



NATIONAL PROFESSIONAL SCIENCE MASTER'S ASSOCIATION
10th ANNUAL NATIONAL CONFERENCE AND WORKSHOP



November 6-8, 2019

University Guest House & Conference Center • Salt Lake City, UT

FINAL PROGRAM

UNIVERSITY GUEST HOUSE & CONFERENCE CENTER





**NATIONAL PROFESSIONAL
SCIENCE MASTER'S ASSOCIATION**

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Welcome!

Welcome to the Pre-conference Workshop for NPSMA! This year's theme is "Engaging Faculty in the PSM." We have several panelists who will present best practices that work on his/her campus or online program and then time to identify other best practices and challenges from workshop participants. By the end of the workshop, we hope that you have identified several strategies that you can take to your home institution to create stronger faculty relationships. And, have contributed best practices, tips, and ideas that might work for others. The pre-conference workshop committee will compile the information gathered throughout the day and have a living document of best practices that can be shared with the PSM community.

I hope you will be engaged and ready to share and learn!



Natalie Bosecker

Pre-Conference Workshop Planning Committee, Chair

On behalf of the 2019 NPMSA conference planning committee, I would like to extend my warmest welcome to Salt Lake City and the University of Utah. This year's conference theme—Professional Science Master's Serving Workforce Needs—was chosen to align with a core mission of the PSM initiative: to prepare individuals for advanced STEM careers, whether that be in an industry, government, or non-profit. Each of us has examples of our students' success, and most of us are looking for ways to increase awareness of the PSM initiative. We hope this year's agenda will provide inspiration as you work to support current and new programs for both current and future students.



Ray Hoobler

Conference Workshop Planning Committee, Chair

General Information

Local Transportation

UTA TRAX is Salt Lake Valley's light rail system. For a detailed map visit the www.rideuta.com/Rider-Tools/Schedules-and-Maps?page=UTA-Home-TRAX.

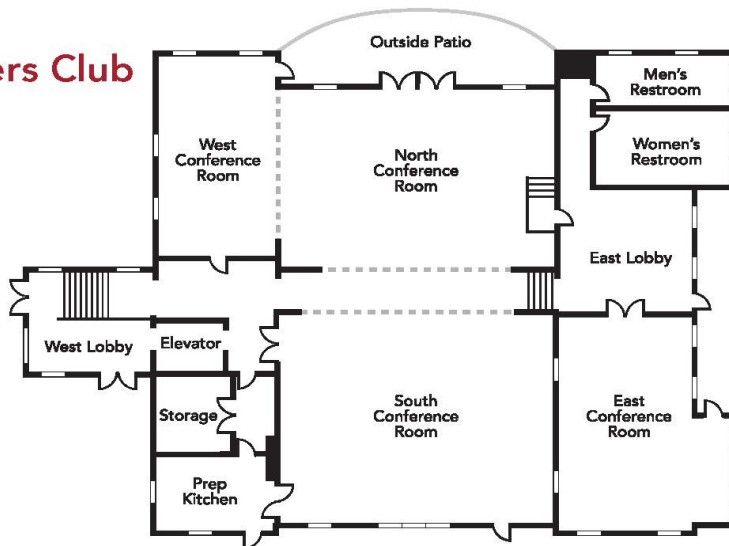
There are several options for taxi and shuttle services. Here is a list of some options available:

- City Cab: 801-363-5550 or 801-363-8400
- Yellow Cab: 801-521-2100
- Express Shuttle: 800-397-0773

Meeting Location

All meeting events will take place at the University of Utah Conference Center, Officer's Club.

Officers Club



Red Butte Garden Tour

Please stop by the Registration Table in the East Lobby to RSVP if planning to attend the Red Butte Garden Tour lead by Derek Payne (University of Utah) starting at 1:00 p.m. on Friday, November 8, 2019.

