The PSM Alumni and Graduation
# CHRONICLE

The Voice of the PSM | Volume 2018, Issue 1

## In This Issue



### FIVE MINUTE PROJECT (5MP)

*- STUDENT COMPETITION OPPORTUNITY -*

PSM Student Project presentations will be showcased in the **5MP Student Competition** at the 2018 National Conference

Click **HERE** to review the guidelines and complete the nomination form.

Nomination are ***due August 12***.

*Highlight your program and nominate an outstanding student today!*

### REGISTRATION NOW OPEN

**2018 NATIONAL CONFERENCE**

***"Enhancing Advocacy for PSM Programs"* Nov. 8-9**

**PRE-CONFERENCE WORKSHOP**

***"Connecting with Students"* Nov. 7**

**VIEW Programs and REGISTER TODAY!**

## Message from the President

Graduates of Professional Science Master's (PSM) programs have a competitive workforce advantage. Their deep STEM content coupled with rich professional experiences place them in high demand with employers.

The student profiles in this inaugural *PSM Alumni and Graduation Chronicle* demonstrate the full range of this competitive advantage. Some graduates received job offers from their host company directly following an internship. Some followed leads either from their PSM programs or from their own searches to secure new jobs. Yet others advanced existing career paths and earned their PSM while employed. A few alumni used the special features of the PSM to enhance either a doctorate they already held or applications to doctoral programs. PSM programs are attracting students from across the globe. Many PSM graduates remain employed in the state where they receive their PSM degree, innovating in their workplaces and contributing to local economies. PSM graduates also report building meaningful networks that support them professionally and personally for years to come.

Enjoy this volume, and share these stories with prospective students, university leaders, and employers who should know and support your outstanding PSM programs and graduates.

Yours,

*Courtney H. Thornton, Ed.D.*
*President, NPSMA*

## Effective Science Communication Exemplified by PSM Student Talks: Inaugural Six-Minute Presentations (6MP)

Science communication is "transferring critical scientific findings to various audiences with the intention of informing decision-making processes"[1]. Learning how to communicate effectively to both other scientists and nonscientists, and how to help your audience understand your findings, regardless of their backgrounds, is becoming a necessary skill in a scientific career[2]. PSM programs generally include this important "transferable skill"[3] to the benefit of their students; this is one of the defining features of the PSM since many other types of graduate programs may not include formal and experiential training in developing science communication skills.

Fast forward to the Three Minute Thesis (3MT) begun at the University of

(Continued on pg. 2)

PSM STUDENT TALKS (6MP) (cont. from pg. 1)

Queensland in 2008 to build students' "academic, presentation, and research communication skills"[4]. The 3MT competition concept has grown widely and is now a multinational event in universities around the world, now joined by other well-established programs such as Ignite Purpose or Pecha Kucha. All are designed to foster communication skills and encourage research presentations in a short and concise manner using non-technical terms to keep audiences engaged. Many universities across the US offer variants of the 3MT emphasizing research and scientific communication skills.

The 2017 National Professional Science Masters' annual conference in Phoenix, Arizona featured for the first time in NPSMA history, an innovative science communication session, the Six-Minute Presentation (6MP). The 6MP provided an opportunity for PSM students to effectively explain completed capstone/internship projects to conference attendees, an intelligent but non-specialist audience. Students chosen to participate were asked to give a lively 6-minute presentation using no more than six slides. Presentations also included reasons for choosing specific projects, the relevance and application of the project outcomes to both student and organization goals, and the connection between successful completion of projects and training received in their PSM programs.

**Anya Hunter (6MP Second Place Winner)**, graduated from Colorado State University in the spring of 2018 with a Professional Science Master's Degree in Zoo, Aquarium and Animal Shelter Management. She is currently working at the Woodland Park Zoo in Seattle, Washington, as their Volunteer Engagement Coordinator

*Carnivores spend a great portion of their time in the wild acquiring and consuming food. This time consuming and physically wide-ranging activity is difficult to replicate in captivity. This study tested the behavioral outcomes of feeding social carnivores different forms of food. The aim of the study was to see if different forms of food changed activity levels and if it affected kinship relationships within the animal's social groups. Implementing this feeding enrichment program increased activity levels and behavioral diversity in captive social carnivores, while allowing them to develop the stronger social bonds that are necessary for overall animal welfare quality.*


**Molly Corder (6MP First Place Winner)**, graduated from Colorado State University in the spring of 2018, earning a Professional Science Master's Degree in Zoo, Aquarium and Animal Shelter Management. Molly is spending this summer completing internships at the Denver Zoo and Smithsonian Global Health Program, and traveling in Europe. She has accepted positions with the Smithsonian Conservation Biology Unit and with George Mason University where she will pursue her doctorate in Environmental Science and Public Policy, with a research focus on endangered species reproduction and conservation medicine.


