

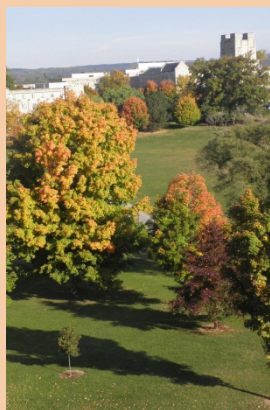


Fall 2012

Volume 10

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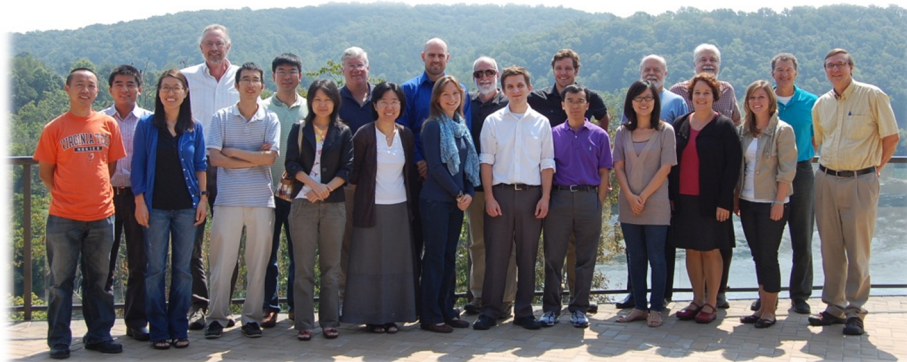
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Overlooking the Drillfield from the 4th floor of Hutcheson – taken by Betty Higginbotham

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Welcome from Department Head Eric Smith

It has been another good year for our department thanks to the hard work of faculty, staff, and students and support from alumni. I am happy to report that after 15 years of effort, we are finally underway with the renovation of the student offices. We hope to have new space by August of 2013. We continue to grow our programs and improve the department.

Thanks to your support our graduate program continues to improve and expand. Last year we graduated 15 Master's level students and 4 Ph.D. students. Our recruiting efforts continue to benefit from the devotion our graduate coordinator, Jeff Birch; the financial support from our Corporate Partners program; and staff support from Christina Dillon. This fall we add 22 new students to our program for a total of 92 students.

Our undergraduate program continues to strengthen and we now have 92 undergraduate majors in the program. We have made several enhancements to the program to improve skills in programming, calculus and probability. We also have a thriving minors program and actuarial science program. The department graduated eighteen students. The department expects to graduate over 40 students in the spring, the largest class that I can recall.

Our Laboratory for Interdisciplinary Statistical Analysis (LISA) continues to expand its services and training of our students. The program has expanded its short course selections. The article below by Eric Vance discusses some of the other enhancements to the program.

Several faculty members in the department have been recognized for their research. **Bill Woodall** was also honored as a recipient of the Box Award. He was also the conference honoree for the 29th Quality and Productivity Research Conference. **Yili Hong** received the Young Business and Industrial Statistician best paper award at the ISBIS meeting.

The department continues to grow and has added four new faculty members this year. **Xiaowei Wu** joins us from a two-year postdoctoral position at the University

of Chicago. He brings expertise on design of genomics and human genetics. Xiaowei will help solidify our new computational track. We are also pleased to have hired **Hongxiao Zhu** who just finished a postdoc at Duke University. She will help strengthen our computational statistics program and collaborations with Virginia Tech Carilion Research Institute. **Anne Ryan** also joined the faculty this year as Professor of Practice and will help support graduate programs. **Jane Robertson** is also a new Professor of Practice; she joins us from the University of North Carolina and will help in developing the undergraduate program. Sadly, Leigh Williams left to pursue research in education methodology and has taken a postdoctoral position at Georgia State University.

In other news, congratulations to **Inyoung Kim** and **Pang Du** who were promoted to Associate Professor positions with tenure. Congratulations also to **Marion Reynolds** who became Emeritus after 38 years of service to the department and university. We greatly appreciate all he has done in support of the department.

Finally, through your support we are able to help students through fellowships to entering and continuing students. The **Rose Costain** Award was given to Jonathan Stallings. The **Ray Myers** award was given this year to Yimeng Xie for skill in linear models and experimental design. The **Jean Gibbons** award is in its fifth year and provides money to enhance the education of a top incoming graduate student. This year's recipient is Diana Prigel. Other awards are described below. We are grateful for the financial support to help with the recruiting and training of our students. As you are aware, our students are facing continued financial stress and we hope that you are able to continue help support our programs. We can really use the support! Opportunities to contribute to various scholarships are described on the last page of the newsletter. Contributions to the general Statistics fund are also welcomed. And, don't forget to stop by for a visit if you are in the area. We'd love to hear about what you have done since we saw you last.



William Woodall receiving the Professor of the Year award.