2019 NPSMA NATIONAL LEADERSHIP Board of Directors

OFFICERS:

Scott Herness, Ph.D., *President*, Vice Provost for Research and Dean, The Graduate School, Montclair State University

Tim Born, Ph.D., *President Elect*, Associate Professor, Associate Dean, Padnos College of Engineering and Computing, Grand Valley State University

G. Bryant Weber, B.S., *Finance Officer*, Utah Retirement System, University of Utah

Gerald B. Grunwald, Ph.D., *Convener*, Dean of the Jefferson College of Biomedical Science, Thomas Jefferson University

Ray Hoobler, Ph.D., *Vice President for Marketing and Outreach*, Director, Professional Master of Science and Technology Program, University of Utah

Deborah Silver, Ph.D., *Vice President for Member Benefits*, Executive Director, Professional Science Master's Program, Professor I, Department of Electrical and Computer Engineering, Rutgers, The State University of New Jersey

Linda Strausbaugh, Ph.D., *Vice President for Publications*, University of Connecticut (Emeritus)

Courtney H. Thornton, Ed.D., *Immediate Past President*, Associate Vice Provost for Academic Personnel and Policy, North Carolina State University

DIRECTORS:

Dagmar Beck, A.B.A., B.A., Director, Rice Professional Science Master's, Rice University

Amber Bloechle, M.S., GIS Online Director, Department of Earth and Environmental Science, University of West Florida

Natalie Bosecker, M.S., Director, Illinois Professional Science Master's Program, University of Illinois

Mark Jakubauskas, Ph.D., Director of Science Programs, Professor, University of Kansas, Edwards Campus

Kristin Kuter, Ph.D., Associate Professor, Department of Mathematics and Computer Science, Saint Mary's College

Avril Robertson, G.Cert. H.Ed., M.Chem., Ph.D., Professor, Director of Biotechnology and Professional Science Master's Degree Programs, School of Chemistry and Molecular Biosciences, University of Queensland, Australia

Inge Wefes, Ph.D., Associate Dean of the Graduate School, University of Colorado Denver | Anschutz Medical Campus

Jennie Willis, Ph.D., Graduate Program Coordinator, Professional Science Master's Degree in Zoo, Aquarium and Animal Shelter Management, Colorado State University

2019 NPSMA NATIONAL EVENTS

Organizing Committees

NATIONAL CONFERENCE PLANNING COMMITTEE

Chair: Ray Hoobler (University of Utah)

Committee Members: Gerald B. Grunwald (Thomas Jefferson University), Albert Kern (California State University San Marcos), Norah McCabe (Washington State University), Derek Payne (University of Utah), Patricia McAllister (NPSMA), Deborah Silver (Rutgers, The State University of New Jersey), Inge Wefes (University of Colorado Denver | Anschutz Medical Campus), Jennie Willis (Colorado State University)

Three Minute Presentation (3MP) Student Competition Co-Chairs: Jennie Willis (Colorado State University), Ray Hoobler (University of Utah)

Ex Officio Members: Jeannie Houts (NPSMA)

NATIONAL WORKSHOP PLANNING COMMITTEE

Chair: Natalie Bosecker (University of Illinois)

Committee Members: Marcel Blais (Worcester Polytechnic Institute), Mark Jakubauskas (University of Kansas, Edwards Campus), Kristin Kuter (Saint Mary's College), Jennie Willis (Colorado State University)

Ex Officio Member: Jeannie Houts (NPSMA)

NPSMA OFFICE

Staff:

Jeannie Houts, Coordinator of Operations

Patricia McAllister, Education Policy Consultant

Contact Information:

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Website: www.npsma.org



Workshop Schedule

FACULTY ENGAGEMENT WITH THE PSM

Wednesday, November 6, 2019

- University of Utah Conference Center -

8:00 – 9:00	Breakfast/Registration (East Lobby/South Room)
9:00 – 9:15 (South Room)	WELCOME and INTRODUCTION Scott Herness , President, NPSMA, Vice Provost for Research and Dean of the Graduate School, Montclair State University Natalie Bosecker , Chair, NPSMA Pre-Conference Workshop Planning Committee and PSM Director, University of Illinois
9:15 – 9:35 (South Room)	SESSION I: Engaging Academic Faculty and Administrators Jennifer S. Shumaker-Parry , Director, Biotechnology, PMST Program, University of Utah <u>Moderator</u> : Natalie Bosecker, University of Illinois
9:35 – 10:25 (South Room)	PANEL: Support and Grow PSM Programs (AKA “Show Me The Money”) Linda Strausbaugh , Professor Emeritus, University of Connecticut David Kieda , Dean of the Graduate School, University of Utah <u>Moderator</u> : Natalie Bosecker, University of Illinois
10:25 – 10:40	BREAK
(South Room)	SESSION II: Building Brand Awareness & Culture with Your Most Important Advocates — Faculty! <u>Moderator</u> : Mark Jakubauskas, University of Kansas, Edwards Campus
10:40 – 11:20 (South Room)	PANEL/TABLE DISCUSSION: On Campus Elizabeth Friedman , Director, Professional Master’s Programs and New Initiatives, Illinois Institute of Technology Lindsey Hodge , Program Administrator, Professional Science Master’s Degree Programs, Rice University Jennie Willis , Graduate Coordinator for the PSM degree in Zoo, Aquarium and Animal Shelter Management, Colorado State University