*Assisted reproductive techniques such as artificial insemination (AI), gamete and embryo cryopreservation and estrus synchronization are routinely used to improve reproductive success in the agricultural livestock industry. These assisted reproductive techniques have been modified to aid in the preservation of endangered hoof stock species but are still not widely used. Such efforts will be paramount in the preservation of several of the world's most valuable species. This project focused on the use of fecal hormone analysis to document the length of the estrous cycle and assess the synchronization protocol. Expected outcomes for include applications in global anoa populations under managed care. The long-term goal is to develop an assisted reproductive protocol that provides reliable and consistent results.*

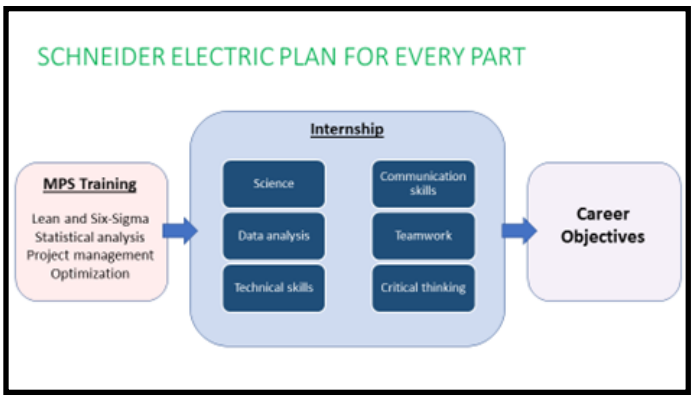
(Continued on pg. 3)

PSM STUDENT TALKS (6MP) (cont. from pg. 2)

**Caryn Massey**, a student at Northern Arizona University, expects to graduate in August of 2018 with a Professional Science Master's Degree in Climate Science and Solutions. She is currently completing research as a Junior Research Fellow at the Universidad De Concepcion in Chile before seeking a job.

*Many corporations want to limit their influence on climate change by setting a greenhouse gas emissions reduction target that is line with climate science, but they are not sure how. Using learned skills such as database management, and greenhouse gas inventories and weaving together a business background with technical science skills, this project worked on developing unique solutions to some of the world's most pressing economic problems.*


**Fatemeh Dalilian**, graduated from Middle Tennessee State University in Dec. 2017 with a Professional Science Master's Degree in Engineering Management. She plans to pursue her Ph.D.




*The business objective of the Plan for Every Part (PFEP) is reducing sacrificed productivity by having a controlled inventory reduction and eliminating material shortages at the same time.*

*PFEP project steps included collecting required data about every part, calculating replenishment frequency based on historical data for each part, calculating optimized quantity for these parts based on analyzed data, giving recommendations to improve current state and finally, implementing the recommendations. The project resulted in elimination of three lineside racks and more than fifteen percent inventory reduction on the line.*

**Brigitte Lim** graduated from Arizona State University in December 2017 with a PSM degree in Solar Energy Engineering and Commercialization. She also won the Sustainable Development Solutions Network Youth Special Prize in the 2017 Geneva Challenge. Brigitte is now back in the Phillipines where she works as a Business Development Officer for Japan Solar.

*The Philippines is a tropical country in South East Asia whose installed solar photovoltaic (PV) capacity has grown from 1 megawatt (MW) in 2013 to approximately 765 MW in 2016. This opens the opportunity for a Solar Network for Energy Education and Employment (Solar N3E). The capstone project presents a business plan for Solar N3E, a Philippines-based enterprise that utilizes the ongoing government funded Sustainable Livelihood Program, and opportunities in the reformed national education system, to develop human capacity and employment opportunities for the growing solar energy industry.*


*(Continued on pg. 5)*

PSM STUDENT TALKS (6MP) (cont. from pg. 3)

In conclusion, participants at 6MP enhanced their communication skills and messaging abilities. These competencies should serve them well in teamwork and reporting in their work environments, and in garnering leadership and financial support for future projects and initiatives. Participation in the 6MP benefits all participants, even if they are not award winners. Future NPSMA annual conferences will continue to offer a similar competition. For more information on how your students can participate in this exciting program at the 2018 NPSMA Annual Conference in Arlington, VA, click on this link https://npsma.wildapricot.org/resources/Programs%20Natl%20Conf/2018-NPSMA-5MP-Guidelines.docx.

[1] Eise, Jessica. (2016). Science communication vs. communication. Retrieved from: https://jessicaeise.com/2016/06/14/science-communication/.

[2] Urpa, Lea (2017). Good Science Communication: Benefits for the Audience and the Scientist. Retrieved from https://www.fimm.fi/en/blog/good-science-communication-benefits-audience-and-scientist.

[3] Strausbaugh, Linda, & Harkins, Heidi. (2017). 20 Years and Counting: How has PSM Training in "Transferable Skills" changed?. *The Innovator*. Retrieved from https://www.professionalsciencemasters.org/sites/default/files/the_innovator_curated_issues_fall_2017_vol_10_issue_3.pdf.

[4] The University of Queensland, Australia (Updated March, 2018). Three Minute Thesis. Retrieved from https://threeminutethesis.uq.edu.au/about.