Congratulations to all of our undergraduate degree and award recipients!



Undergraduate Degrees and Awards

This year eighteen undergraduates completed their degrees. They included **Remie Arnold IV, Justin Davis, Jason Dods, Adam Edwards, Kelly Geyer, Steven Goode, Alicia Hertling, Jonathan Kaelin, Elizabeth Kimball, Chang Liu, James Lucas, Christina McBride, Allison Moore, John Mulheren, Emily O'Rourke, George Rooney, Andrew Wanamaker, and Chi Yeung.**

The Whitfield Cobb Award is presented to the graduating senior with the highest

academic performance overall. This year's recipient is **Chi Yeung.**

The Clyde Y. Kramer Award is presented to a graduating senior who has shown outstanding service to the University and the broader community. This year's recipient is **Alison Moore.**

This was the first year the Undergraduate Research Award was given in recognition of outstanding undergraduate research. This year's recipient is **Kelly Geyer.**



John H Kroehling Scholarship Recipients

Michael Gillespie
Mitchell Ruloff

Marion & Charlotte Eckert Scholarship Recipients

Hunter Carraway
Agata Bogacki

Clyde Kramer Scholarship Recipients

John Ditrapani
Scott Terrell
Elizabeth Adams
Kyle Malec

Undergraduate Student Internships & Activities

During the summer of 2012, nine of our undergraduate students worked as interns for a broad variety of organizations. These students and their companies are:

Amanda Aubuchon – Travelers Insurance Company – Actuarial and Analytics Leadership and Development Program

Sam Lewandoski – Johns Hopkins Applied Physics Lab – Statistics/Mathematics

Scott Terrell – Office of Actuaries within the US Office of Personnel Management

Kaitlin Onthank – US Census Bureau

Matthew Nenno - Science Applications International Corporation (SAIC)

Mitch Ruloff – Actuarial Retirement Services LLC

Michael Gillespie – Actuarial Analyst Intern at Mercer

Joey Diaz – Geico

Stefanie Cain – Nielsen – Global Business Services – Measurement Science Tract

Undergraduate Program

By **Leanna House, Undergraduate Committee**

The Department of Statistics said farewell to a valued colleague, Dr. Leigh Williams, who decided to pursue opportunities at Georgia State University in the field of her doctoral degree, Educational Research and Evaluation. Dr. Williams was a statistics lecturer and our department's undergraduate coordinator for the past 8 years. As the undergraduate coordinator, she oversaw all administrative tasks pertaining to our undergraduates, including, evaluating course substitutions, organizing orientation for potential and incoming freshman, representing our department on various committees (including the college curriculum committee), and, of course, advising students academically. Dr. Williams did an excellent job and her expertise will be missed.

In response to Dr. Williams' departure, the statistics department decided to restructure the administration of the undergraduate program. Rather than name one undergraduate coordinator, the department chose to distribute many of the coordinator duties to the faculty on the undergraduate committee: Dr. Leanna House, Mr. Marlow Lemons, Dr. Jane Robertson, and Dr. George Terrell. In addition to their current obligations and with the help of administrative staff, Ms. Christina Dillon and Ms. Betty Higginbotham, members of the undergraduate committee worked together to have a seamless fall semester with well attended classes and a solid departmental representation in the college and university. Nice job Undergraduate Committee!

The administrative restructuring gave the department inspiration and energy to evaluate the undergraduate program

and make positive changes. Some items on the table for change include how the department mentors undergraduates regarding degree requirements. Not all of the changes will take place this year, but progress has been made. For example, the department plans to develop a Pathway to Success (P2S) first year experience course (www.fye.vt.edu) and modernize Statistical Methods I/II (STAT 3005/3006). Dr. Robertson will lead the effort to develop the P2S. The purpose for a P2S in the statistics department is to allow our first-year majors to meet one another, inform them of the opportunities that await statistics majors upon graduation, and motivate them to learn statistical methodology to enhance their problem solving skills. Many students have an intuitive ability to learn from data. However, only after they master skills from their subsequent statistics classes will they be able to quantify uncertainty, identify potential sources of bias, and make inference. Through the P2S course, we will motivate students to begin thinking about these skills conceptually.

Dr. House will lead the effort to revamp STAT 3005/3006. At Virginia Tech, this sequence is often the only set of statistics classes that non-statistics-majors take and the first set of statistics classes our majors take. Dr. Jeff Birch designed the classes in the late 1970s and they have not been formally updated since. Although the courses are thoughtful and cover important, fundamental concepts in statistics, it is time to modernize the curricula. Several faculty will discuss what to keep and what to remove from the current curricula to make room for topics, such as, computation, big data management, and data mining. We will select a new textbook and hope to pilot our new classes in the 2013-2014 academic year.

