



# ALUMNI NEWSLETTER

SUMMER 2015

MATHEMATICS & COMPUTER SCIENCE  
UNIVERSITY OF MISSOURI – ST. LOUIS

<http://www.umsl.edu/mathcs>

## LETTER FROM THE CHAIR

My Dear Friends,

Welcome to this year's Alumni Newsletter. I hope you all have had a great year since you read the last issue.

This has been another busy and productive year for many of us. Our department continues working hard to enhance its Mathematics and Computer Science programs and its service to the campus through the service courses. In Computer Science, we have just added three new undergraduate certificate programs: the Certificate in Internet and Web, the Certificate in Mobile and Ubiquitous Computing, and a joint Certificate in Cybersecurity with the Business School. In Mathematics, we have added a new Statistics option to the Ph.D. program. The PhD program, now with three options: Mathematics, Statistics, and Computer Science, is currently called "Doctor of Philosophy Program in Mathematical and Computational Sciences." We have also added some lower division courses, like Pre-Calculus for example, and expanded the list of online courses. Dr. Janikow will update you with more details later in this newsletter on the exciting changes in our Computer Science programs.



We welcomed two new colleagues joining the Department last year. Jianli Pan, a fresh new Ph.D. from Washington University in St. Louis, joined the department as an Assistant Professor in Computer Science with expertise in Internet architecture and cloud computing. Antonio Cardenas, with a Ph.D. degree in Computer Science from the Arizona State University, joined the department as an Assistant Teaching Professor. We also have four colleagues got well-deserved promotions last year: Sanjiv Bhatia was promoted to Full Professor, Nevena Maric to Associate Professor, and Jennifer Shrensker and Nazire Koc to Associate Teaching Professors.

Please enjoy the newsletter Emily and her committee put together, and join us at the picnic at the beginning of the fall semester and a hike during the beautiful fall season.

With all my best wishes,  
Haiyan Cai

## **COMPUTER SCIENCE UPDATES**

### **from our Associate Chair, Cezary Janikow**

- This past year was the first year for two new CS faculty members: Jianli Pan, Ph.D. 2014 Washington University, as new assistant professor, and Antonio Cardenas, Ph.D. 2010 Arizona State, as new teaching assistant professor. Mark Hauschild, Ph.D. 2013 UMSL, continued as visiting teaching professor and was recently hired as a Non-Tenure Track Faculty member starting with the department in Fall 2015.
- We had a number of new elective courses for the first time: iOS Apps, Advanced iOS Apps, Advanced Information Security, and Android Development Fundamentals, taught some by our faculty others by expert adjuncts. All of the above have been now changed to standard courses and will be repeated on rotation. In addition, the existing Machine Learning course was taught for the first time, and another new course in Cloud Computing is set to run in Fall 2015.
- We proposed three new certificate programs: Mobile and Ubiquitous Computing, Internet and Web, and Cybersecurity (graduate and undergraduate, jointly with Department of Information Systems). All are awaiting state approval, scheduled to start Fall 2015.
- We held our first timed open programming competition, which attracted about 40 students.

## **MEET NEW FACULTY MEMBER**

### **JIANLI PAN**

Jianli Pan is originally from Jiangxi, China. In 2004, He earned his Master of Science degree in Information Engineering from Beijing University of Posts and Telecommunications, and then came to the United States to further pursue his education. He attended Washington University, earning both a Masters degree (2010) and a Ph.D. (2014) in Computer Engineering.

Jianli has specialized in computer networks, internet architecture, cloud computing, internet of things, smart energy, and smart homes. He is researching the cutting-edge internet and computing technologies, investigating the future possible innovations and applications, and finding ways to apply these new technologies to change everyone's daily living style.

Outside of his research, Jianli enjoys playing tennis, fishing, and other outdoor activities. When asked what his favorite thing was about UMSL, he replied, "We have a group of very friendly professors and staff in the department. I enjoy working with them a lot." We are so excited to have him as a new member of our department, and we are enjoying working with him too.



## MEET NEW FACULTY MEMBER ANTONIO CARDENAS

Antonio Cardenas is originally from Los Mochis, Sinaloa, Mexico. He studied Electronic Engineering at the Technological Institute of Los Mochis, and then went on to earn a Master's degree in Computer Science at the Ensenada Center for Scientific Research and Higher Education in Baja California. Upon receiving his Master's degree, Antonio moved to the United States, attending Arizona State University, where he earned his Ph.D. in Computer Science (2010).