***Contributed by Ramona Mellott,*** *PhD, Dean and Professor at Northern Arizona University served on the Board of Directors for NPSMA (2015-2017). She also chaired the 2017 conference program committee for the 8th Annual Conference of the NPSMA held in Phoenix, Arizona in November 2017 and conceived the original idea of the 6MP competition. Special thanks to* ***Dr. Jennie Willis****, PSM Program Coordinator at Colorado State University, who provided valuable assistance in the development of the inaugural 6MP program and to our judges, NPSMA President-Elect* ***Scott Herness****, NPSMA Associate Vice President* ***Deborah Silver****, Commission Faculty Director* ***Jim Sterling****, and Commission Steering Committee Co-Chair* ***Michael Teitelbaum****. Finally, thanks to student contestants and their PSM program directors for willingness to participate.*

# Alumni Profiles

## TANNAZ RAFIZADEH

MASTER OF BIOTECHNOLOGY: A PROFESSIONAL SCIENCE MASTER'S (2017)
CALIFORNIA STATE UNIVERSITY SAN MARCOS

### The Knowledge and Skills to Broaden a Career

When Tannaz Rafizadeh was looking for a graduate biotechnology program, she learned that most schools had completed their application process for the year. However, not only was CSUSM still accepting applications to the Master of Biotechnology: A Professional Science Master's degree, it offered a distinct program as well. Rafizadeh was intrigued by the opportunity to pursue advanced study in science and to develop high-level business skills that would boost her career prospects.

The cohort system, in which students advance through the program as a group, was of particular interest to Rafizadeh, who had moved from Tehran, Iran, to the United States in 2014. "Having class with the same people for two years … we were a community," Rafizadeh says.

Through the program's semester-in-residence—where students work in a life sciences business to address a scientific issue, project or problem—Rafizadeh combined her new interest in business with her scientific expertise at BioLegend in San Diego. Not only did she conduct research and testing as part of the product development process, she also performed a marketing analysis of the product being developed.

The semester-in-residence led to the first step in her new career in the United States. BioLegend hired Rafizadeh before she graduated, first part time and finally as a full-time research associate in product development.

"If you want to work in industry, you need to know about accounting and you need to know about marketing and other skills," Rafizadeh says of the business proficiencies she added to her résumé. "You may learn those skills in industry, but we learned them before even going into industry.

"I think differently from my co-workers," she adds. "And I know I have the knowledge and the skills to broaden my career. I think this will open opportunities for me in the future."

*Contributed by Al Kern, former director of CSUSM PSM Program in Biotechnology.*

## RYAN MELLOTT

PROFESSIONAL SCIENCE MASTER'S IN INDUSTRIAL MATHEMATICS (2003)
MICHIGAN STATE UNIVERSITY

### Business Training for Solving Real-World Problems

When Ryan Mellott applied to the PSM in Industrial Mathematics (Master of Science in Industrial Mathematics or MSIM) program at Michigan State University, he wished to avoid a doctoral program and focus on an early entry to industry. Ryan's primary goals were to gain mathematical and statistical skills, and business training for solving real-world problems.

Ryan points to professional development beyond the MSIM disciplinary curriculum as being key to his journey to industry success. The rigor of weekly assignments in his first industrial math core course was substantially more demanding than other courses. This helped Ryan understand and develop the work ethic that was required to pass his sequence of actuarial exams. The industrial project required in the second MSIM core course provided valuable insight into industry and added highlights to his resume. His delivery of the high-quality project reports (e.g., content, clarity, design, and formatting) expected in the MSIM PSM program directly carried over to his earliest days of career and set Ryan apart as a highly effective communicator.

Ryan's career path at Jackson National Life Insurance Company has been successful and rewarding. Through his work ethic and commitment to developing expertise in his discipline, Ryan transitioned from an intern position to Head of Product Development within an impressive six-year window. His role in continually providing enterprise-wide value and taking on increasing responsibilities has been unique and excellent. He currently holds the title of Vice President, Actuarial, and continues to lead the product design and pricing function for Jackson, in addition to leading/supporting a wide range of activities.

Ryan continued to keep in touch with the MSIM program where he serves on the Industrial Advisory Board. He has attended social occasions within the program and provided career advice to students on how they can jump start a successful industrial career by leveraging their talents and the skills developed through the PSM program.

*Contributed by Peiru Wu, Director, PSM in Industrial Mathematics, MSU.*

## MEGAN RILEY

MASTER OF PROFESSIONAL SCIENCE IN TOXICOLOGY (2016)
UNIVERSITY OF NORTH CAROLINA, CHAPEL HILL

### A PSM Degree Enhances a Ph.D. Degree

Megan Riley earned her doctoral degree in biological sciences from the University of South Carolina. While there, she realized that her true passion was toxicology and she started reviewing programs that would allow her to apply her background in biology to her newfound research interest. She was attracted to the University of North Carolina at Chapel Hill's Master of Professional Science in Toxicology for its strong science-based coursework, emphasis on real-world business skills and the strategic location of Research Triangle Park.