Undergraduate Committee



Leanna House



Marlow Lemons



Jane Robertson



George Terrell



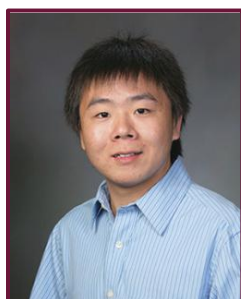
Wandi Huang



Jennifer Kensler



Ciro Velasco-Cruz



Sai Wang



Huaiye Zhang

Masters Recipients

The Fall 2011 Master of Science graduates were **Joel Anderson** (now a project associate with the VT Transportation Institute), **Katherine Griffin** (now a research assistant with the Food and Agriculture Education Information System office), **Gabriela Betz** (continuing as a PhD student in Animal Science), **Daniel Whitehead** (now with the US Census Bureau), and **Chaohang Zhang** (continuing as a PhD student in Industrial Systems Engineering). **Yajuan Chen**, **Caleb King**, **Kurt Kubli**, **Stephen Loftus**, **Ana Maria Ortega Villa**, and **Zhibing Xu** are continuing as PhD students in the department.

In Spring 2012, Master of Science degrees were awarded to **Ying Li**, **Rong Nie** (continuing as a PhD student in Industrial Systems Engineering at NC State), **Nicholas Stewart** (working in the Toxicity Assessment Division of the US EPA), and Chongrui Yu (now with the R&D group of Farmers Insurance). **Qing Li** is continuing as a PhD student in the department.

Internships

During the summer of 2012, eight of our MS and PhD student worked as interns for a broad variety of organizations. These students and their companies are:

Joshua Washburn -- Minitab
Rebecca Dickinson -- Institute for Defense Analyses
Ashley Nelson -- Eastman Chemical Company
Marcos Carzolio -- NASA Langley
Adam James -- Systems Planning and Analysis, Inc.
Zhibing Xu -- Boehringer Ingelheim
Lulu Cheng -- Lubrizol
Eddie Tsay -- Blackrock (a financial management company)

As an intern, our students not only gain valuable experience as a practicing statistician but they are paid a competitive salary. Additionally, for each month of intern experience the student can receive one academic credit that applies toward their degree. To receive academic credit the intern needs two mentors, a faculty member within our department and their work supervisor. The student must summarize their intern experience by writing a technical report on their work accomplishments and present their intern experiences in a seminar to the students and faculty of the department. These reports are evaluated and graded by their mentors. Thus, a summer internship can result in a three-credit graded course, one that can used as an elective in the student's program of study.

PhD Recipients

Wandi Huang (2011)
 Title: GLR Control Charts for Monitoring a Proportion
 Chair: Marion Reynolds, Jr.
 Now: Statistician with Citi Bank, NYC

Jennifer Kensler (2012)
 Title: Analysis of Reliability Experiments with Random Blocks and Subsampling
 Chair: Geoffrey Vining
 Now: Statistics Education Expert with the Air Force Institute of Technology

Ciro Velasco-Cruz (2012)
 Title: Spatially Correlated Model Selection (SCOMS)
 Co-Chairs: Scotland Leman & Eric Smith
 Now: Statistician at the Mexican Institute of Higher Education, Mexico City

Sai Wang (2012)
 Title: GLR Control Charts for Monitoring the Mean Vector or the Dispersion of a Multivariate Normal Process
 Chair: Marion Reynolds, Jr.
 Now: Senior Statistician at Capital One Financial Corp., McLean, VA

Huaiye Zhang (2012)
 Title: Bayesian Approach Dealing with Mixture Model Problems
 Chair: Inyoung Kim
 Now: Senior Statistician for Monsanto

Departmental Awards

The Boyd Harshbarger Award is awarded for outstanding academic achievement by a first year graduate student. This year's co-recipients are **Angang Zhang** and **Yimeng Xie**.

The Jesse C. Arnold Award is awarded for outstanding teaching by a graduate teaching assistant. This year's recipient is **Austin Rhodes**.

The Klaus Hinklemann Award is awarded for outstanding service by a graduate student to the department or university.

This year's recipient is **Andy Hoegh**.

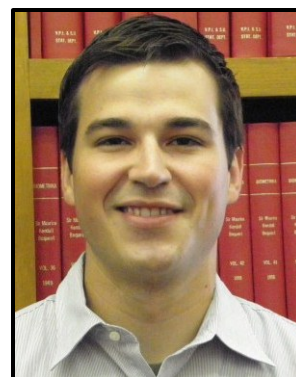
The Raymond Myers Award is given to the top student in Linear Models and Experimental Design. This year's recipient is **Yimeng Xie**.

The Gibbons Statistics Award is given to an outstanding first year PhD student in statistics. This year's recipient is **Diana Prigel**.

The Rose Costain Award is given to an outstanding graduate student citizen in the Department of Statistics. This year's recipient is **Jonathan Stallings**.



