



2013 - 2014 Biostatistics and Computational Biology Annual Newsletter

A message from the Chair, Robert Strawderman, ScD

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The past two years have been a successful and productive period for this outstanding department; this newsletter contains a selective review. I am deeply appreciative for the efforts of our talented faculty, dedicated staff and excellent students in making such positive progress. In the 2012 newsletter, I also remarked on budgetary challenges facing the department and medical center more broadly. While many of these challenges do remain, I am very pleased to report that significant progress has been made in stabilizing the department's finances. Important factors contributing to this progress include: a significant increase in our core budget allocation that resulted from efforts to ensure that DBCB's substantial collaborative research mission is properly accounted for in the budget determination processes used by the School of Medicine and Dentistry; the implementation of several administrative policies designed to better track (and, where needed, mitigate) the impact of departmental discretionary spending; and continued efforts on the part of our hard-working faculty to

maintain, and in many cases increase, sponsored research support levels.

Department faculty continue to be active in publishing a mix of methodological and collaborative research, pursuing research funding opportunities, teaching our excellent graduate students, engaging in statistical consultation, and serving the profession in a variety of ways, including national committee work, appointments on NIH study sections and other grant review panels, and various editorial board positions (e.g., Editors of Chance and Lifetime Data Analysis, along with prominent Associate Editor positions at JASA, Biometrics, Biostatistics, and several other journals). As a department, we remain committed to expanding our capabilities in ways that will allow us to better respond to the challenges and opportunities posed by the "big data" revolution. An important and positive development in this regard is an increase in the size of our tenure track faculty over the past two years, with three outstanding hires (one assistant professor, two associate professors), all of whom have expertise directly relevant

to "big data" and the field of data science more broadly. DBCB faculty have also increasingly affiliated with the new Institute for Data Science, having recently been involved in both faculty searches and in the development of new undergraduate and graduate degree programs.

One of the increasingly pressing questions facing the College of Arts & Sciences is the future of the undergraduate statistics major. As noted in last year's letter, the major and especially the courses taught by College statistics faculty have both experienced rapid enrollment; in contrast to this growth, the size of the College statistics faculty has remained static. The latest guidelines from the American Statistical Association, anticipated to be finalized soon, strongly suggest that undergraduate programs in statistics should better equip students with the core skills that underpin the field of data science. It is therefore reasonable to anticipate further increases in enrollment with the advent of the new undergraduate data science major. DBCB's strong dedication to statistical practice,

**continued from page 1-
A message from the chair**

combined with its ample breadth and depth of expertise in statistical methods and computation, puts it in a strong and natural position to assist with these coming challenges and our discussions continue with the College on the best way to move forward.

I would like to end this brief message by drawing your attention to the William Jackson Hall Graduate Student Fellowship that the department has successfully established in honor of Jack Hall. Since its inception, and through the generosity of many of you, the department has raised nearly \$100,000 in private donations. The department has also invested \$100,000 of its reserve funds, bringing the total endowment very close to \$200,000. The department will be very pleased to be announce the inaugural recipient of this Fellowship sometime during Fall 2014. Our goal is to reach a minimum endowment of \$250,000; this amount will permit us to honor a deserving student in Jack's name each year with a full semester of financial support. For those who have already made donations, please accept my sincere appreciation for your help – and, for those of you that are contemplating the possibility of philanthropy in the future, please do keep the Fellowship in mind!

Grant Awards

AHRQ has awarded an R24 grant to a research team led by Dr. Dongwen Wang



Dongwen Wang, PhD

The Agency for Healthcare Research and Quality (AHRQ) has funded an R24 grant to a research team led by Dr. Dongwen Wang. This project tackles a challenging issue to disseminate evidence-based clinical practice guidelines to HIV healthcare providers through integrating various information technologies and social organizational contexts. Dr. Wang and his collaborator, Dr. Amneris Luque, an HIV specialist from the Infectious Diseases Unit, have been working in this area for the past seven years and have accumulated significant experiences and resources. In particular, they have developed an online clinical education program sponsored by the New York State Department of Health, HIV Clinical Education Initiative (CEI), and have been engaging in dissemination of HIV clinical knowledge with online CME/CNE courses, multimedia learning modules, interactive case simulation tools, and mobile training resources. Serving in dual roles as the Technology Center and the Resource & Referral

Center for the CEI program, their team has been collaborating with five other CEI Centers in New York State to disseminate the latest findings from HIV clinical research to frontline healthcare providers. Since its launch in 2008, the CEI online education program has reached out to 37,000 individuals from all 50 U.S. States and 171 countries around the world. Clinicians have completed online training through this program and acquired 5,600 CME/CNE credits. The CEI website (www.ceitraining.org) has recorded 80,000 visits and 550,000 page views, and is now consistently ranked by Google and other search engines as a top site for HIV clinical education. This three-year \$900k grant from AHRQ will significantly enhance the existing program through developing partnerships, conducting multi-disciplinary dissemination research, building an online repository of HIV/AIDS information products, and evaluating the usability of program resources and their impacts to knowledge translation. Other members of the team are Terry Doll, Matt Bernhardt, Hung Le, Tom DellaPorta, Monica Barbosu and Keith Bourgeois.

CTSI Novel Biostatistical and Epidemiologic Methods Awardees

Several department faculty members have earned CTSI Novel Biostatistical and Epidemiologic Methods (NBEM) pilot awards in 2013 and 2014. The CTSI's NBEM program offers investigators one—two year awards for up to \$20,000, to stimulate the development of novel biostatistical and epidemiologic methods to help overcome specifically identified limitations that will significantly enhance the validity, accuracy, scope or speed of translational research.