Antonio's area of expertise includes Randomized and Approximation Algorithms, Distributed and Parallel Computing, Combinatorics, and Network Security and the Sybil Attack. He explains his research this way:

In Computer Science Peer-to-peer systems are known to be vulnerable to the Sybil attack. The lack of a central authority allows a malicious user to create many fake identities (called Sybil nodes) pretending to be independent honest nodes. The goal of the malicious user is to influence the system on his/her behalf. In order to detect the Sybil nodes and prevent the attack, a reputation system is used for the nodes, built through observing its interactions with its peers. The construction makes every node a part of a distributed authority that keeps records on the reputation and behavior of the nodes. Records of interactions between nodes are broadcast by the interacting nodes and honest reporting proves to be a Nash Equilibrium for correct (non-Sybil) nodes.

In my research is argued that in realistic communication schedule scenarios, simple graph-theoretic queries such as the computation of Strongly Connected Components and Densest Subgraphs, help in exposing those nodes most likely to be Sybil, which are then proved to be Sybil or not through a direct test executed by some peers.

Outside of his research, Antonio is married and has two young children. He enjoys running cross-country races, and he likes to watch science and history documentaries. He is a fan of George Washington, Abraham Lincoln, Benito Juarez, Simon Bolivar and other patriots who fight for the freedom of their people. His favorite thing about UMSL is that he can interact with people from all over the world. We are very happy that he has joined our faculty.





## MARYKE & TJAART

Graduating from our department this spring were husband and wife team Maryke and Tjaart van der Walt. Originally from South Africa, this couple has been married since 2010. We would like to congratulate them both and wish them luck as they set out on the next part of their American adventure!

### MARYKE

After earning both her Bachelor's and Master's degrees from Stellenbosch University in South Africa, Maryke and husband Tjaart moved to the US in 2013 so that Maryke could pursue her Ph.D. in Mathematics at UMSL.

Her area of research is signal processing. "You can think of something like a music signal that consists of different parts (different melodic lines), and the idea is to separate the signal into its different components, just by analyzing the original, mixed-up signal. It's a very active research field in applied mathematics at the moment, and it has other application areas as well, like separating biomedical signals," Maryke explains.

This fall, Maryke will be starting a postdoc as an assistant professor at Vanderbilt University in Nashville, TN. "I feel excited and nervous and privileged and humbled at the same time! I'll be teaching two courses each semester, and I'm hoping to join a research group there as well. I'm looking forward to experiencing a different part of the States and meeting new people!"

"I really enjoyed my time at UMSL. I am specifically grateful for the opportunity I had to teach as much as I did. I gained a lot of experience, which proved to be quite valuable in my post-doctoral applications. Besides, I absolutely love teaching, so I had a great time."

### TJAART

Tjaart van der Walt graduated this spring with his Master's in Computer Science. Tjaart was born in Brits, a small agricultural town in the heart of South Africa. In 2002, he received his Bachelor's in Computer Science from Potchefstroom University. Since then, Tjaart has worked as a software developer in a variety of settings, from a small IT startup to a large government contractor.



Initially, moving to the US was a trying time for Tjaart as he was unable to secure a US work visa. After eight frustrating months, he received a research assistantship from the Department of Mathematics and Computer Science and a tuition scholarship from the UMSL Graduate School. With the help of this financial support, he was able to enroll for the Master's in Computer Science. Tjaart has been an active participant in campus life at UMSL, volunteering with international students and helping other students with their projects. He was also a volunteer at the recent IEEE International Conference on Pervasive Computers and Communications held in St. Louis in March 2015. He was one of our great students and also was selected to be the Student Marshal during the Spring 2015 commencement ceremony.

## YOU ARE INVITED!

Please join us for our two annual fall events. We would love to see you!

### MATH & CS PICNIC

**Saturday, September 12<sup>th</sup> at 12pm**

Shaw Park in Clayton  
North Shelter

The department will provide meat for grilling, all condiments and paper/plastic items. Please bring a beverage, side dish or dessert.

A map of Shaw Park can be found by clicking [here](#) and Google directions by clicking [here](#).

Contact [rossem@umsl.edu](mailto:rossem@umsl.edu) for more information.



Alum and Grill Master John Leighton with wife Julie and Haiyan Cai at the 2014 Math & CS Picnic



Mother and daughter alumni duo Jan and Rebecca Lange at the 2014 Andalafte Hike

### ANDALAFTE HIKE

**Saturday, October 24<sup>th</sup> at 9:30am**

River Scene Trail  
Castlewood State Park

Details will be posted at  
<http://www.umsl.edu/mathcs>  
closer to the hike date or you can contact  
[rossem@umsl.edu](mailto:rossem@umsl.edu) for more information.