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MEGAN RILEY (cont. from pg. 5)

Although many students enrolled in UNC-Chapel Hill's three PSM programs do not have an advanced degree, Dr. Riley recognized the many benefits of the PSM for individuals with graduate degrees. "From persuasive presentations to stakeholder management, the business acumen I gained from these classes has given me an edge, bolstered my confidence and prepared me to succeed in my career beyond graduate school," she said.

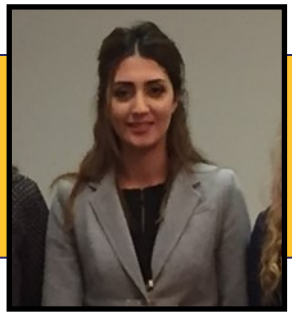
After earning her PSM degree, Dr. Riley joined GlaxoSmithKline as a member of the Future Leaders Program, an initiative designed to introduce promising recent advanced-degree graduates to the pharmaceutical industry. She currently serves as a Clinical Research and Development Epidemiologist at the GSK Vaccines US Research & Development Center, where she designs and oversees clinical trials for a vaccine candidate for pregnant women to protect newborns from a disease that often occurs in early infancy.

Dr. Riley credits much of her professional success to skills such as critical thinking, problem solving and professional communication, which she gained through UNC-Chapel Hill's PSM coursework. "I would strongly encourage all students interested in a non-academic STEM career to take advantage of this program," she said.

*Contributed by Katja Greeson, Graduate Assistant, Professional Science Master's and Graduate Certificate in Business Fundamentals.*

## FATEMEH DALILIAN

MASTER OF SCIENCE IN PROFESSIONAL SCIENCES: ENGINEERING MANAGEMENT (2017)
MIDDLE TENNESSEE STATE UNIVERSITY



### PSM Graduate Improves Manufacturing Techniques

When your internship company offers its lawyers to help ensure that you can secure your work visa and keep working there after graduation, you must be doing something right.

That's what happened with Middle Tennessee State University (MTSU) Master of Science in Professional Science (MSPS) recent graduate Fatemeh Dalilian. Fatemeh's MSPS concentration was Engineering Management, which prepares students for leadership careers in manufacturing and industry. The degree program includes Project Management, Six Sigma, and lean manufacturing, and most students graduate with certifications in all three. These students also take our MSPS Business Core courses–primarily taught by faculty in the Jones College of Business at MTSU–which include management classes such as Leadership and Motivation, Managerial Communication, and the capstone Internship course. For the MSPS program, students must complete a complex, minimum 250-hour internship in industry at the end of their studies.

Ms. Dalilian secured her capstone internship at Schneider Electric, a multinational energy management company with a manufacturing facility in nearby Smyrna, TN. There, she successfully implemented Six Sigma and lean manufacturing techniques to simultaneously reduce assembly inventory while eliminating shortages on the line. Her work and professionalism was given top marks by her manager. As Fatemeh was an international student, several visa issues arose after she completed her internship which required some extensive paperwork to allow her to remain and work for Schneider. Because of her great work as an intern, the company provided legal support to guarantee that she could still work there after graduating.

In November 2018, Ms. Dalilian competed in the 6-minute Project Presentation (6MP) at the NPSMA Annual Conference. The MSPS program is extremely proud of her, and we know that she will go on to do great things (and make lots of money)!

*Contributed by Saeed Foroudastan, Program Director and Associate Dean.*

## CASSIE LOPEZ

PROFESSIONAL MASTERS IN SCIENCE AND ENGINEERING:
ENVIRONMENTAL ANALYSIS (2013)
RICE UNIVERSITY

### PSM Graduate Named Top Young Professional

Cassandra (Cassie) Lopez, a native Houstonian, graduated from Rice University with a BA in Environmental Engineering Sciences (2011) and accepted employment with Burns and McDonnell as a project Environmental Specialist.

To enhance her career she decided to continue her education by joining the Professional Science Master's Program in Environmental Analysis at her alma mater Rice University. During her studies she was not only able to advance her science and engineering knowledge but also enrich her education by taking management and business courses giving her the edge when Chevron picked her as an intern to fulfill the required work experience of the program. After graduation in 2013, Chevron Corporation offered her a full-time position in the Health, Safety, and Environmental (HES) function as a Compliance Assurance Specialist, and since 2015, Cassie has been working as HES Specialist for the Deep Water group at Chevron supporting both onshore and offshore developments for North America Exploration & Production.

In addition to her professional career, Cassie is passionately involved in community activities serving as Club President for the Downtown Houston Toastmasters Club (2016-2017) and engaging and mentoring current Rice PSM students in Lunch and Learns. She has been invited as featured guest speaker to the Federation of Houston Professional Women, she also represented the Rice program at Houston's 2018 CERA Week Conference, and was a member of the Offshore Technology Conference (OTC) Networking Committee for 2018. During her assignment there she also made time to meet up with the Professional Science Master's team at the Rice University booth at the OTC.

Cassie is a 2017 recipient of the top young professionals "30 Under 40" recognition by the area's Leader News, and we look forward to many more challenges this amazing and energized Rice PSM alumni will tackle in the future.