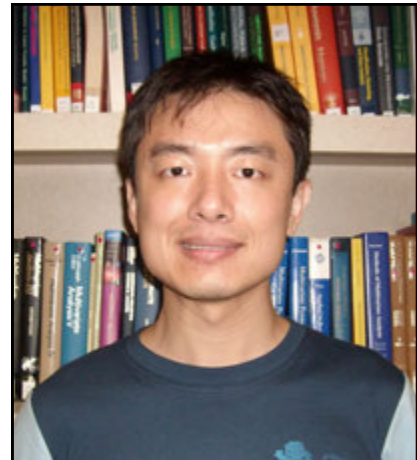
2013 NBEM Awardees



Anthony Almudevar, PhD
for
Predictive Models for Longitudinal Technological Home Monitoring Data



Changyong Feng, PhD
for
Allowance for Center Effects in the Analysis of Randomized Clinical Trial with Time-To-Event Outcomes

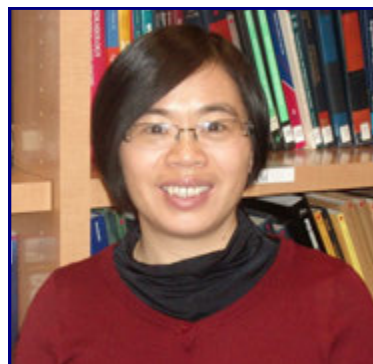


Xing Qiu, PhD
for
A Unified Method for Differential Expression and Differential Association Analyses

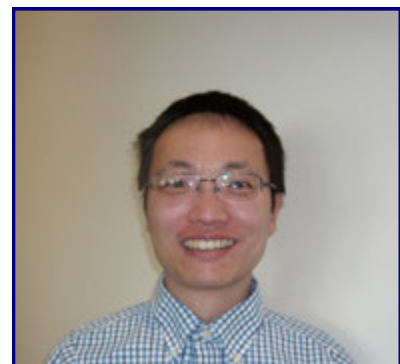
2014 NBEM Awardees



Changyong Feng, PhD
for
Cure Model In Recurrent Event Data



Hua He, PhD
for
Casual Inference with Zero-Inflated Predictors: Alcohol, HIV Risk, and Depression



Naiji Lu, PhD
for
Modeling Human Interactions in Social Networks

2014 Award Announcement



Hulin Wu, PhD
Director of CIBEM

The Center for Integrative Bioinformatics and Experimental Mathematics (CIBEM) in the Department of Biostatistics and Computational Biology, University of Rochester Medical Center (URMC) issued the 2nd RFA for the bioinformatics collaboration pilot program to promote collaborations between CIBEM faculty members and experimental bioinformatics scientists. This pilot program is designed to support projects that require both innovative bioinformatics experimental technologies and novel analytical/computational methods. Two projects received the award this year. One is the project entitled, “**Identification of Interferon Stimulated Genes Regulating Viral Latency**,” from Dr. Jian Zhu, Assistant Professor, the Department of Microbiology and Immunology, URMC with a goal to identify interferon stimulated genes (ISGs) that regulate viral latency, which allows viruses to escape host immune surveillance and survive from most antiviral drugs. The second project is “**Modeling Immune Response in 3D Bioreactor Cultures of Human Secondary Immune Organ Cells**,” from Dr. David Wu, Professor, Department of Chemical Engineering, Hajim School of Engineering & Applied Sciences, with a goal to use 3D tonsil and spleen bioreactor cultures as a human immune response model for studying influenza virus infection and vaccination. Congratulations!

Both projects present challenges that will require development of complex computational modeling and novel analysis approaches by CIBEM faculty members. Investigators who consulted and closely collaborated with CIBEM faculty members from the beginning of the proposal development were able to develop more successful applications.

In addition, one pilot project awarded last year, “**Quantitative proteomic analysis of influenza-infected mice**” from Dr. Sina Ghaemmaghami, Assistant Professor from the Department of Biology, School of Arts and Sciences, received a 2nd year renewal with supplementary funding. Another pilot project awarded last year, “**Interaction between aging and HIV-associated neurological disorder**” from Dr. Stephen Dewhurst, Professor and Dr. Poleskaya Oksana, Research Assistant Professor, Department of Microbiology and Immunology (URMC), received a one-year no-cost extension.

UR Named Center for AIDS Research by the National Institutes of Health Coveted Designation Delivers \$7.5 Million in New Funding; UR One of Only 18 Centers in U.S.

The University of Rochester was named a Center for AIDS Research (CFAR) by the National Institutes of Health, a designation that infuses \$7.5 million into HIV/AIDS work across the University and places it among the best in the nation for research to improve the prevention, detection and treatment of the disease. The new award spans five years and will be used to form

unique collaborations between the Department of Neurology at the Medical Center and the Institute of Optics in the Hajim School of Engineering & Applied Sciences, with the goal of delivering high-impact discoveries. Even more importantly, it will support the career development of the next generation of HIV/AIDS researchers—young investigators who will transform today’s

discoveries into new treatments or practices - through mentoring programs and pilot grants. **Hulin Wu, PhD**, Director of the **Center for Integrative Bioinformatics and Experimental Mathematics (CIBEM)**, will oversee the CFAR’s biostatistics, bioinformatics and biomathematical modeling research activities and support services.