Workshop Schedule

FACULTY ENGAGEMENT WITH THE PSM

Wednesday, November 6, 2019

- University of Utah Conference Center -

11:20 – 12:00 (South Room)	PANEL/TABLE DISCUSSION: On-line Kristen Kuter , Associate Professor, Mathematics Computer Science, Saint Mary's College Pamela Hardin , Associate Director of the Center for Teaching and Learning (CTLE) at the University of Utah
12:00 – 1:00	LUNCH (South Room)
1:00 – 1:40 (South Room)	SESSION III: Faculty CAN Recruit PSM Students! Anirudh Chowdhary , Professional Science Master's Program Coordinator, Grand Valley State University Cynthia Bainton , Administrative Operations Manager for the Biotechnology PSM, Northeastern University <u>Moderator</u> : Marcel Blais, Associate Department Head, Mathematical Sciences, Worcester Polytechnic Institute
1:40 – 2:40 (South Room)	SESSION IV: Using the Lean Canvas Model to Understand and Promote the Critical Role of Faculty in PSM Programs Ray Hoobler , Director of Professional Master of Science and Technology Program, University of Utah
2:40 – 3:00	BREAK
3:00 – 3:50 (South Room)	SESSION V: What are YOUR Biggest Challenges When Engaging Faculty? INTERACTIVE DISCUSSIONS <u>Moderator</u> : Natalie Bosecker, University of Illinois
3:50 – 4:30 (South Room)	Group Report Back from ALL Table Topics/Burning Issues
4:30 – 5:00 (South Room)	Workshop Summary and Action Items/Evaluation <u>Moderator</u> : Natalie Bosecker, University of Illinois
5:00 – 6:00	Early Registration for National Conference (East Lobby)
6:00	All workshop attendees are invited to dinner at Porcupine Pub & Grille (<i>not a sponsored meal</i>). Meet in Guest House Lobby.

Conference Schedule

PROFESSIONAL SCIENCE MASTER'S SERVING WORKFORCE NEEDS

Thursday, November 7, 2019

- University of Utah Conference Center -

7:00 – 8:25	Breakfast/Registration (Easy Lobby/West Room)
8:30 – 8:55 (South Room)	NPSMA WELCOME Scott Herness , President, NPSMA, Vice Provost for Research and Dean of the Graduate School, Montclair State University
9:00 – 9:25 (South Room)	UTAH WELCOME and OPENING REMARKS Daniel Reed , Senior Vice President of Academic Affairs, University of Utah <u>Introduction:</u> Tim Born, NPSMA President-Elect, Grand Valley State University
(South Room)	PLENARY SESSION: Professional Science Master's Serving Workforce Needs
9:30 – 9:50	Mark Cafferty , President & CEO, San Diego Economic Development Corporation
9:55 – 10:15	Julie Simmons , VP Education for the Women Tech Council
10:20 – 10:40	Royal DeLegge , Director, Environmental Health Division Salt Lake County
10:40 – 10:55	BREAK
11:00 – 11:30 (South Room)	PANEL DISCUSSION (Daniel Reed, Mark Cafferty, Julie Simmons, Royal DeLegge) <u>Moderator:</u> Ray Hoobler, University of Utah
11:45 – 12:45 (South Room)	LUNCH: Table Topics (North Room)
(South Room)	AFTERNOON SESSIONS What makes a PSM Program? How to make PSM's Resonate!
1:00 – 1:25	Jennie Willis , Colorado State University
1:25 – 1:50	Dagmar Beck , Rice University
1:50 – 2:15	Deborah Silver , Rutgers, The State University of New Jersey <u>Moderator:</u> Inge Wefes, University of Colorado Denver Anschutz Medical Campus