Outside of her successful career, Cassie is also married and in spring 2018 she gave birth to her first born, Gabe. Cassie loves to be active and has participated with her husband in triathlons and other challenging fitness events.

She is very excited to continue her involvement with Rice University, the Environmental Analysis program, its students and the Houston community.

*Contributed by Dagmar Beck, Director Professional Masters in Science and Engineering.*

## JESSICA MARY PECHMANN

PROFESSIONAL MASTERS OF SCIENCE AND TECHNOLOGY:
ENVIRONMENTAL SCIENCE TRACK (2017)
UNIVERSITY OF UTAH

### A Love of Geographic Information System Technology Leads to a PSM and International Career

Jessie became interested in GIS long before graduating from the PMST Program's Environmental Science track with an emphasis on GIS. She completed undergraduate studies at Beloit College (Anthropology major and Environmental Studies and Museum Studies minors). While studying abroad as a college junior in Tanzania, Jessie learned GIS and was hooked on geospatial technology. Jessie worked at the Automated Geographic Reference Center at the State of Utah from 2009 -2017 in various positions, the last being a GIS Project Manager.

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JESSICA PECHMANN (cont. from pg. 7)

Jessie applied to the PMST program because she wanted to earn a master's degree that would complement and enhance her academic and professional background. She wanted a graduate experience that would build upon the diversity of the jobs she had and introduce new topics of interest while developing the technical and business skills she would need. Through the various PMST classes and projects she completed, Jessie was able to identify better what she wanted from a career and also discover what resources and opportunities were available moving forward.

Jessie appreciated numerous aspects of the PMST program, including many of the classes, but what stands out as meaningful in retrospect is how much she enjoyed her cohort and the other people she met while at the University of Utah. Jessie notes that "PMST students are diverse in their backgrounds and interests, which allowed us to learn a lot from each other. Through a shared love of science and learning, we supported each other through the program."

Another aspect of graduate school that Jessie welcomed was a diverse educational option, the opportunity to complete a Graduate Certificate of Sustainability that allowed her to focus her studies more narrowly. The certificate helped Jessie meet people across campus and broaden her campus experience. The Certificate also opened opportunities for a final project/PMST professional experience. Jessie strongly recommends that students investigate available graduate certificates to complement their PSM programs.

Currently, Jessie works for IMPACT Initiatives as a GIS Officer on the REACH Syria team based in Amman, Jordan.

*Contributed by Ray Hoobler, Director, PMST Program.*

## TOM LESTER

MASTER BUSINESS AND SCIENCE (2004)
KECK GRADUATE INSTITUTE

### PSM Alumnus Leads Development of Rare Disease Therapies

The extremely rare disease CLN2 is devastating; the inherited condition affects young children, many die before age 10. Tom Lester, senior director for product development at BioMarin, has been working since 2012 to change this grim outcome. "The program was more emotionally involving than others," he says. "The disease moves so quickly, and the patients are so young. I found it was sometimes okay to cry at work. It was motivating."

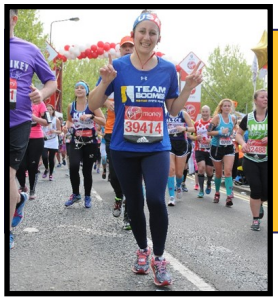
Thanks to the efforts of the cross-functional team Tom leads, children with CLN2 disease are receiving treatment all over the world. BioMarin has introduced the first therapy for CLN2 disease, Brineura, which received FDA approval in 2017. About the enzyme replacement therapy that is delivered directly into the patient's brain, Lester says, "We talk about being innovative, but even for us this was a lot more innovative than most programs. There was never a product like this before."

Lester's success doesn't surprise the KGI faculty who knew him from the MBS program. When Tom joined the MBS program, he was a recent University of Southern California chemical engineering graduate with an interest in biological sciences. Lester cites his Team Master's Project experience and coursework in the MBS program as influencing his success at BioMarin. "It gave me exposure to product development. Taking a pharmaceutical development class was also an eye-opener for me. It really made me well suited for the job I have now. I knew how to see the perspectives of different functions and integrate them."

Lester is involved in the development of other enzyme replacement therapies. After more than a decade at BioMarin, he says, "I don't think I'd ever work outside rare diseases again. It's very tangible. You have a unique opportunity to see the people affected by the disease."

Tom's interests continued to have impact on the MBS program. Although there were no classes on rare disease therapies when he was a student, KGI now has a Center for Rare Disease Therapies and a Rare Disease Club.

*Contributed by James Sterling, Professor, KGI and Faculty Director, Commission on Affiliation of PSM Programs.*



## HEATHER NELSON O'CONNER

MASTERS OF SCIENCE IN APPLIED GENOMICS: A PROFESSIONAL SCIENCE MASTER'S DEGREE (2004)
UNIVERSITY OF CONNECTICUT

### The PSM: Knowledge for Life

Entering the Applied Genomics program, Heather knew she wanted a career in forensic science. However, she couldn't foresee how much her PSM would contribute to both professional and personal lives.