William Jackson Hall Graduate Student Fellowship

The Department of Biostatistics and Computational Biology at the University of Rochester Medical Center has endowed the creation of the William Jackson Hall Graduate Student Fellowship in honor of Jack's lifetime achievements. Jack joined the University of Rochester faculty as professor and chair of the Department of Statistics in the College of Arts and Sciences in 1969. During his nearly 40 years here, he has made highly significant contributions to several areas of mathematical statistics, recognized in part through honorary fellowship in the American Association for the Advancement of Science, the Institute of Mathematical Statistics and the American Statistical Association. Jack was also a major force behind the formation of the Division of Biostatistics in the School of Medicine and Dentistry, the forerunner of the present department, and he played an especially instrumental role in developing Rochester's doctoral program in Statistics.

Jack's dedication to the graduate program and its students, commitment to teaching, and collaboration in translational research is a testament to the significance of this legacy. His depth of care for his students and unparalleled effort to teaching has produced a loyal and grateful group of alumni from the program. Many of his students have gone on to prominent roles in academia and industry. Jack's impact on the program was formally recognized in his receipt of the first Lifetime Achievement in Graduate Teaching Award, bestowed upon him by the University of Rochester at the 2004 Commencement Ceremony. Common themes of the letters in support of his nomination for this award included Jack's commitment to teaching, the sheer breadth of his knowledge in the theory and applications of statistics, and the individual attention, hospitality and friendship that he freely gave to his students and their families. Siddartha Dalal, Jack's first PhD student at Rochester and Chief Technology Officer at RAND Corporation, writes "He was a great teacher, his lectures were always thoughtful, and he challenged students to think about basic issues. He took great pride in their accomplishments and spoke highly about those to others. Jack's interests in his students also did not end with the completion of their thesis, but have continued to the extent that many students count him as part of their extended family." Jack has been involved in many clinical trials and other collaborative projects at the Medical Center, where the department sits at the core of all research and plays a pivotal role in planning for future research initiatives. Arthur J. Moss, Professor of Medicine (Cardiology) and Jack's collaborator for nearly 30 years, remarks that "Jack has been intimately involved in our longstanding research related to the Long QT Syndrome and more recently in our Multicenter Automatic Defibrillator Implantation Trial. His unique insights into statistical issues have been at the heart of the design of our programs. It is through these interactions that I myself became one of his students in the sense that I learned from each and every interaction with him."

This merit-based fellowship intends to recognize one or more Statistics doctoral students in their last semester or year of study whose academic record reflects the major cornerstones of Jack's distinguished career. Recipients will have distinguished themselves through combination of outstanding performance in coursework and qualifying exams; excellence in their service as a graduate student teaching assistant; and timely completion of a dissertation containing work judged to be of particular significance in both its methodological contribution and potential impact in one or more application areas.

The department specifically intends for this fellowship to be an enduring tribute to Jack's legacy and enormous influence on the Statistics doctoral degree program and its students through his many outstanding contributions to research, graduate teaching, and doctoral student mentorship. Your generosity affords us the ability to continue to attract the best and brightest students, to train outstanding scientists of tomorrow, and to further elevate the department to new levels of prominence in education and research. To make a gift please contact Carmen Aiezza, Director of Advancement, 585-275-0808, carmen.aiezza@rochester.edu. Alternatively, you may also use the secure website www.rochester.edu/advancement by selecting 'Make an Online Gift'.

Important: If you wish to make a gift and choose to do so online, please be sure to select **School of Medicine and Dentistry** as the gift designation and in the comment box add: **Hall Graduate Student Fellowship (A09765)**.

Student Activities

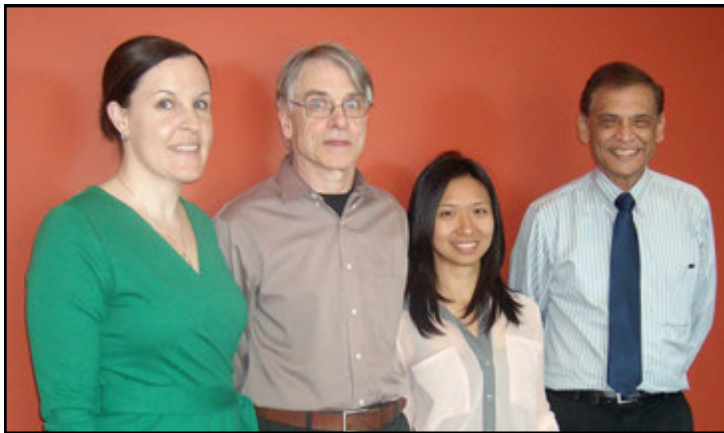
4th Annual Student Workshop - Friday, May 17, 2013



From left to right: Changming Xia, Ziji Yu, Thanh Tran, Tian Chen, Fei Ma, and Jason Morrisette

Our annual Statistics PhD Student Workshop was held on Friday, May 17, 2013. The workshop included presentations by PhD students who had passed the Advanced Examination but had not yet taken (or scheduled) their proposal examination. Each student presented on his/her dissertation topic, providing some background and an update on the progress of his/her research. For students who had not yet identified a dissertation topic, the presentation was on material covered in a recent reading course (ideally, a potential dissertation topic).