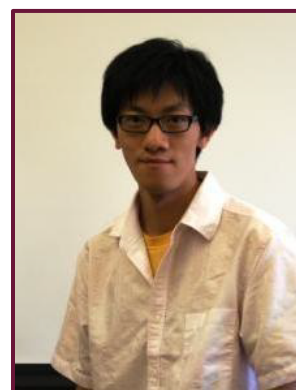
Andy Hoegh



Austin Rhodes



Yimeng Xie



Angang Zhang

Graduate Awards Details

To help express our appreciation for our graduate students' contributions to the success of our department, we offer six annual graduate student awards to recognize their special contributions in the areas of academics, teaching, service, and citizenship.

With these awards comes a certificate and the recipient's name is placed on a plaque, which is displayed outside the main office door. Two awards also include a book of the recipients' choice and the four awards include a sizable financial gift, made possible by generous financial contributions from friends of the department.

The Boyd Harshbarger Award is given annually for superior academic performance by a first year student. The award is named after our department's founder and first department head. The co-winners for superior academic performance by a first year student are **Angang Zhang** and **Yimeng Xie**. One of the criterion for the award is grade point average and both Angang and Yimeng had a perfect 4.0 GPA in all their first year courses, and both obtained the highest scores on the spring qualifying exam. Due to the donations of the Harshbarger family, Angang and Yimeng will also receive a generous financial gift.

By Jeffrey Birch, Graduate Coordinator

The Jesse C. Arnold Award is given annually for outstanding teaching by a graduate teaching assistant. Dr. Arnold was our department's second department head. The winner for outstanding teaching by a graduate teaching assistant is **Austin Rhodes**. Last year, Austin taught one class for us, with 60 students, and achieved the highest rating among our TA teachers.

The Klaus Hinklemann Award is given annually for outstanding service by a graduate student to the department. Dr. Hinklemann was our department's third department head. The winner for the Hinklemann award for outstanding service to the department is **Andy Hoegh**. Andy has taken leadership over the Virginia Tech chapter of StatCom, Statistics in the Community, which provides pro-bono statistical consulting and collaboration for local non-profits, governmental agencies and schools, and researchers on projects of local interest. He is working on building up StatCom in this department by working with undergraduates from the Stat Club and other graduate students in the department and in helping other institutions around the country create StatComs, especially at liberal arts colleges without opportunities for students to engage in statistical consulting and collaboration.

Graduate Award Details Continued on Page 6



Diana Prigel



Mark Seiss



Jonathan Stallings

Graduate Awards Details continued

The fourth award is named the Ray Myers Award and is given to the outstanding student in the linear models and design of experiments courses. Dr. Myers taught linear models and response surface methodology for many years in our department and used linear models and design of experiments heavily in his research and books. The winner of the award is **Yimeng Xie**. Yimeng was one for the top students in both the linear models course and the design of experiment course and had one of the top scores on this portion of the spring Qualifying Exam. The award includes a sizable financial gift.

The Rose Costain award is named after Rose Costain who worked in our department for 17 years as an administrative assistant for the graduate program and as an editorial assistant for two journals edited by departmental faculty, Biometrics and The Journal of Statistical Computation and Simulation. Her work helped to foster a friendly and caring attitude within the graduate program. The award is given to the graduate student for outstanding citizenship to the department. The recipient for the Rose Costain Award is **Jonathan Stallings**. The award includes a generous financial gift. Jonathan helps insure that the department runs smoothly. He currently is serving in his second year as President of Mu Sigma Rho, the national statistics honor society. He is also president of our department's Graduate Student Organization. In that role, Jonathan organized the students' transition from the

carrels to Sandy Hall and represented the students' voice in the renovation plans for the new student office space. He has been a TA Teacher and is currently a lead collaborator with LISA. Jonathan has also served as host and recruiter to many of the current graduate students to our program.

Recruiting top students is necessary to maintain the quality of our department. To help us in this regard, we have the Jean Dickinson Gibbons Statistics Award, made available by the generous contribution of Dr. Jean Gibbons and her late husband Dr. Jack Fielden. Dr. Gibbons received her PhD from our department many years ago. This award is presented to the 2011 outstanding first year PhD candidate in statistics. The recipient of this award is **Diana Prigel**. Diana has a BS degree in math from SUNY, Brockport and accounting from Grove City College and a MS degree in Marketing and Management from Canisius College.

Mark Seiss, a fifth-year PhD student, won the 2011 Outstanding LISA Collaborator of the Year award. Mark was nominated by four clients for his consistently excellent work, including for his contributions as an on-the-ground statistician in Mozambique developing a survey questionnaire, training the survey enumerators, and ensuring that the data collected were of high quality and useful for statistical analysis. Mark exceeded one client's expectations by meeting with her in Washington, DC and answering all of her questions in a way she could understand.

