, are becoming more prevalent because of the large number of graduate students who are already out working in their field. Online learning offers a balance of work, family, and schoolwork. Students can listen to the lectures at home or stay an hour after work to listen to them. Although there are many reasons to study in an online program, there are also many challenges for those who may not be able to stay on task. Since the students are not forced to attend physical classes, it is up to them to make sure they listen to the lectures and not delay them until the end of the semester. To help solve this problem, Peterson designed her class with homework assignments due every week, knowing that it will help her students stay on track weekly. “You have to listen to the lecture to prepare for the homework. If there are consistent due dates, it forces you to not procrastinate too much.”

Peterson says that she has gotten lots of positive feedback from her students in the Master of Business Analytics program, and it’s very encouraging and reassures that she designed the classes well.
Dorman receives Dale D. Grosvenor Chair

Professor Karin Dorman was chosen to receive the College of Liberal Arts and Sciences Dale D. Grosvenor Chair.

Dorman is a joint professor with the Department of Statistics and the Department of Genetics, Development, and Cell Biology. She was selected because of her excellent work in genetics, evolution, and infectious disease and for her contributions to research and teaching. Dorman has also been a very active advocate for encouraging young women to consider STEM careers.

Dorman received her Ph.D. in biomathematics from UCLA in 2001 and her bachelor’s degree in mathematics and biology from Indiana University in 1994.

The Dale D. Grosvenor Chair award was established by the late Dr. Dale D. Grosvenor, a former professor at the Department of Statistics. He received his Ph.D. in statistics, his master’s degree in statistics, and his bachelor’s degrees in mechanical engineering and agricultural engineering, all at Iowa State University.

The Iowa State University hosted a ceremony on April 1 to formally recognize Dorman.

Nettleton’s Involvement with PSI’s Faculty Scholar Program

As a teenager, Professor Dan Nettleton spent many summers in Iowa corn fields.

Today, his dedication to agriculture is still present and is shown with his involvement in Iowa State University’s Plant Sciences Institute (PSI). PSI is an organization that conducts fundamental research and education to provide solutions in food production, bioenergy production, sustainable ecosystems, and human health. Nettleton became a PSI Faculty Scholar in Feb., 2015. The PSI Faculty Scholars program is an initiative led by PSI director Patrick Shnable that provides funding for researchers in various disciplines to pursue their research in plant sciences.

As a PSI Faculty Scholar, Nettleton uses statistical methods to contribute to advancements in plant sciences. “Improvements in agriculture are essential for feeding the world’s growing population and addressing challenges associated with climate change,” said Nettleton.

Nettleton collaborates regularly with other researchers in various fields to discuss future research and areas of interest. Meeting with people from various fields helps with having new insights to discover solutions to plant and agriculture problems.
Alicia Carriquiry leads a new center that will ensure science and statistics play a role in a criminal trial

Story by Jess Guess

If you get into trouble with the law, Alicia Carriquiry has some advice:
“Before you call a lawyer, call a statistician.”

Carriquiry, an Iowa State University statistician and Distinguished Professor in the College of Liberal Arts and Sciences, said when a jury does not understand how statistics play a role in a trial, their improper conclusions can lead to false convictions.

Helping a jury to differentiate a data-informed conclusion from a general assumption is one of the biggest challenges in the justice system. Historically, trained examiners use their own judgment to analyze crime scene evidence. But in many cases, it is shown that forensic examiners overstate their findings, even if their findings are not statistically plausible.

In many cases, it is shown that forensic examiners overstate their findings, even if their findings are not statistically plausible.

When an examiner is linking a bullet found at a crime scene to a suspect’s gun, they “can’t possibly be right when they say there is ‘no way’ any other gun except the suspect’s could match the bullet found at the crime scene,” Carriquiry said. “But the general public does not know that.”

To address the problem, the National Institute of Standards and Technology (NIST) has awarded a five-year, up to $20 million grant to establish the Center for Statistics and Applications in Forensic Evidence (CSAFE). Carriquiry is the director of the new center, which is headquartered at Iowa State and calls on leaders in the statistical community from three additional universities: Carnegie Mellon University, the University of Virginia and the University of California Irvine.

In collaboration with scientists at NIST and law enforcement agencies, CSAFE researchers are developing statistical and measurement approaches that will result in scientifically defensible models to quantify uncertainty in certain types of evidence. The center will produce software, reference materials, and apps to use in the field and will provide training activities for forensic scientists.
STAT-ers has recently been recognized as an official student chapter of the American Statistical Association (ASA).

The ASA Student Chapters program provides opportunities for students to connect with other students interested in statistics and interact with prominent statisticians. The ASA Student Chapters Program also encourages students to continue studying statistics and provides career information in the statistical science. By being recognized by ASA as a Student Chapter, STAT-ers will receive their own chapter microsite on the ASA website, a free ASA membership for the STAT-ers president, funding to hold social events, and invitations to national and local meetings.

Students earn Teaching Excellence Award

Four graduate students in the Department of Statistics have earned the Teaching Excellence Award.

Nicholas Berry, Lindsay Rutter, Brenna Curley, Margaret Johnson, and Daniel Ries (not pictured) received the award for their accomplishments in teaching.

The Teaching Excellence Award consists of a letter of recommendation from the ISU President, a certificate of achievement signed by the ISU President and Associate Dean, and an honor cord to be worn at graduation. Any graduate student with teaching responsibilities, and who has been on a teaching appointment for at least two terms (including summer sessions), is eligible for an award. The purpose of these awards is to recognize and encourage outstanding achievement by graduate students in teaching.
Student Spotlight: Carter Kemmet

Carter Kemmet is a senior in statistics who found a problem and came up with a solution.

Soon after arriving at Iowa State to major in statistics, Kemmet became aware that most other colleges in Iowa have an actuarial program, while Iowa State does not. He has always aspired to be an actuary and wanted to have the same advantages that other students from all over the state have, so he decided to start a student organization for those interested in actuarial sciences. He founded the Actuarial Science Club (ASC) and is currently the president of the organization.

ASC is a student organization that helps build leadership skills in the actuarial sciences. Students who are involved in ASC wish to become an actuary after education. Members work with the department to incorporate actuarial topics into lessons.

Kemmet was accepted to be a part of the Vermeer International Leadership Program (VLIP). VLIP is a scholarship program sponsored by Vermeer Corporation that offers in-depth leadership experience across multiple fields including statistics, mathematics, engineering, business, and agriculture.

After graduation, Kemmet plans to become an actuary at a major insurance company.

Data Mining Cup 2016

This spring, Iowa State University got 2nd place in the 2016 Data Mining Cup.

The Data Mining Cup (DMC), is an international student competition in which students find solutions for data mining problems. On June 28, the Iowa State University team traveled to Berlin, Germany to receive their prize of a trophy and 1,000 euros ($1,114.56). In 2014, ISU placed 1st and in 2015 ISU placed 3rd.