Graduate Student Society Career Day - Tuesday, June 4, 2013



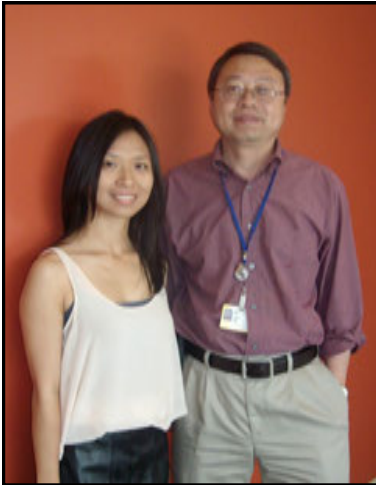
Left to right: Abbie Bellamy, PhD, Padraic Neville, MS, Iris Chen and Siddhartha Dalal, PhD

The School of Medicine and Dentistry Graduate Student Society hosted a Career Conference on Tuesday, June 4, 2013. The Conference included a series of panel discussions with professionals from outside academia dedicated to providing concrete and comprehensive perspectives regarding employment and career development for PhD, Master's and postdoctoral researchers. The speakers for the Biostatistics Career Workshop were **Abbie Bellamy, PhD**, **Padraic Neville, MS**, and **Siddhartha Dalal, PhD**.

Abbie Bellamy, PhD, a senior statistician at Bausch and Lomb, is an alumna of the department, receiving her degree in 2009. **Padraic Neville, MS** is a Principal Research Statistician Developer at SAS. **Siddhartha Dalal, PhD**, the keynote speaker, is currently an Adjunct Professor at RAND Corporation, Columbia University and Research Professor at Rutgers University DIMACS Center. Besides teaching Data Mining and Machine Learning courses, he is also helping create new startups at Columbia University. Sid has co-authored over 100 publications, patents and monographs covering the areas of medical informatics, risk analysis, imaging processing, stochastic optimization, data/document mining, software engineering and Bayesian methods. Sid holds a BS from the University of Bombay and an MBA and PhD from the University of Rochester, the latter received in 1975 under the guidance of the late **Professor W. Jackson Hall, PhD**.

This event for the statisticians was arranged by our graduate student **Iris Chen**.

2013 PhD Recipients



Iris Chen, PhD, (L), shown here with her advisor, **Hulin Wu, PhD**, successfully defended her thesis, "State Space Models and Differential Equations for Dynamic Gene Regulatory Network Identification" on Thursday, June 13, 2013. Iris has accepted a position with Amgen, Inc. as a biostatistics manager.



Pan Wu, PhD (R) celebrated with his advisor, **Xin Tu, PhD** after successfully defending his thesis, "A New Class of Structural Functional Response Models for Causal Inference and Mediation Analysis" on Wednesday, July 17, 2013. Pan has accepted a position at Christiana Care Health System as senior biostatistician.

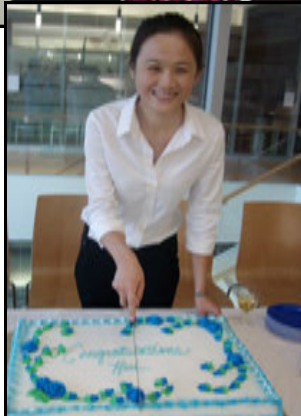


Yao Yu, PhD, (R), pictured here with her advisor, **Hua Liang, PhD**, successfully defended her thesis, "Single-index Model with Application in Estimation of ODE and Gene Regulatory Network" on Thursday, July 18, 2013. Yao has accepted a position at The Center for Human Reproduction in New York, New York as an assistant scientist statistician.



Katie Evans, PhD with her advisors, **Sally Thurston, PhD**, and **Tanzy Love, PhD**, share smiles after Katie successfully defending her thesis, "Extensions to Model-Based Clustering for Mixed-Type Data: A New Model Framework, Variable Selection, and Outlier Identification", on Friday, October 18, 2013. Katie accepted a position with DuPont as a statistician consultant.

*"Success is not final, failure is not fatal,
It is the courage to continue that counts."
Winston Churchill*



Hui Yang, PhD celebrated a successful defense of her thesis, "Model Selection and Model Averaging for Longitudinal Data with Applications in Personalized Medicine" on Tuesday, December 3, 2013. Hui's advisor was **Hua Liang, PhD**. She has accepted a position at Amgen as a biostatistics manager.

*"Dream barriers look very high until someone climbs
them. Then they are not barriers anymore."
Lasse Virén*

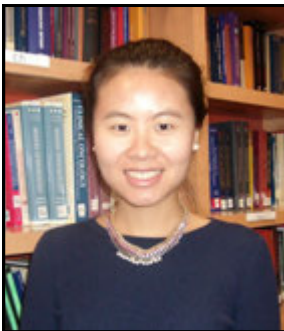
More Student News



Danielle Boselli, MS (r) with **Derick Peterson, PhD** after her Master's thesis defense on Thursday, December 19, 2013 on "Assessment of Left and Right Ventricular Volume Reductions to Identify Clinical Responders to CRT-D Among Non-LBBB Patients: A MAD-IT Substudy." Danielle accepted a position at the Levine Cancer Institute as a biostatistical analyst.



Joe Ciminelli entered our PhD program in fall of 2013. He is a University of Rochester graduate.



Yun Zhang completed her Master's in Statistics at the University of Pennsylvania. She joined the PhD program in fall of 2013.

Xiang Lu (no photo available) entered our MA program in fall of 2013. He received his Bachelor's degree from Shanghai University of Finance and Economics.