Graduate Recruiting

Last spring, a near-record number of students applied for admission to our graduate program. In all, 193 applications were reviewed, approaching the record of applications of 194 set in 2011. Among those accepted into our program, our incoming class of 2012 consists of 22 students, 8 on full TA support. The 2012 academic year begins with 92 graduate students, the largest number in our 63 year

history.

Our graduate students are very bright, inquisitive, energetic, enthusiastic, and excited about learning. Our program continues to grow with more faculty, more students, and more new courses. It is really a great time to be part of the Department of Statistics at Virginia Tech.

By **Jeffrey Birch**, Graduate Coordinator

There are 266 Statistics Students

- 92 majors
- 42 minors
- 42 Actuarial Science minors
- 90 graduate (MS & PhD)

The department awarded 18 undergraduate degrees, 16 masters degrees, and 4 PhD's in Fall 2011 to Summer 2012.

New Faces in the Department

By **Eric Smith, Department Head**

Jane Robertson joined the department as an Assistant Professor of Practice. Jane earned her Ph.D. from the University of North Carolina at Chapel Hill in Educational Psychology. She is interested in STEM education, evaluation, and new techniques for teaching statistics. Jane is member of the new IDEASstudio, the Institute for Creativity, Arts & Technology collaborative group of Virginia Tech faculty, students, and community partners that is dedicated to promoting the development of critical and creative thinking skills in learners of all ages. She will also be helping to re-design the undergraduate program and improve the training of our undergraduates.

Anne Ryan joined the department as a Professor of Practice this fall. Anne earned her Ph.D. from our department in 2011 under the supervision of Professor Bill Woodall. Her dissertation research was in the area of surveillance for multinomial and Poisson processes. Anne's plans to continue her research in statistical process control and health care surveillance and will be integral to the development of a new master's degree. She will be teaching the graduate level Statistics in Research class this fall and other graduate level courses.

Xiaowei Wu joined our department following a postdoctoral position in the Department of Statistics at The University of Chicago where he worked with Mary Sara McPeck. At Chicago he worked on the genetic association mapping of longitudinal traits in related individuals. His Ph.D. is from Rice University under Marek Kimmel. His research interests include statistical genetics, Bayesian statistics and branching processes. He also has background in engineering. Recent publications have dealt with extinction problems in branching processes (Statistics and Probability Letters) and on a robust estimator of mutation rates (Mutation Research).

Hongxiao Zhu joined us this fall following a postdoctoral position at Duke University. She received her Ph.D. from Rice University and has also worked at SAMSI and University of Texas MD Anderson Cancer Center before. Her research interests span several aspects of high-dimensional data analysis, including Bayesian methods, functional data analysis and statistical machine learning. Hongxiao's recent work includes a JASA paper on robust, adaptive functional mixed models with Philip Brown and Jeffrey Morris, and a paper in Biometrics on Bayesian hierarchical models for classification with selection of functional predictors, with Marina Vannucci and Dennis Cox.

Hong receives best paper award

By **Vijay Nair, ISBIS President**

Yili Hong, Assistant Professor of Statistics at Virginia Tech, received the Young Business and Industrial Statisticians (y-BIS) best paper award on June 20, 2012, during the closing ceremony of the International Society for Business and Industrial Statistics (ISBIS)

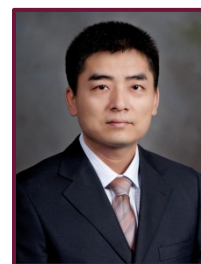
conference in Bangkok, Thailand. Hong received a \$1,000 prize for his paper, titled "A Special Non-Homogeneous Poisson Process Estimation for Window-Observation Repairable Systems." The award is sponsored by the American Statistical Association and National Institute of Statistical Sciences.



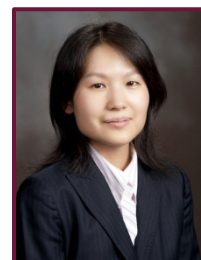
Jane Robertson



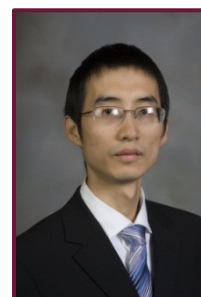
Anne Ryan



Xiaowei Wu



Hongxiao Zhu



Yili Hong

Our Current Partners:



Corporate Partners Conference

By *Golde Holtzman*

The thirteenth annual Virginia Tech Department of Statistics Corporate Partners Conference is planned for October 25 through 27, with the bulk of the activity occurring on Friday, October 26. At least 16 representatives of nine companies will be in attendance. The synergy between our partners, faculty, students, and dean made a substantial contribution to our positive development during the past five years.