The Applied Genomics degree combined knowledge in the theory and practice of genomics with relevant professional development training. Heather completed a full-time internship as a Forensic DNA Technician working on DNA backlog reduction at the Connecticut State Police Forensic Science Laboratory. Following graduation, Heather was a research scientist at UConn's Center for Applied Genetics and Technology (CAGT), conducting research on forensic markers.

In 2006, Heather was hired as a Criminalist 1B at the NYC Office of the Chief Medical Examiner. She has risen through the ranks to Criminalist IV with supervisory responsibilities. A professional highlight of the past year was making a presentation at the annual meeting of the American Academy of Forensic Sciences.

Heather developed expertise in many aspect of DNA analysis, including that of challenging samples. This led to Heather's participation (with her husband Craig whom she met during her PSM program) in two historical genetics projects, both in partnership with the CAGT and the Connecticut State Archaeologist. These studies were the subjects of BBC and History Channel specials and were covered by hundreds of print and electronic media.

Heather's PSM training plays a role in yet another chapter of her life. Heather learned that her mother has a mild form of cystic fibrosis due to two rare forms of the gene, and that she herself is a carrier of one of these. Thanks to her knowledge of complex genetics, she understood the basis and consequences of the diagnoses. In her spirit of confronting challenges head-on, first-time athlete Heather began training to run marathons to raise money for cystic fibrosis research. This new mission found her running for the Cystic Fibrosis Foundation in NYC marathons and for the Boomer Esiason Foundation in the London Marathon.

Heather Nelson O'Connor reflects the best of the successful PSM graduate: scientific expertise, professional acumen, teamwork, adaptability, resilience, and motivation.

*Contributed by Linda Strausbaugh, former director of the M.S. in Applied Genomics program.*

## ANDREW O'NEILL

PROFESSIONAL APPLIED AND COMPUTATIONAL MATHEMATICS MASTER'S OF SCIENCE (2012)
SUNY BUFFALO STATE

### PSM Degrees Fast-track Professional Opportunities and Personal Growth

In the information-age economy, a degree combining applied and computational mathematics offers great work flexibility. So, PSM graduates Vicki and Andrew chose a year off to travel the world.

After graduating from University of Massachusetts Amherst (B.S. in Mathematics, Minor in Computer Science), Andrew didn't really know what he wanted to do next. Upon moving back home to Buffalo, Andrew had several jobs, including at Elmwood Taco and as a temp at M&T Bank on their Commercial Account team. He manually created audit reports, but after a few weeks automated the process, eliminating eight hours of weekly work. When he asked for and was denied a raise, he quit.

(Continued on pg. 10)

ANDREW O'NEILL (cont. from pg. 9)

Attending graduate school began to sound appealing. So he applied to SUNY Buffalo State's M.S. in Professional Applied and Computational Mathematics (PACM). Andrew completed three internships while excelling in required courses. His first internship at Independent Health found Andrew working on master data management with IBM contractors to make sure they could correctly link data to members. His second internship at SUNY Buffalo State's Geography and Planning department included writing Python code to collect and analyze data from an autonomous submarine and buoys in Lake Erie. Andrew's third internship was at brass manufacturer Aurubis where he modeled data to assess options for cutting costs and eliminating waste. From his internships, Andrew learned about data management and database structure, collecting and parsing raw data from instruments, statistical package R, and conducting exploratory studies.

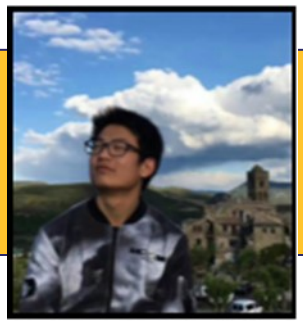
After graduating from PACM, Andrew rejoined M&T Bank in the marketing department. There he met his partner Vicki, who had also completed a PSM degree (North Carolina State University). Almost immediately his team had to execute a major effort to develop a new customer database and Andrew created the first version for the anti-money laundering Bank Secrecy Act. After working on this important project, Andrew was offered a full-time position on the Customer Insights team. Tasked with creating customer lists for advertising, Andrew undertook the email side and automated some tasks. Luckily for Andrew, his versatile professional talents allowed him to continue to seek growth and explore options. He and Vicki decided to move to Seattle where he started his new job at Nordstrom. Andrew worked on Javascript and then on backend systems and building server software.

But even if the pay was very good and the job stable, life is short, so Vicki and Andrew made the difficult decision to quit their jobs and travel the world. They return to the US in July 2018 after over 380 days of travel.