Lam Tram (no photo available) is a part-time MS student. Lam is currently a PhD student in Computer Science.

Kristina Maletz (no photo available) is a part-time MS student. Kristina is also a medical resident in Radiation Oncology.

The students were asked a question by **Tanzy Love, PhD** about what their favorite project was and here are a few answers:

Joseph Ciminelli

As a first year student, it has been quite the opportunity to explore statistics outside of the normal scope of coursework through a reading I completed with Professor Tanzy Love in social network models. Each week the time spent preparing for my next meeting with Professor Love was a breath of fresh air that allowed me to delve into the main areas of research in this subject that is of particular interest to me and just seems to "make sense." Being able to explore such an opportunity from the beginning of my educational career has propelled my interests and readied me for the years to come!

Amy Lalonde

I really enjoyed my project for advanced Bayesian because it allowed me to learn more about generalized linear mixed effects models and to see the sensitivity to the choice of priors, all while exploring the caveats of MCMC. This research project has been a great lead into further work in mixed effects models, as well as future work with mixture models and structural equation models.

Changming Xia

My favorite project is my dissertation this year. I really enjoy the ability to focus on the one thing that matters most to me.

Kyra Singh

The Advanced Bayesian semester project was my favorite assignment this year! It was challenging and exciting to apply a difficult Bayesian method we learned in the classroom to my research in clustering.

2014 PhD Recipients



Xiao Zhang, PhD happily celebrates her successful thesis defense "Hypothesis Testing Problems Involving Order Restricted Parameters." on Thursday, April 24, 2014. Xiao's advisors were **Michael P. McDermott, PhD** and **Govind S. Mudholkar, PhD**.



Jason Morrissette, PhD, (L), shown here with his advisor, **Mike McDermott, PhD**, successfully defended his thesis, "Order Restricted Analysis of Covariance with Interactions" on Thursday, June 10, 2014. Jason has accepted a position with Wegmans as a merchandising support manager.

Fei Ma, PhD, celebrates her successfully defended thesis, "Composite Likelihood Inference for Multivariate Finite Mixture Models and Application to Flow Cytometry" on Friday, August 29, 2014. Fei's advisors were **Ollivier Hyrien, PhD** and **Xin Tu, PhD**. She has accepted a position at Novartis Pharmaceuticals Corp. as a senior biostatistician.



Yu Han, PhD (L) successfully defended his thesis, "New Semiparametric Methods for Clustered Time-to-Event Data" on Tuesday, June 17, 2014. Yu's advisors were **Changyong Feng, PhD** (R) and **Xin Tu, PhD**. Yu has accepted a position at Novartis Oncology in the Dept. of Biometrics and Data Management as senior biostatistician.

2014 Master's Recipient



Sanjukta Bandyopadhyay, MS smiles after successfully defending her Master's thesis, "Identifying Factors Affecting Treatment Success in Adult Drug Treatment Court Clients", on Monday, June 9, 2014. Sanjukta's advisors were **Hongmei Yang, PhD** and **Diane Morse, MD**.

More Student News—Internships—2013 and 2014

A number of our Ph.D. students traveled in several different directions on internships over the past two summers.

- ◆ **Xiao Zhang** was at Regeneron Pharmaceuticals. (2013)
- ◆ **Hui Yang** went to Amgen in Southern California. (2013)
- ◆ **Changming Xia** interned at the US Food and Drug Administration (2013) and with the Biopharmaceutics Department at Merck in Philadelphia, PA (2014).
- ◆ **Van Tran** was at National Institute of Child Health and Human Development (2013) and she traveled to Melbourne, Australia to attend Monash University (2014).
- ◆ **Fei Ma** traveled to Novartis. (2013)
- ◆ **Yun Han** went to the Mayo Clinic and then to Vertex Pharmaceuticals (both in the Summer of 2013).
- ◆ **Tian Chen** spent her summer at Novartis in New Jersey. (2014)
- ◆ **Donald Hebert** interned at the Institute for Defense Analyses in Alexandria, VA. (2014)
- ◆ **Katherine Grzesik** will be an intern at DuPont in Wilmington, DE until December 2014.
- ◆ **Ziji Yu** did an internship at Novartis Oncology in East Hanover, New Jersey. (2014)
- ◆ **Kyra Singh** was an intern at Chevron Oronite in Richmond, CA. (2014)



Arrival of New Students

The department welcomes 5 PhD students and 3 MA students for the 2014-2015 academic year. The first-year PhD students are Madhurima Majumder, Valeriia Sherina, Bokai Wang, Yu Gu, and Xiang Lu. The new MA students are Guanqing Chen, Shiyang Ma and Hao Sun.

Pictured here at the picnic are from left to right: Guanqing Chen, Valeriia Sherina, Shiyang Ma, Bokai Wang, and Hao Sun.

5th Annual Student Workshop - Friday, May 16, 2014



From left to right is Kathryn Grzesik, Anthony Almudevar, PhD, Donnie Hebert, Mike McDermott, PhD, Tanzy Love, PhD, Sally Thurston, PhD, Kyra Singh, and Chang Liu.

Our 5th Annual Student Workshop took place on Friday, May 16, 2014. The workshop included presentations by PhD students who have passed the Advanced Examination but have not yet had (or scheduled) their proposal exam. Each student presented on his/her dissertation topic, providing some background and an update on the progress of his/her research. For students who had not yet identified a dissertation topic, the presentation is typically on material covered in a recent reading course (ideally, a potential dissertation topic).

