

NORTH DAKOTA
STATE UNIVERSITY

SPECIAL
POINTS OF
INTEREST

- **2012 Graduating Students**
- **Statistics Scholarship recipients**
- **McNair Scholars**
- **Faculty/Staff of the department**
- **NDSU Actuarial Club**
- **Valley News Live with the Department of Statistics**
- **Red River Valley Statistics Conference**

FACULTY &
STAFF

Dr. Rhonda Magel

Dr. Ron Degges

Dr. Seung Won Hyun

Dr. Megan Orr

Mrs. Tatjana Miljkovic

Dr. Gang Shen

Dr. Yarong Yang

Dawn Halle



NORTH DAKOTA STATE UNIVERSITY

SPRING 2013

2012 Graduating Students

Bachelor of Science-Statistics

Jarrett Hart
Sonya Hills
Tyler Hlibichuk
Aaron Josephson
Rebecca Maier
Mathew Odden
Michael Price
Isaac Saville
Grant Spears
Ashley Wheeler

Certificate- Statistics

Wesam Abuhammad
Talal Almeelbi

Certificate- Statistics-continued

Julie Fudge
Febina Mathew
Elvis Ndembe
Erin Nyren-Erickson
Anuradha Vegi
Anthony Waldenmaier

Master of Science-Applied Statistics

Kyal Brandt
Travis Dockter
Joshua Nelson
Christopher Olson
Michael Hemmer
Zhuangli Wang



HP Kuang Scholarship

The Department of Statistics awarded Patrick Bjerke and Aaron Josephson the H.P. Kuang Scholarship. Patrick is currently a senior working on his B.S. in Mathematics/Statistics with Preactuarial Option. In December 2012, Aaron received his B.S. in Mathematics/Statistics with Preactuarial Option and a minor in Accounting. He is currently working on a graduate degree at NDSU in accountancy. Congratulations to all awardees! Recipients are selected by a committee in the department based on their statistics courses they have taken and GPA at NDSU.

McNair Scholar

Scot Jones is a senior at NDSU majoring in Statistics. He is currently working with Dr. Rhonda Magel to identify factors which influence wins and losses in NBA basketball games. Models estimating the probability of a particular team winning a series based on seven games are developed. Predictions are made for the playoffs.

Dr. Rhonda Magel
Department Chair



Dr. Ronald Degges
Assistant Professor of Practice



Dr. Seung Won Hyun
Assistant Professor



Welcome from the Chair

During the 2012-2013 academic year, the Department of Statistics welcomed two new faculty members, Dr. Megan Orr, and Dr. Yarong Yang. Dr. Megan Orr received her Ph.D. in 2012 from Iowa State University. Dr. Yarong Yang received her Ph.D. in 2010 from Northern Illinois University and then served for two years as a post doc at Sanford University. They have each written a little about themselves in this newsletter.

The Department of Statistics recently received approval to offer a Ph.D. in Statistics with emphasis in Sports Statistics. Graduate students in this program will be serving an internship with a sports team in athletics at NDSU. Students will also be required to write a disserta-

tion in sports statistics. Research is currently being conducted in NFL and NCAA football, NHL hockey, NBA basketball, NCAA basketball, European soccer, and golf.

The Department of Statistics is getting ready to hold the 3rd annual Red River Valley Statistics Conference on May 1, 2013. Dr. Megan Orr is presenting the keynote address and over 30 students are involved in presenting results from their research. The names of presenters and titles of talks from the 2nd annual Red River Valley Conference are given in this newsletter.

On a personal note, I am getting ready to run my 9th marathon (4th Fargo marathon). As of this writing (April 22nd), we have not even had our first 50 degree day yet this year in Fargo. Hopefully, we will get there soon without a lot of

flooding.

New Entry – We finally got our first 50 degree day of the year (and also 60 degree day) on April 26, 2013. On April 27, 2013, we got our first 70 degree day of the year. My daughter Shaina, an NDSU student, recruited me to go with her that day on the first FM Zombie 5K run. Members of the NDSU ROTC served as the Zombies. Where else but in the FM area would you be running from Zombies through 20 yards of 8 inches of ice water, go through lots of mud and trees, go up and down hill, and go through 100 yards of 5 inch deep snow on a 70 degree day. It was a lot of fun. Great job men and women in NDSU ROTC!!!!