*Contributed by Joaquin Carbonara, PACM Program Chair and SUNY PSM Consortium Director. You may learn more about Andrew and Vicki's journeys at: https://www.notquitevcation.com/.*

## MINGLONG PAN

PROFESSIONAL MASTERS IN SCIENCE AND ENGINEERING
SUBSURFACE GEOSCIENCE (2017)
RICE UNIVERSITY



### International Alumnus Finds Success in His PSM Program

"I grew up in Jingzhou City, China home to the Jianghan Oilfield**,** a city brimming with petroleum culture. I gradually developed a keen interest in geoscience, especially how subsurface geoscience is used in exploration**"**. In 2016, Minglong Pan graduated from Yangtze University with a B.S. in Resource (oil & gas) Prospecting Engineering. During studies there, he enrolled in the "Outstanding Engineers Class" securing an internship at Sinopec to be trained as a petroleum geologist. In the following year, Minglong completed four field studies in South and North China gaining proficiency in geological skills and seismic exploration.

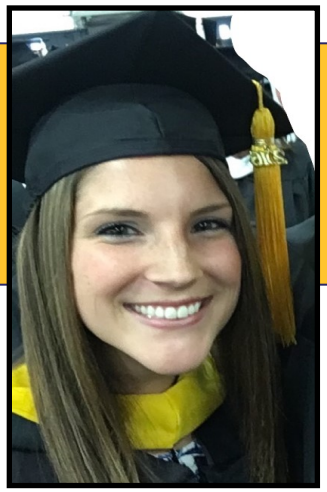
A friend recommended the Subsurface Geoscience program at Rice, and Minglong found that this program was a great fit for his interests and background and would help enrich knowledge not only in geology/geophysics but also in management, business and communication**,** helping him adjust to U.S. culture and its business environment.

Being accepted to Rice University allowed Minglong not only to broaden and advance his education, but also to be provided the opportunities to join the Rice student team in the 2017 Imperial Barrel Competition and the Schlumberger Petro Challenge at Rice, both exciting opportunities to learn more about the industry and make valuable corporate contacts. A work experience is a required part of the Rice SG program, and Minglong secured an internship with the Memorial Park Conservancy Board, and also participated in Rice's Sedimentology Lab researching sandbar migration in the Yellow River in China.

Outside of academic and career interests, Minglong likes staying fit, working out, swimming and playing table tennis with friends. He also enjoys playing guitar and listening to classical music to relax after a busy day!

Last but not least, Minglong is happy to report that his search for a job opportunity in the U.S. was successful. He joined CGG as a Seismic Imaging Analyst after graduation.

*Contributed by Dagmar Beck, Director Professional Masters in Science And Engineering.*



## JENNIFER J. THOMAS

HEALTH CARE GENETICS: A PROFESSIONAL SCIENCE MASTER'S (2016)
THE DEPARTMENT OF ALLIED HEALTH SCIENCES AND THE INSTITUTE FOR SYSTEMS GENOMICS
THE UNIVERSITY OF CONNECTICUT

### Putting the Rabbits Back into the Hat

Jennifer Thomas took a leap from a hobby of showing Holland rabbits, a job, and an acceptance to veterinary school to be the first student enrolled in the University of Connecticut's PSM Program in Health Care Genetics. Jennifer, with a BS in Pathobiology, after working as a vet tech for two years realized she wanted a career change. "I was interested in working in the medical field, but not directly with patients. All my interests seemed to point me towards genetics, although I didn't have much background or many lab skills. The PSM program seemed like the perfect way to obtain the education and technical skills needed to get a job in genetics….and also figure out what exactly I wanted to do!"

Jennifer valued the interdisciplinary and multi-component PSM curriculum; courses, technical training, and professional development. "I found that working in a research lab was probably the most valuable." The Health Care Genetics plan of study includes training in molecular techniques, advanced technologies, and cytogenetics. "I really loved being able to get hands on experience… Even now, my thoughts and ideas are valued because I was exposed to a broad range of experiences, techniques and terminology."

Group activities are emphasized in the Health Care Genetics PLUS courses; "We were all working toward a common goal and coming together to reach it was encouraging." Jennifer finished the PSM program with a clinical internship at Transgenomic® and is now employed as an ASCP certified technologist in the high complexity molecular testing Tumor Profiling Lab at Yale New Haven Hospital toward the goal of helping oncologists choose personalized patient treatments.

Jennifer's recommendations for future students… "… go for it! Especially if you're looking to pursue a PSM degree... it will benefit you now and in the long run…. ". ".. take every opportunity for experience; a wide range of skills will make you a better applicant and even help you decided what your passions are."

*Contributed by Judy Brown, PhD, CG, MB (ASCP), director of UConn PSM Program in Health Care Genetics.*

## ERIC RACKI

PROFESSIONAL SCIENCE MASTER'S IN APPLIED SCIENCE AND TECHNOLOGY (2018)
KANSAS STATE UNIVERSITY, OLATHE

### PSM Develops Leadership Skills

Eric Racki is one of the inaugural graduates of Kansas State University Olathe's Professional Science Masters in Applied Science and Technology. Racki is a seasoned information technology professional with more than 10 years in the field. After completing a bachelor's degree in business administration, he began a career in IT in higher education. He currently is an IT support specialist at K-State Olathe. Racki enrolled in the PSM degree program to further develop his leadership and management knowledge base. He believes that the program has developed his project management skills.