Our corporate partners are Becton Dickinson, Capital One, DuPont, Eli Lilly, General Electric, Minitab, Pratt & Whitney, R.J. Reynolds, and SAS. In

addition to strategic guidance, the partners support our programs by funding research and recruitment, by providing short-term and long-term internships for our students, and by hiring many of our graduates. The partner representatives, many of whom are alumni of our department, serve as role models for the current students they get to know by repeated participation in the annual conference.

For further information about the corporate partners program, see the website (www.stat.vt.edu), or contact Professor Golde Holtzman (holtzman@vt.edu, 540-239-2949).



Left: Eric Smith presents Betty Higginbotham with her 40 years of service plaque and vase. All 40 years have been with the College of Science.

Right: Years of service award recipients:
Dr. Jeffrey Birch 35 years, Dr. Eric Smith 30 years, Debra Stover 5 years,
Christina Dillon 10 years, Betty Higginbotham 40 years

Bottom: Stephen Loftus, Chang Liu, and Eric Smith attend the College of Science Celebration of Excellence

Hutcheson Renovation

On January 9th, 2012, the Department of Statistics was alerted that renovations to the fourth floor graduate student carrels and rooms near the elevator would be beginning during the spring semester. We were not given an official start date, but it was suggested that we start moving out as soon as possible. With no start date, we started frantically looking for somewhere for our graduate students, one professor, and LISA's collaboration and consulting rooms. We shifted things around in the offices we had available, found locations for LISA around campus, and were allowed to house some of our graduate students in Sandy Hall. The Sandy rooms are a bright, cheery home during the renovations, but do not have enough space to accommodate all of our graduate students.

The renovation plans have been reworked numerous times, but includes plans for graduate offices, student collaboration space, a dedicated location for office hours, and LISA offices and meeting rooms.

The renovation served as an excellent time to do some departmental cleaning. We have sorted through tons of old files, reports, journals, and books and had to surplus a large amount of furniture that we no longer had room for.

During the carrel and asbestos removal, it was discovered that the large room where the carrels had been did not have a proper roof. The roof was apparently thick foam and tar and would need to be replaced by something more permanent. This, of course, delayed the renovation plans.

We were originally expecting to have the renovations completed before the fall semester and hired four new faculty members. This obviously put a real strain on our available space. We are very thankful for everyone being so understanding and conscientious during the renovations.

Currently, the plans are that construction on the main room will begin in November 2012 and will tentatively be complete before summer 2013.



Timeline

Design Phase

July 23-August 20

Permit & Bidding

August 20 – November 8

Construction

Phase I (Rear Area)

November 9 – December 24

Phase II (Old Carrel Area)

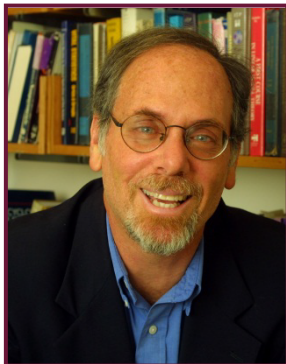
November 9 – February 27





Bill Woodall with Stan Cook, Christine Anderson-Cook (Los Alamos National Laboratory), and Doug Montgomery (Arizona State University)

“Statisticians should be first-rate scientists, not second-rate mathematicians.”
Alan Gelfand



Alan Gelfand,
Colloquium Speaker

Woodall Receives Honors and Awards

Box Medal

The European Network of Industrial and Business Statistics awarded Bill Woodall the Box Medal at this year's annual congress in Ljubljana, Slovenia, in September.

The annual award is named after George Box, Professor Emeritus at the University of Wisconsin and recognizes an extraordinary statistician who has made remarkable contributions to the development and application of statistical

methods in business and industry. Past recipients include Doug Montgomery, who received a Ph.D. in engineering from Virginia Tech in 1969, as well as other prominent international statisticians such as Gerry Hahn, Poul Thyregod, David Cox, and Box himself.

QPRC Honoree

Bill Woodall was the Honoree at the 2012 Quality and Productivity Research Conference, held in Long Beach, CA June 4-7.

Mu Sigma Rho Colloquium

By **Jonathan Stallings, President** and **Caleb King, Vice President**

Last year was particularly special for Mu-Sigma-Rho. For the Mu-Sigma-Rho Research Colloquium, graduate students Jennifer Kensler, Youjia Fang, and Huaiye Zhang each gave presentations on their doctoral research while fellow graduate student, Mark Seiss, spoke about his experiences as an on-the-ground statistician in Mozambique. It was a great opportunity to show the Corporate Partners the breadth of research that is being done in our department as well as the unique experiences had by our students.