## JOIN US ONLINE!



@UMSLMathCS



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## SCHOLARSHIPS

Congratulations to all of our 2015 recipients!

### Andalafte Memorial Scholarship

Jacob Taylor

### Raymond and Thelma Balbes Scholarship

Victoria Schwent     Matthew Self

### Computer Science Scholarship

Tom Eaton

### Mathematical Sciences Alumni Scholarship

Dan Gray     Brett Lindsay     Hugh McMonigle     Vimal Patel  
Jennifer Rawls     Andrew Santon     Victoria Schwent  
Matthew Self     Garrett White

### Joseph M. and Mary A. Vogl Scholarship

Kayla Harmon



## SOCIAL HAPPENINGS



Above: Jianli Pan, alum Michael Maher, Doug Peterman, and Wayne McDaniel  
Right: Faculty member Jennifer Shrensker's darling youngest daughter, Annalie

**Math & CS Picnic  
Shaw Park  
September 2014**



**Andalafte Hike  
Castlewood Park  
October 2014**



Top left: Jeff Garrison (carrying newborn son Asher, who will celebrate his 1<sup>st</sup> birthday this September!), alum Ashley Neal, alum Genell Garrison, Chris Billo, and alum Ryan Seman.  
Bottom left: What a great looking group!  
Above: Alum Chris Gund with his family





## PI DAY 2015



The Math Club held its annual Pi Day festivities in the Pilot House this year. Computer science major Omar Ismail retained his title of Pi Champion and wowed the crowd gathered by reciting 2,020 digits! He was also featured on [UMSL Daily](#). (Photos by August Jennewein)



### MATH COMPETITION

The **Andalafte Mathematical Competition**, sponsored by the Department of Mathematics and Computer Science, was instituted in 2006 to inspire an attitude of scholarship and excellence in mathematics. The exam is accessible to students having a preparation of at least Calculus II. Three prizes are offered. The winners of the 2015 competition were Jere Duhon (First Place), Yifei Xu (Second Place), and Raphael Deschamps and Matthew Self (tied for Third Place).

### COMPUTER SCIENCE COMPETITION

The **Open Programming Competition**, sponsored by the Department of Mathematics and Computer Science, was held as a timed competition for the first time this year. The exam was open to all UMSL students. The winners of the 2015 competition were Dan Wilder (First Place), Alexander Pierce (Second Place), Sharmila Thippabhotla (Third Place), and Vasudeva Cherukumilli, Drew Ryder, and Patrick McNamara (tied for Fourth Place).

## ALUMNI SPOTLIGHT

This year we again asked you to provide us with a more in-depth look at your lives and careers post-graduation.

### JESSICA BLEILE

BA Mathematics, 2013

Currently, I am working towards my M.S. in Applied Mathematics at the University of Missouri (MU). In particular, I am studying the recovery formula for solitary wave profiles from pressure measurements made on a flat bed under the direction of my advisor, Dr. Samuel Walsh. I plan on graduating in May 2016.

During the summer and winter breaks, I work as a student intern at a government agency under the Department of Defense, where I employ many of my technical and analytical skills acquired at both UMSL and MU. I plan on converting to full time employment with the agency following my graduation.



### JOHN BROCATO

BA Mathematics, 1996

I have been teaching 7th grade pre-algebra at Northwest Valley Middle School in House Springs, MO since 2001. Prior to that, I taught at Bishop DuBourg High School and in the Wright City R-2 School District. My students have won a number of math honors including contests at Florissant Valley Community College and Jefferson College. This past school year my 7th graders finished 7th in the state of Missouri on the annual Missouri Math League competition.

Majoring in math at UMSL gave me a broad depth of math knowledge and perspective. My knowledge of geometry deepened by taking the non-Euclidean course with the late Dr. Andalafte. I picked up on Dr. McDaniel's enthusiasm for number theory and try to work in number theory concepts with my students as often as possible. Through observations and student teaching in several different school settings, my understanding of students' differing needs deepened. It pleases me that some of my former students have continued their education at UMSL.

### WE NEED YOUR GIFT!

If you would like to make a donation to the department please fill out this form and mail it to:

University of Missouri – St. Louis  
Department of Mathematics & Computer Science  
307 Express Scripts Hall (MC 61)  
One University Boulevard  
St. Louis, MO 63121-4400

Enclosed is my gift of

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