For his PSM capstone project, Racki worked with another PSM graduate, Nate Scherman, and they combined their prior knowledge of IT with STEM knowledge and professional skills they acquired through the PSM program. Scherman's

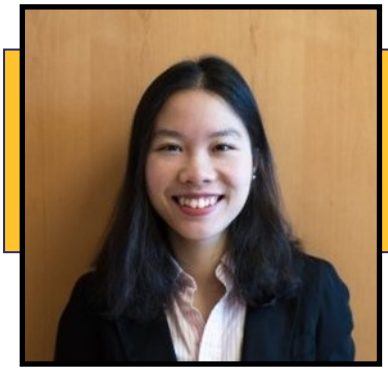
(Continued on pg. 12)

ERIC RACKI (cont. from pg. 11)

capstone project focused on development of an enhanced disaster recovery plan, while Racki's project looked at Continuity of Operations planning. Their projects examined aspects of IT planning in higher education and the food industry.

Racki said that the PSM has expanded his knowledge of animal health and food security, and provided him with a firm STEM foundation. He also believes that the PSM curriculum and capstone experience have positioned him well for future advancement in management and leadership positions.

*Contributed by Rebekkah Stuteville, Ph.D., Teaching Associate Professor, Assistant Dean, Academic Support Services Kansas State University, Olathe.*



## MIRANDA SO

PROFESSIONAL SCIENCE MASTER'S IN DATA ANALYTICS (2018)
RUTGERS, THE STATE UNIVERSITY OF NEW JERSEY

### PSM in Science and Business Offers a Deep and Balanced Education — and Future

After graduating from Vanderbilt University in Tennessee with a Bachelor's Degree in Chemistry, Miranda So went on to a traditional master's degree in Materials Science and Engineering in Illinois. However, she soon realized that she did not want a career in the laboratory. She developed a strong passion for data science and wanted to positively impact the strategic decisions of organizations. Miranda searched for a strong master's program as an alternative to the traditional path on which she was headed. She found Rutgers University's PSM program, which offered a blend of business and science curriculum in their Master of Business and Science (MBS) degree.

Throughout her experience in the PSM program at Rutgers, Miranda took advantage of the program's strong emphasis on professional development, industry interaction, and networking. Rutgers PSM requires that all students attend twelve colloquium events during their time in the program. In addition, the Communication and Leadership course requires students to interview three industry leaders in their field of interest. Due to leadership interview with a contact at Janssen Pharmaceuticals, Miranda landed her first internship in Data Science. She applied natural language processing techniques in Python to optimize normalization of disease concepts to canonical names. During the same year, Miranda worked as a MedMath Tutor for the School of Nursing at Rutgers helping nursing students improve their understanding of dosage and IV calculations and coached them with general mathematical problem-solving strategies.

Miranda's tutoring experience for the Nursing School then led to a role as a Data Services Specialist for Rutgers, in which she developed and taught a 3-Part Workshop Series in Data Analytics using Python. Her commitment to professional development and industry networking led to Miranda's current position as an Associate for an innovative data science company specializing in pharmaceuticals in New Jersey.

*Contributed by Deborah Silver, Ph.D., Executive Director, Professional Science Master's Program, Professor, Department of Electrical and Computer Engineering, Rutgers, The State University of New Jersey.*

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# PSM Certificate Could Give an Advantage for YOUR Students

The PSM Certificate could give an advantage to your students. Students who complete a PSM degree in affiliated programs are eligible to receive a Certificate of Completion that complements their receipt of a diploma from their home institution. Some PSM degrees are designated as such on official student records and on the student diploma. However, many PSM affiliated degrees are officially designated as Master of Science, Master of Engineering, or a degree with another official name. The designation of the degree being an affiliated PSM can be documented for the student through the presentation of a Certificate of Completion that can be generated and shared with the student through the home institution. This can be of particular value to graduates who want to differentiate their PSM degree and to list the designation on their resume, LinkedIn page, or in a job application or cover letter.


In addition to helping the student, the certificates can also be used by the institution, program director, or department to create an opportunity to highlight the PSM student's accomplishments at commencement, a department event, or a graduation dinner. The presentation can help the PSM program establish e*sprit de corps* among students, graduates, faculty, and advisory board employers.

*May 2018 Graduation Dinner for the Rutgers Professional Science Master's Program. Students are holding their National PSM Certificates.*

This complementary service was launched in 2016 with an average of approximately 300 Certificates of Completion presented to PSM graduates each year at 50 institutions.

The Commission on Affiliation of PSM programs administers the distribution of the Certificates of Completion and will work with the home institutions to generate the certificates for PSM graduates. If you are interested in certificates for your students, please send an email to the following address indicating the number of students and the desired date of delivery affiliation@psmcommission.org.

As employers increasingly look for credentials to distinguish job applicants, the PSM Certificate could give an advantage to your graduates!

*Contributed by Jim Sterling, Faculty Director, and Kiriko Komura, Administrative Director, Commission on Affiliation of PSM Programs.*

**The PSM Alumni and Graduation CHRONICLE**

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