The invited speaker for the Fall Colloquium was alumnus Max Morris, who got his PhD from the statistics department in 1977. During the meeting, we inducted an impressive 20 new members into Mu-Sigma-Rho. Dr. Morris is a professor at Iowa State University and specializes in experimental design, recently focusing on computer experiments. His talk was titled "Composite Response Surface Designs for Factors with Jointly Symmetric Effects," where the symmetric effects served as constraints to the model leading to a modified second-order central composite design. Dr. Morris was also able to share some anecdotes about

his times in the department, including stories about I.J. Good, and was pleased to see friends and previous faculty that taught him.

In the spring, we were honored to have Dr. Alan Gelfand as our guest speaker for the Mu-Sigma-Rho colloquium. Dr. Gelfand is a professor of statistics and decision sciences at Duke University and is famous for his work in Bayesian statistics and statistical modeling. The title of his talk was "Analyzing Spatial Directional Data through the use of Gaussian Processes", where he presented two types of Gaussian processes and used them in various ecological settings. Dr. Gelfand met with many of our graduate students in an informal meeting where he discussed, among other things, the manner in which statistics is taught at Duke as well as the place of statistics in society as a scientific field rather than a mathematical one. As he put it, "Statisticians should be first-rate scientists, not second-rate mathematicians."

We are also pleased to have Dr. Peter Bickel as the guest speaker for the Fall semester. Dr. Bickel is a professor of statistics at University of California-Berkeley. We look forward to having him here at our department.

Dong-Yun Kim's Recent Research Activities

By *Dong-Yun Kim, Assistant Professor*

Dr. Dong-Yun Kim was recently appointed as Assistant Professor in the Department of Psychiatry and Behavioral Medicine, Virginia Tech Carilion School of Medicine (VTCOSM). This is a secondary appointment in addition to her current appointment as tenure-track Assistant Professor at the Department of Statistics, Virginia Tech. Dr. Kim is collaborating with several researchers at VTCOSM, including the following projects:

Respite to Enable Permanent Placement for Children with Reactive Attachment

One of the main objectives of the study is to identify factors that influence the duration of foster care at which facility that children are placed, and develop quantitative model for prediction. This will in turn provide valuable information for policy makers to allocate ideal environment for children, thus increase the satisfaction of children and find cost effective ways for foster care. This will serve as basis for the clinical trial that will implement novel ways to reduce the number of foster care facility changes. Dr. Kim is collaborating with Dr. Mark Kilgus, the Chair of the Department of Psychiatry and Behavioral Medicine, VTCOSM. The Virginia Department of Social Services (VDSS) is also participating in this project and has provided the state-level data for foster children. Currently the clinical trial is at the recruitment stage. Figure 1 to the right illustrates the duration of time children stay in foster homes over the years. Figure 2 compares general foster home children to those who have switched homes more than 4 times in terms of the proportion of behavioral problems.

Relationship of Physical and Functional Independence and Perceived Quality of Life of Veteran patients with Alzheimer's Disease

This paper examines the relationship between the self-assessment of the dementia patients and that of their caregivers. Using the USVA patient survey data, she identified some significant discrepancies in assessing the patients' mental and physical well-being and daily activities. The study has substantial legal and financial implications in relation to the placement and caregiving of dementia patients. The paper has been accepted for publication in American Journal of Hospice and Palliative Medicine. For this project, Dr. Kim has been working with Dr. Kye Kim. He is a professor at the Department of Psychiatry and Behavioral Medicine, VTCOSM, and the director of the Geriatric Psychiatry Fellowship Program. He is an expert on dementia and Alzheimer disease.

Delirium among Veterans at a Local VA Hospital: Correlation with Prevalence of Head CT Vascular Lesions and Other Clinical Parameters

There is a strong association of delirium with the type and severity of dementia and age. This project studies the delirium vascular disease in relation to brain white matter regions. Using the head CT scan data of VA patients, Dr. Kim is examining the relationship of the severity of the delirium and the extent and location of damages in the central nervous system of these patients. For this project, Dr. Kim is collaborating with Dr. Mark Detweiler, an associate professor at the Department of Psychiatry and Behavioral Medicine, VTCOSM, and a psychiatrist at the Veterans Affairs Medical Center, Salem, Virginia



Dong-Yun Kim

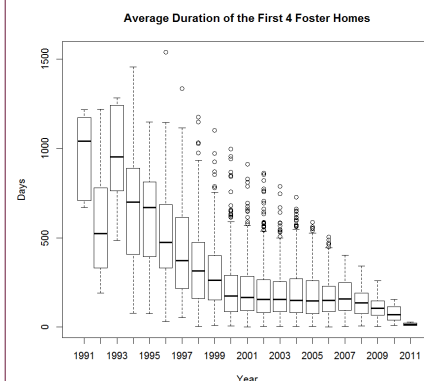


Figure 1: The average number of days children stayed in foster homes compared by year.