*"Confidence comes not from always being right, but from not fearing to be wrong."
Peter T. McIntyre*

Other Department News

- ◆ **Mike McDermott, PhD** was named an editor of *Chance* magazine starting January 1, 2014. He was re-appointed to the Editorial Board for the journal, *Movement Disorders*. In addition to 16 collaborative papers in medical journals, Mike also co-authored a paper in JASA with his PhD student **Jason Morrisette** (see below). At JSM in Montreal, Mike was an invited presenter and spoke on “Interim monitoring of longitudinal outcomes in clinical trials”.
- ◆ **Tanzy M. Love, PhD** and **Sally W. Thurston, PhD** were among co-authors of a paper in the *Journal of the American Statistical Association*. Xiao L, Thurston SW, Ruppert D, Love TMT, Davidson PW. “Bayesian Models for Multiple Outcomes in Domains with Application to the Seychelles Child Development Study”, *Journal of the American Statistical Association*, 2013 to appear in <http://www.tandfonline.com/doi/abs/10.1080/01621459.2013.830070#.U-U3z13D9aR>
- ◆ **Tongtong Wu, PhD** started with us on September 1, 2013 as an Associate Professor. She is from the University of Maryland, College Park in the Department of Epidemiology and Biostatistics.
- ◆ **Brent A. Johnson, PhD** from the Rollins School of Public Health at Emory University began a tenure-track associate professor position with us on July 1, 2014.
- ◆ Associate Professor **Christopher Beck, PhD** was selected as the 2013 recipient of the Outstanding Graduate Student Teacher Award! The selection of the awardee is based on the instructor’s record of excellence in classroom instruction as reflected by the letter of nomination from students enrolled in one or more courses in which the teacher has delivered a significant number of lectures and by course-instructor survey evaluations. Congratulations, Chris!!!
- ◆ Professors **Hua He, PhD**, **Wan Tang, PhD** and **Xin Tu, PhD** received an invitation from **Provost Len- nie** to join him at the **2013 Annual Celebration of the “Book”** on Tuesday, May 7, in Rush Rhees Library. This is a University-wide event to recognize and honor all University of Rochester faculty and staff members who have authored any book or its equivalent in the period May 1, 2012 through April 30, 2013. *Applied Categorical and Count Data Analysis* (Tang, W., He, H. and Tu, X.M., Chapman & Hall/CRC, FL, 2012) and *Modern Clinical Trial Analysis* (Tang, W. and Tu, X.M. (Editors). Springer Science, New York, 2012) were published during this period.
- ◆ PhD student, **Jason Morrisette**, published his first paper with advisor, **Mike McDermott, PhD** that appeared in the prestigious *Journal of the American Statistical Association*, “Estimation and inference concerning ordered means in analysis of covariance models with interactions” 2013; 108:832-839.
- ◆ Milestone service awards were given to:
Jan Bausch for 15 years of service and **Cheryl Bliss-Clark** for 10 years of service. Both Jan and Cheryl received the awards in August 2013.
- ◆ **Xuan Hung Le, PhD** was promoted to Research Assistant Professor. Hung works closely with the Clinical Education Initiative (CEI).
- ◆ **Xing Qiu, PhD** was promoted to Associate Professor in July 2013.
- ◆ Joining the department are **Le (Adam) Zhang, PhD**, Research Assistant Professor; **Alicia Tyrell**, database developer; and **Juilee Thakar, PhD**, Assistant Professor in the Department of Microbiology and Immunology with a secondary appointment in the Department of Biostatistics and Computational Biology; and postdoctoral associates **Michele Carey** and **Xiaodian Sun**. All working with **Hulin Wu, PhD**.
- ◆ **Matthew McCall, PhD** was awarded a K99 career development grant from the National Human Genome Research Institute in September 2013 to develop the statistical methodology necessary to estimate gene regulatory networks. Estimation of these networks is crucial to understanding cellular mechanisms, detecting differences between cell types and predicting cellular response to interventions. Dr. McCall’s goal

Department News

is to further our understanding of complex cellular networks by drawing on the fields of statistics, systems biology, and genetics. Dr. McCall's advisor is **Dr. Anthony Almudevar**. Upon completion of one year under his K99 mentored research award, Dr. McCall was awarded an R00 grant providing three years of independent research support. **Matt**, formerly a postdoc in our department, accepted a tenure-track faculty position and will continue working with **Anthony Almudevar, PhD** effective September 1, 2014.