Conference Schedule

PROFESSIONAL SCIENCE MASTER'S SERVING WORKFORCE NEEDS

Thursday, November 7, 2019 (continued)

- University of Utah Conference Center -

2:15 – 2:30	BREAK
2:30 – 2:50 (South Room)	<p>Aligning PSM Affiliation with the NASEM/CGS Guidelines for Master's Education Linda Strausbaugh, University of Connecticut (Emeritus) Tim Born, Grand Valley State University <u>Moderator</u>: Norah McCabe, Washington State University</p>
2:50 – 3:30 (South Room)	<p>PSM4RST8 REVIEW: Presentations Elements of a PSM Elevator Pitch Inge Wefes, University of Colorado Denver Anschutz Medical Campus Modeling Regional Partners Gerald Grunwald, Thomas Jefferson University Extending the SLACK Amber Bloechle, University of West Florida Platform to PSMs Kristin Kuter, St. Mary's College - Notre Dame</p>
3:30 – 3:45 (South Room)	<p>PANEL DISCUSSION (Inge Wefes, Gerald Grunwald, Amber Bloechle, Kristin Kuter) <u>Moderator</u>: Courtney Thornton, North Carolina State</p>
1:00 – 3:45 (East Room)	<p>STUDENT WORKSHOP: Applied Professional Development The Story of a Successful Job Hunt Jeff Vanek, Director of Human Resources Hogle Zoo Time Management Shad Slaughter, Vice President of Operations Xlear Inc. <u>Moderator</u>: Ray Hoobler, University of Utah</p>
3:45 – 4:00	BREAK
4:00 – 5:00 (South Room)	<p>Three Minute Presentation (3MP) Student Competition <u>Moderator</u>: Jennie Willis, Colorado State University</p>
5:30 – 7:30	RECEPTION (North Room)
7:30	DINNER ON YOUR OWN

Conference Schedule

PROFESSIONAL SCIENCE MASTER'S SERVING WORKFORCE NEEDS

Friday, November 8, 2019

- University of Utah Conference Center -

7:00 – 8:25	Breakfast/Registration (Easy Lobby/North Room)
8:30 – 8:55 (South Room)	NPSMA Annual Members Meeting
9:00 – 9:25	BREAK
(South Room) 9:00 –9:40	PLENARY SESSION: Institutional Models for Administration and Financing of PSM Programs Shelia Thomas , Assistant Vice Chancellor, Self-Support Strategy and Dean, Professional and Continuing Education, California State University System Aaron Guy , Associate Dean of Extended Learning, California State University, San Marcos David Kieda , Dean of the Graduate School University of Utah Natalie Bosecker , PSM Director, University of Illinois
9:40 –10:00 10:00 – 10:20	
10:20 – 10:45 (South Room)	PANEL DISCUSSION (Shelia Thomas, Aaron Guy, Dave Kieda, Natalie Bosecker) <u>Moderator</u> : Gerald B. Grunwald, Thomas Jefferson University
10:45 – 11:00	BREAK
(South Room) 11:00 – 12:00	SECOND SESSION: How to Effectively Create/Use an Advisory Board PANEL DISCUSSION Mary Nelson , Research Scientist with the Huntsman Cancer Institute Collin Burton , Data Scientist with PlurasightT Pat Shea , Educator, attorney <u>Moderators</u> : Elizabeth Friedman, Illinois Institute of Technology, Dagmar Beck, Rice University
12:15 – 12:30 (South Room)	Summary/Evaluation
12:30 – 1:30	LUNCH (North Room)
1:30 – 5:00	FIELD TRIP: Red Butte Garden Tour

Workshop Presenters

Wednesday, November 6, 2019

(Listed in order of date/presentation)

WELCOME and INTRODUCTION

Scott Herness, NPSMA President, Montclair State University, was appointed Vice Provost for Research and Dean of the Graduate School in 2018. He previously served as Interim Vice Provost for Graduate Studies and Dean of the Graduate School at The Ohio State University. He also held appointments as Associate Dean of the Graduate School, Chair of the Division of Oral Biology, Chair of the Oral Biology Ph.D. program, and Chair of the Interdisciplinary Neuroscience Graduate Studies Program at Ohio State.