Good luck on all of your endeavors. Keep in touch!!!!!!

Dr. Ron Degges, Assistant Professor of Practice

Since completing my Ph.D. in May 2011, I have been teaching various courses in the department of Statistics. I have taught Stat 461/661: Regression Analysis in addition to Stat 330, 331 and Stat 460/660. For the non-majors I have taught Stat 725 and 726 both in class

and online. I have been coordinating the graduate teaching assistants in lecture and in labs for Stat 330. I have served on about 4 masters committees the last two years. I have also participated in a study pilot for the Turning Point Technologies clicker and helped the university

switch to this new clicker software which has replaced the old PRS units. With the Turning Point clickers, we can collect data more easily and administer quizzes. Questions can be multiple choice, True/False, fill in the blank, short answer or a numeric response.

Dr. Seung Won Hyun, Assistant Professor

Dr. Seung Won Hyun recently published in the *Computational Statistics and Data Analysis* with M. Yang and N. Flournoy on "A Procedure for Finding an Improved Upper bound on the Number of Optimal Design Points" and had a paper appearing in the *Statistics in Biopharmaceutical Research* on "Optimal De-

signs for a Probit Model with Quadratic Term". He also submitted his recent work about designs for estimating the ED50 to the *Statistics in Biopharmaceutical Research*, and it is under review by the journal. Dr. Hyun and Dr. Yang joined the IDEa-CTR grant proposal as co-workers. The grant was

submitted to NIH to create a research infrastructure for supporting pediatric clinical and translational research in North and South Dakota, and it is under review now. Dr. Hyun and his wife welcomed their first child this past Valentine's Day. They had a healthy baby girl.

Dr. Megan Orr, Assistant Professor

Dr. Megan Orr is a new faculty member in the Department of Statistics. She graduated from Iowa State University in August 2012 with a Ph.D. in Statistics. Her research interests include the analysis of gene expression data and multiple testing for high-dimensional data. Dr. Orr recently had an article ap-

pear in the *Journal of Agricultural, Biological, and Environmental Statistics* entitled "Estimating the Number of Genes that are Differentially Expressed in Both of Two Independent Experiments." She will soon be submitting another manuscript for peer review that introduces an improved method for cal-

culating q-values under certain conditions. Additionally, in Fall semester 2013, she will be teaching an introductory biostatistics course for Masters of Public Health graduate students all over North Dakota.

Dr. Megan Orr

Assistant Professor



Dr. Gang Shen, Assistant Professor

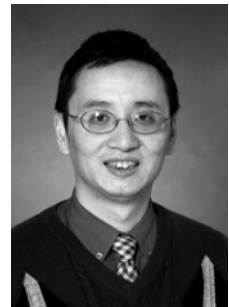
My current research focuses on the change-point problem and non-parametric approaches for diverse statistical problems. My work on

"Empirical Likelihood Inference of a Change-Point" was accepted by a peer-reviewed journal. My collaborative work with Dr. Volodymyr Melnykov on

"Clustering Through Empirical Likelihood" was published by *Computational Statistics & Data Analysis*.

Dr. Gang Shen

Assistant Professor



Dr. Yarong Yang, Assistant Professor

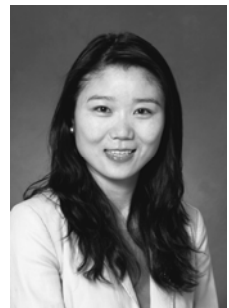
Dr. Yarong Yang graduated from Northern Illinois University in 2010 with a Ph.D. in Mathematical Sciences. Before joining the Department of Statistics at

NDSU in August, 2012, Dr. Yang was a postdoctoral research fellow in the Department of Environmental Engineering at the University of California Berkeley.

Dr. Yang's research interests fall broadly in Bioinformatics, Geostatistics, Machine Learning, Bayesian Analysis and Inverse Modeling.