- ◆ **Robert Strawderman, ScD**, was asked by the new JASA Theory & Methods editors to continue his service as an associate editor. He will have served JASA for 17 consecutive years, under seven editors. Also, Professor Strawderman, served on the inaugural faculty search committee for the new Institute of Data Science here at the University of Rochester. While administrative duties continue to occupy a significant amount of his time, Rob has remained active in research. He is currently working with postdoc **Liqun Diao** and Cornell PhD student **Jon Steingrimsson** on new methods for building regression trees with censored data, work funded in part by the National Cancer Institute. Along with Cornell colleague Marty Wells and PhD student Liz Schifano, he recently published an article in the Electronic Journal of Statistics which explores the connections between hierarchical Bayesian prior specifications and estimation using penalized likelihood using minimax concave penalty functions. With colleague Mark Cowen, MD (Quality Institute, St Joseph Mercy Health System in Ann Arbor, MI) and others, papers were published in the Journal of Hospital Medicine in 2013 and 2014. In the 2013 article, retrospectively collected data on over 56,000 patients were used to develop an accurate model for 30-day mortality risk; using two large, independent validation datasets, these predictions were subsequently shown to be strongly associated with the risk of having several other adverse events. In the 2014 article, the feasibility of generating these mortality predictions on admission on a real-time basis was evaluated in a prospective study involving nearly 10,000 patients. The excellent prediction accuracy for 30-day mortality risk and several other adverse events suggests the possibility of using 30-day mortality predictions as a common reference point for launching risk-dependent proactive care plans. Two other collaborative research papers with URMC colleagues Michael Milano, Lois Travis and Yue Li were respectively published in Journal of Thoracic Oncology and Health Affairs.
- ◆ The Department will host an **Open House** for prospective graduate students on **Saturday, November 1, 2014**. The global demand for professionals and academics with advanced training in the statistical sciences is extremely strong and continues to grow. This event will provide students potentially interested in graduate study in biostatistics and statistics with an opportunity to learn about our programs, to meet with current students, faculty, and program alumni, and to gain some perspective on the many career opportunities this exciting field has to offer. Please find the flyer for the Open House on the last page of the newsletter that can be printed or emailed to anyone that might be interested in attending.
- ◆ Coming in **June 2015**, the Center for Biodefense Immune Modeling (**Dr. Hulin Wu, Co-PI**) will host the NIAID Modeling Immunity for Biodefense program Symposium and Summer School in Computational Biology. The goal of these events is to promote the understanding and use of computational modeling approaches in immunology research, and provide training in mathematical/computational modeling techniques to computational immunologists. Follow <https://cbim.urmc.rochester.edu/education> for details as plans are developed.



2013 Yakovlev Fall Colloquium

On September 19, 2013 the department hosted **David Ruppert, PhD**, Professor of Statistical Science and the Andrew Schultz, Jr. Professor of Industrial Engineering from Cornell University, as the guest speaker for the 2013 Yakovlev Fall Colloquium - sixth in the series. Professor Ruppert lectured on "Fast Covariance Estimation for High-Dimensional Functional Data".

Pictured here from the left are **Robert Strawderman**, Department Chair, **Nina Yakovlev**, and **David Ruppert**.

Nina Yakovlev sent a note on November 29, 2013 stating that **Nina and Andrei's** son, **Yuri**, with an early application, had been accepted to the **Rochester Institute of Technology**. Yuri is a 2013-2014 Senior this year at Honeoye Falls-Lima High School. Also, at the end of his 11th year, Yuri was awarded the RIT Medal for Computing and a scholarship. A proud moment for both Yuri and Nina and they send a thank you for all the direct and indirect support.

2013 and 2014 Colloquia

In addition to the Yakovlev Fall Colloquium and the Charles L. Odoroff Memorial Lecture, the department has hosted the following invited speakers:

- ◆ On March 28, 2013, **Lei Lu, PhD**, an associate professor with the Department of Preventive Medicine at Northwestern University Feinberg School of Medicine, spoke on "Flexible Modeling of Cost Data."
- ◆ **Brent Johnson, PhD** visited the department on April 18, 2013. An associate professor in the Department of Biostatistics at the Rollins School of Public Health at Emory University, Brent spoke on "Efficient and Optimal Estimation of a Marginal Mean in a Dynamic Infusion Length Regimen."
- ◆ On June 4, 2013, **Siddhartha Dalal, PhD** (1975 alumnus), who was invited to attend the Graduate Student Society Career Day, also presented a talk on "Revolutionizing Policy Analysis Using "Big Data" Analytics." Dr. Dalal is an adjunct professor at RAND Corporation, Columbia University and a research professor at Rutgers University DIMACS Center.
- ◆ On October 24, 2013, **Richard J. Chappell, PhD**, professor in the Department of Statistics and the Department of Biostatistics and Medical Informatics at the University of Wisconsin, spoke on "Delta what? Choice of Outcome Scale in Non-Inferiority Trials."
- ◆ **Yuanjia Wang, PhD**, an associate professor in the Department of Biostatistics at Columbia University Mailman School of Public Health, spoke about "Statistical Learning for Complex Data: Targeted Local Classification and Logic Rules" on November 7, 2013
- ◆ On November 23, 2013, **David Matteson, PhD**, an assistant professor in the Department of Statistical Science at Cornell University, spoke on "A Spatio-Temporal Mixture Model for Point Processes with Application to Ambulance Demand".
- ◆ **Douglas E. Schaubel, PhD**, a professor in the Department of Biostatistics at the University of Michigan, spoke of "Estimating the Average Treatment Effect on Mean Survival Time when Treatment is Time-Dependent and Censoring is Dependent" on January 23, 2014.
- ◆ On March 6, 2014, **Russell Taki Shinohara, PhD**, an assistant professor at the University of Pennsylvania, Perelman School of Medicine, presented the "Statistical Techniques for the Normalization and Segmentation of Structural MRI".