Scott received his BS degree from the University of California, Irvine and the Ph.D. from the Florida State University. Prior to his arrival at The Ohio State University, he was Assistant Professor at the Rockefeller University in New York City and Associate Professor at the Indiana University School of Medicine on the Muncie campus.

His research interests are in the field of sensory neuroscience where he pursued a NIH- and NSF-funded investigation into the cellular and molecular biology of the peripheral gustatory system. He served as President of the Association for Chemoreception Sciences, the international society dedicated to the scientific study of the chemical senses, and received the Anjinomoto Junior Faculty Research Award (1999) and the International Flavors and Fragrances Award for Outstanding Research on the Molecular Basis of Taste (2011). He has served on numerous review panels for the NIH and NSF.

Natalie Bosecker is the Director of the Illinois Professional Science Master's Program at the University of Illinois at Urbana-Champaign. She has served in that role for the past 5 years and previously coordinated PSM majors for the College of Agricultural, Consumer and Environmental Science at Illinois since the program's inception in 2009. There are six on-campus PSM majors at Illinois, including Agricultural Production, Bioprocessing & Bioenergy, Food Science & Human Nutrition, Geographic Information Science, Plant Biotechnology and Technical Systems Management. The first on-line PSM major is in the proposal stage. Natalie's career includes 18 years in industry communications & marketing.

Natalie is a single mom to her 11-year old daughter, Dakota, who was adopted from foster care. (You can too! Ask her how.) This is Natalie's first year on the NPSMA National Board.

Workshop Presenters

SESSION I: Engaging Academic Faculty and Administrators

Jennifer S. Shumaker-Parry, is the Director of the Biotechnology Track and a member of the Executive Committee of the Professional Masters in Science and Technology Program at the University of Utah. Dr. Shumaker-Parry also is a Professor of Chemistry at the University of Utah. She teaches undergraduate and graduate courses on analytical chemistry, biotechnology and nanomaterials. The research efforts of her group focus on novel nanomaterials and platforms in catalysis, spectroscopy, and chemical and biological sensing. After obtaining her B.S. in Chemistry at the University of South Dakota, she worked in the Analytical Development Laboratory for Novartis Pharmaceuticals Corporation in Lincoln, Nebraska. Her doctoral dissertation at the University of Washington focused on measuring protein interactions with vesicles and DNA using SPR spectroscopy and microscopy methods, including building one of the early SPR microscopes. As a National Science Foundation Mathematical and Physical Sciences Directorate Distinguished Post Doctoral Research Fellow, Dr. Shumaker-Parry worked at the Max Planck Institute for Polymer Research in Mainz, Germany where she focused on the development of plasmonic materials for spectroscopy applications. She received an NSF CAREER Award in 2009, the ACS PROGRESS/Dreyfus Lectureship and the ADVANCE Young Scientist Lectureship (University of Arizona) in 2008, and the R.W. Parry Teaching Award in 2016.

PANEL: Support and Grow PSM Programs (AKA “Show Me The Money”)

Linda Strausbaugh, currently the NPSMA Vice President for Publications, previously served as Director of Strategic Initiatives at the National Professional Science Master's Association and chaired its Workforce Advisory Council. She has been involved in local and national PSM initiatives for more than two decades. She was the project director for UConn's Alfred P. Sloan Foundation award to establish its multi-track PSM programs and for its NSF S-STEM award to provide scholarships for qualified PSM students. The founding director of UConn's PSM in Applied Genomics, she has worked closely with scientists and leadership from the non-academic sector, and coordinated research experiences, internships and employment opportunities for close to one hundred students. Linda has both designed and offered “plus” professional development training in laboratory management, communication, and leadership. At the national level, Strausbaugh was a member and chair of the Council of Graduate School's National Advisory Board, participated in the PSM Stakeholder's Group, and made presentations to the National Academy

Workshop Presenters

of Sciences/National Research Council task force on Masters in the Natural Sciences, the FASEB Board of Directors for Science Policy, and the NASEM Committee on Revitalizing STEM Education for the 21st Century. Dr. Strausbaugh also participated in workshops for the NPSMA, BIO International, state system-wide events, and CGS Dean's Conferences. For more than 30 years she directed externally funded research projects in genetics and genomics, and served as the head of the genetics graduate field of study for most of that time.