Dr. Yarong Yang

Assistant Professor



Dawn Halle Academic Assistant

Another year has past since our last newsletter. It has been a very busy year. We have 2 new faculty members and many new graduate teaching assistants/students this year. We are currently working on getting our 3rd Annual Red

River Valley Statistical Conference organized. There is a lot of work that goes into this by everyone and it is worth all the effort. It is a great experience for our students.

At home, my 3 children keep me busy too. Parish

(15) is involved in band and track; Savanna (13) is involved with volleyball and Just for Kix; and Isaac (9) is involved in Cub Scouts. Also, my husband will be finishing up his AAS as a Licensed Practical Nurse in May.

Dawn Halle

Academic Assistant



"When one door of happiness closes, another opens; but often we look so long at the closed door that we do not see the one which has been opened for us." —

Helen Keller

Mrs. Tatjana Miljkovic
Lecturer



“Success is getting
and achieving what
you want.
Happiness is
wanting and being
content with what
you get.” —
Bernard Meltzer

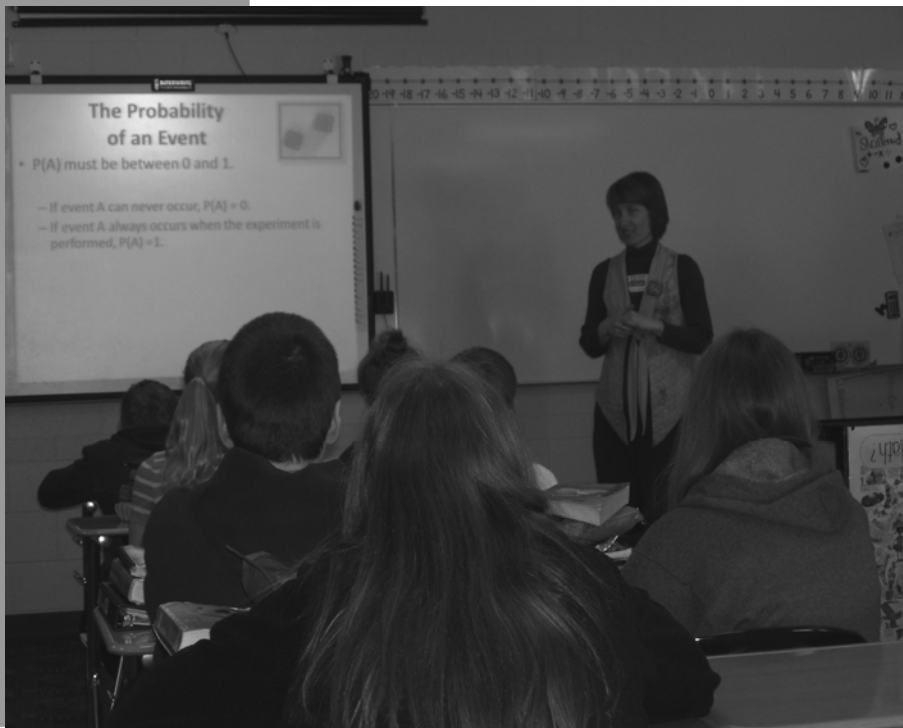
NDSU Actuarial Club News by: Tatjana Miljkovic, Lecturer

Actuarial Club students have been engaged in a number of different activities. In fall, students took a two day trip to the Twin Cities. On the first day of the trip the students attended the U of M Financial and Actuarial Mathematics Career Fair, where there were twenty four potential employers. On the second day of the trip the students visited a variety of companies including: Securian, Towers Watson and Thrivent Financial. They had the chance to speak with Chief Actuaries, Vice Presidents, and Consulting Actuaries of the respective companies.

Eight students in the Actuarial Club participated in a *Predictive Modeling Competition* in the fall semester. A local sub competition for Minnesota and North Dakota university students was hosted by Gross Consulting, an actuarial consulting firm in Minneapolis. The challenge was to develop a statistical model to predict census mail return rates by Census block group level of geography. The Census Bureau will use the top model in the competition for planning purposes for future census and demographic sample surveys. The students of the Actuarial Club were placed in the top half of local sub competition.