2013 and 2014 Colloquia - continued

- ◆ **Jacob Bien, PhD**, an assistant professor in the Department of Biological Statistics and Computational Biology and the Department of Statistical Science at Cornell University, spoke about “Convex Banding of the Covariance Matrix” on March 27, 2014.
- ◆ On April 10, 2014, **Jim Ramsay, PhD**, a professor emeritus with the Psychology Department at McGill University, came to the department and talked of “Linear Differential Equations: Their Statistical History, Their Roles in Dynamic Systems, and Some New Tools”.
- ◆ **Brian S. Caffo, PhD**, a professor in the Department of Biostatistics at Johns Hopkins University, presented “Teaching Statistics for the Future, the MOOC Revolution and Beyond” on May 15, 2014



25th Charles L. Odoroff Memorial Lecture

John D. Kalbfleisch, PhD, Professor Emeritus from the University of Michigan, was the speaker for the 25th Charles L. Odoroff Memorial Lecture held on Thursday, April 25, 2013. Professor Kalbfleisch lectured on “Randomization and Re-randomization in Clinical Trials.”

Pictured to the left is **John D. Kalbfleisch, PhD** with **Setta Odoroff**.



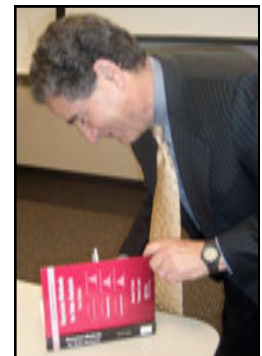
Professor Kalbfleisch graciously signs his books that we have in the Charles L. Odoroff Library located within the department.

26th Charles L. Odoroff Memorial Lecture



Setta Odoroff is standing with **Thomas A. Louis, PhD**, the Associate Director for Research and Methodology at the United States Census Bureau and a professor of Biostatistics at the Johns Hopkins Bloomberg School of Public Health. Professor Louis spoke on “Research at Census, with Links to Biostatistics” on May 1, 2014.

Pictured right: Professor Louis signs our copy of his book, “Bayesian Methods for Data Analysis” for the Odoroff Library.



Summer Family Picnic

Our annual picnic was held on Friday, August 16, 2013 at Seneca Park in the Wegman's Lodge and was attended by 87 adults and 27 children. It was a beautiful day at the park. Volleyball games and soccer matches were played by many. Dinosaur Bar-B-Q catered for us again and was enjoyed by everyone.



2013 Summer Family Picnic—continued



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NEWS FROM AROUND THE WORLD

Kelly Zou, PhD (1997 alumna and student of the late **W. Jackson Hall, PhD**), Director of Statistics at Pfizer, Inc., has been asked to serve as Chair of the Committee of Presidents of Statistical Societies (COPSS) Awards Committee for the upcoming 2014 year. Kelly will represent ENAR. The COPSS Awards are jointly sponsored by the American Statistical Association, the Institute of Mathematical Statistics, the International Biometric Society ENAR, the International Biometric Society WNAR, and the Statistical Society of Canada. Before she was asked to serve as the chair for 2014, she was also recently appointed to serve on the committee for three years. Kelly proclaims she will do her best to serve the statistical community as a committee member. Also, Kelly has co-authored *Patient-Reported Outcomes: Measurement, Implementation, and Interpretation* (Chapman & Hall/CRC Biostatistics Series).

Siddhartha Dalal, PhD (1975 alumnus and student of the late **W. Jackson Hall, PhD**) at AIG, Inc. has accepted a new position as VP of Advanced Research and Technology, at AIG, Inc. He reports that it is a very exciting position and the task is enchanting; trying to transform the insurance industry using the latest advances in research as well as jointly creating new directions with others for transformational research. Typical areas would include data analytics, risk analytics and management, computing algorithms and architectures, sensors and sensor management, OR, finance, service creation, behavioral economics, etc. AIG has recently created a Science Unit which has hired close to 100 researchers with advanced degrees. As well as advancing research, a part of the agenda would be to create and foster a number of strategic research relationships with universities and research labs across the world. Along with his work at AIG, Sid continues to teach at Columbia University and also work with the US Army on their Army Science Board.

Jong-Hyeon Jeong, PhD (1996 alumnus and student of **David Oakes, PhD**) at the University of Pittsburgh in the Department of Biostatistics was promoted to full professor effective September 1, 2013.

Lili Tian, PhD (2001 alumna and student of **Govind Mudholkar, PhD**) received her letter from the President of the University of Buffalo promoting her to Professor effective September 1, 2013.

Aiyi Liu, PhD (1997 alumnus and student of the late **W. Jackson Hall, PhD**) at the National Institute of Child Health and Human Development was Co-Chair of the Program Committee that organized the 2013 ICSA-ISBS Joint Statistical Conference in Washington, DC on June 9-12. Alumni from the Department of Biostatistics and Computational Biology gathered for a reunion.

Yan Ma, PhD (2008 alumnus and student of **Xin Tu, PhD**) has taken a position in the Department of Epidemiology and Biostatistics in the School of Public Health at George Washington University starting September 2014.

Tao Lu, PhD (2011 alumnus and student of **Hulin Wu, PhD**) is an assistant professor in the School of Public Health at the University of Albany.

Xiang Liu, PhD (2012 alumna and student of **Hua Liang, PhD**) holds a position as visiting assistant professor in the Pediatric Epidemiology Center at the University of South Florida. Prior to this she was a research statistician at Abbott Laboratories in Chicago, IL.

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DEPARTMENT OF BIOSTATISTICS AND COMPUTATIONAL BIOLOGY



OPEN HOUSE FOR PROSPECTIVE GRADUATE STUDENTS

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**SATURDAY
NOVEMBER 1, 2014**

8:30 AM – 3:00 PM

Lunch will be provided

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ONLINE REGISTRATION REQUIRED by October 17

<https://statx.urmc.rochester.edu/BiostatOpenHouse2014/Registration.aspx>