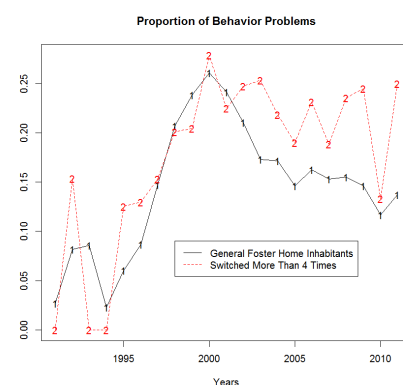


Figure 2: Comparing the proportion of behavioral problems of general foster home children to those who have switched foster homes more than 4 times.



Find LISA on Facebook & Twitter
(www.facebook.com/Statistical.collaboration)

(http://twitter.com/LISA_VT)



Loro Goré, department head, and Jaafar Juma, assistant professor, hang a poster about LISA at the University of Juba.

LISA 2020 and Visiting South Sudan

One of LISA's goals for expanding the global impact of statistics is to help create a network of 20 new statistical collaboration laboratories in developing countries by 2020. Our proposed method for doing this is simple: Statisticians from developing countries come to Virginia Tech to work in LISA and learn how to communicate and collaborate with non-statisticians. They return to their countries to work as collaborative statisticians, create a new laboratory, and train other statisticians to join them in working with researchers to solve research problems. Faculty and students from LISA later visit the newly created statistical collaboration labs for between 2 weeks and 6 months to help create the new centers or to sustain them by providing additional training and support.

LISA is currently seeking funding to train statisticians from developing countries to communicate and collaborate with non-statisticians.

In June, Eric Vance, director of LISA, traveled

to South Sudan with the Rebuild Higher Education in Agriculture (RHEA) program to promote the use of statistics in agricultural research at the University of Juba.

Vance met with the Vice Chancellor, three members of the statistics department, the crop science department head, and the registrar for the College of Natural Resources to pitch his idea of developing a statistical collaboration center at the University of Juba. The members of the statistics department were enthusiastic about the idea of learning to communicate and collaborate with researchers. The Vice Chancellor felt that it would be more useful to train agricultural researchers in statistics and to develop a statistical collaboration program in the future.

Vance left it in the hands of the faculty to convince the Vice Chancellor that a statistical collaboration program would be very beneficial for the University of Juba and their agricultural research.

StatCom

Virginia Tech's chapter of StatCom, Statistics in the Community, provides pro-bono statistical consulting and collaboration for local non-profits, governmental agencies and schools, and researchers on projects of local interest.

In the past year, nine students have worked on three different projects for StatCom.

- The first project is an assessment of environmental samples collected annually at Smith Mountain Lake since 1987. StatCom members have provided statistical support on several different aspects of this project including: graphical displays of the data used in annual reports, models testing relationships between blue and green algae, and evaluating spatial effects of phosphorus on Secchi depth.

- The second project, which is just getting underway, was brought to the group by the Virginia Rural Water Association. Fishing guides have noticed a decrease in water quality which has hurt business. StatCom is compiling historical water samples to attempt

to create models of water clarity over time and space. If there is not sufficient data publicly available to satisfy the client's concerns, StatCom will also assist in a sampling plan for collecting water samples on the New River.

- The final project included a survey on community involvement and citing of the Roanoke Rescue Mission. StatCom members evaluated the survey questions, provided insight on conducting a pilot test of the survey and made recommendations on distributing the survey.

StatCom at Virginia Tech has a strong relationship with LISA and the Virginia Tech Statistics Department. All graduate students take a course on communication in statistical collaborations, which serves as an introduction to work as a statistical collaborator. As part of the Master's curriculum students serve as collaborators in LISA for at least one semester, as part of this experience students can chose to work StatCom projects.

LISA Quick Stats for 2011-12

- 384 Collaboration Clients
- 377 Walk-In Clients
- 505 Short Course Attendees
- More than 7,100 hours of statistical assistance



StatCom donated 11 boxes of books to the Catholic University of South Sudan and the University of Juba in South Sudan.

Virginia Tech

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Recruiting: We Need Your Help!

The Department of Statistics and LISA are seeking to recruit to our Ph.D. program mathematics, statistics, and computer science majors who are interested in using statistics to help people, solve real world problems, and travel around the world. Please share our recruiting flyer with interested students (www.lisa.stat.vt.edu/sites/default/files/VT.Statistics.recruiting.pdf).



Contributing to the Department

The faculty have worked hard to improve the program over the last four years. Our success has been greatly enhanced by the generous support of alumni and friends. We are extremely grateful for contributions from Dr. Jean Gibbons, Dr. Ray Myers, and John Costain.

regardless of the size of the contribution.

If you wish to discuss opportunities for supporting graduate students or faculty through your contributions, please feel free to give Dr. Smith a call.

Your support and encouragement is greatly appreciated!

Contributing to the department is easy. Simply detach the form below and mail it to the Office of University Development with your contribution.

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