Our Club continues to host monthly presentations. On November 29th, 2012, Jim Wynstra, Actuarial Director, FSA, MAAA and Luke Brehmer, ASA, MAAA., from Blue Cross & Blue Shield of North Dakota spoke about Affordable Care Act and how the health care actuaries are preparing for this reform. They also talked about how this reform was boosting employment for actuaries in the health care sector.

On January 22nd, 2013, Joseph Paul, FSA, MAAA, Vice President of Corporate Market Operations for Midland National Life Insurance spoke with our students how 4% withdrawal rate from retirement plans is no longer a safe rule of thumb due to low-yield world we are currently in. He challenged students to conduct research on this topic. He also gave valuable advice on how to become successful in the actuarial field and obtain an entry-level actuarial job.



Above Left: Tatjana Miljkovic, Lecturer teaching the basic concepts of probability to 7th graders at Carl Ben Eilson on March 25, 2013.

Above Right: Rhonda and her daughter Shaina after the FM Zombie Run on April 27, 2013 showing their “survivor” chains.

Valley News Live with the Department of Statistics

Sam Unruh, graduate student in statistics, and Dr. Rhonda Magel, appeared on Valley News Live in March, 2013. They presented a basketball equation to estimate the point spread of an NCAA Division 1 basketball game based on various in-game statistics. Their appearance was right before the start of March Madness.

Joe Roith, Joe Long, and Jennifer Johnson, graduate students in statistics, and Dr. Rhonda Magel appeared on Valley News Live in January, 2013, to discuss the upcoming SuperBowl Game. A football equation for the game between the Baltimore Ravens and the San Francisco 49ers was presented. The equation could be followed throughout the SuperBowl and actually was followed on the newscast while playing a preview game between the Ravens and the 49ers using Madden computer version.

*“We all need
someone who
inspires us to do
better than we
know how.”
— Anonymous*

Red River Valley Statistics Conference

The Department of Statistics at NDSU hosted the Second Red River Valley Statistics Conference in April 2012. Dr. John Reber from Concordia gave the keynote address; Dr. Volodymyr Melnykov served as the conference proceedings editor; Dr. Gang Shen and Dr. Seung Won Hyun served as session chairs. Dawn Halle coordinated the food and the rooms and she spent much of the day running back and forth between the Department and the conference rooms. Several students made posters on their research for the conference and others gave talks. A list of those giving talks and the titles of their talks are given below along with those who submitted posters. The Third Annual Red River Valley Statistics Conference is scheduled to be held at NDSU in May, 2013.

Presenter	Title
Dr. John Reber	Communications from the Front Lines: Problems from Statistical Consulting
Kyal Brandt and Joe Long	An Introduction to Data Analysis in Sports
Travis Dockter	Optimal Designs for the Hill Model with Three Parameters
Deanna (DeDe) Schreiber-Gregory	Current Health Trends and Risk Behavior Analysis in American Youth
Christopher Olson	Using Entropy as a Criterion for Variable Reduction in Cluster Data
Josh Nelson	A Modified Approach to K-Means Using Mahalanobis Distances
Michael Price	Does Football Momentum Translate into Points?
Scot Jones	Examining factors that affect point spread in NBA basketball games
Michael Hemmer	Nonparametric Test for the Umbrella Alternative in the Randomized Complete Block and Balanced Incomplete Block Mixed Design
Poster	Title
B.D. Madurapperuma, P.G. Oduor, L. Kotchman	Markovian Approximation and Optimum Statistical Inference of Land-Cover Change at a Transient Watershed: Ramifications on Vulnerability of Arboreal Ecosystems
Courage Mudzongo	Understanding Child Labor in the 21st Century: A Focus on Malawi and Tanzania
Mieko Griffin	Synchrony in Lek Behavior of Male Sharp-tailed Grouse

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DONATIONS

The Department of Statistics wishes to thank all donors who have contributed to our scholarship programs and to the department. You are making a significant difference in the lives of our students and to North Dakota State University.

✂

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