David Kieda is a Professor of Physics and Astronomy, and Dean of The Graduate School at the University of Utah. Dean Kieda was one of the original founders of the University of Utah's PMST program, and has served as Science Instrumentation Track Director, curriculum chair, and Interim Executive Director. As Dean of the Graduate School, Prof. Kieda continues to advocate for the ongoing support for the students and faculty of the PMST program, and to grow the importance of the program to the State and Intermountain West.

Dean Kieda received his undergraduate degree in Physics from MIT in 1982, working in the field of superconductivity and superconducting devices. He received his PhD in Physics from U Penn in 1989, working in the field of high energy astrophysics. His main field of research is experimental astrophysics, with an emphasis on the development and use of optical techniques for the observation astrophysical sources of cosmic and gamma-rays, and for stellar intensity interferometry. He has directly supervised twelve PMST students.

He is a Fellow of the American Physical Society and holds more than thirty patents on electrical and medical device technology. Dean Kieda received the Utah Governor's Medal for Science and Technology and the University of Utah's Distinguished Scholarly and Creative Research Award in 2013.

SESSION II: Building Brand Awareness & Culture with Your Most Important Advocates — Faculty!

Mark Jakubauskas is the Director for Research and Innovation at the University of Kansas Edwards Campus. He was the founding director for the Professional Science Masters at KU, developing two PSMs (Environmental Assessment and Environmental Geology), as well as several graduate certificates and a 4+1 bachelors-masters pipeline to the PSM. He has been an NPSMA National Board member since 2018.

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PANEL/TABLE DISCUSSION: On Campus

Elizabeth Friedman is an expert on Professional Science Master's Best Practices. She is Director of Professional Master's Degrees and New Initiatives for the College of Science at Illinois Tech, Chicago. Her portfolio includes programs across the disciplines of applied mathematics, biology, chemistry, computer science, and physics. Elizabeth is a founding member of the NPSMA and served on the steering committee (2005-2007). She has held various positions on the Board of Directors (2007-2011), including NPSMA Board President (2010). In 2015 she earned the NPSMA Board of Directors award for outstanding contributions to the association.

Elizabeth received her PhD and MA in near eastern studies from the University of Chicago, studied archaeology at the University of Haifa, and holds a BA in anthropology from the University of Virginia. She is an adjunct professor of anthropology at Illinois Tech where she teaches students to explore the city of Chicago through a historical and cultural lens, and by visiting some of the fascinating neighborhoods that make up the city. In her spare time, Elizabeth trains in the martial arts.

Lindsey Hodge currently manages the Professional Science Master's degree programs at Rice University where her roles include recruitment endeavors, admissions oversight, academic record management, and PSM student advising. Additionally, her responsibilities include creating and implementing targeted marketing plans along with building and supporting partnerships with industry representatives interested in recruitment and employment of PSM students. Lindsey was recently awarded the Career Champion award from Rice University for engaging, connecting and empowering Rice students to find and make their place in the world.

Ms. Hodge earned her Bachelor of Science Degree in Advertising through the Texas Creative sequence with a Business Foundations Certificate from The University of Texas at Austin and is currently pursuing a Master's of Education in Higher Education Administration. Lindsey actively serves as committee member for the Professional Development and Strategic Initiatives Committee for the Texas Chapter of NAGAP. She is also an active member of the Career Coaching Circle at Rice University.

As a big sister mentor to her "little," Lindsey has been a supporter of the Big Brothers Big Sisters program for over 3 years. Recently, she has gained certification in mental health first aid where she trained to provide help to people

Workshop Presenters

who experience problems such as depression, anxiety, psychosis and substance abuse disorders. Overall, Ms. Hodge is sincerely devoted and extremely passionate about the benefits of higher education for student's personal empowerment while finding academic and professional success.

Jennie Willis, Ph.D., teaches undergraduate and graduate courses in animal behavior and oversees the Professional Science Master's program in Zoo, Aquarium and Animal Shelter Management at CSU. She and her graduate students conduct applied research to benefit the lives of animals in captive settings. Her special research interest is in improvement of adoption rates of cats through enrichment, evaluation and training. She has been in charge of the PSM program since 2013. She was instrumental in creating new courses to fill the needs of students in the program and re-designing the curriculum. Dr. Willis also created a path for CSU undergraduates to complete their Biology or Zoology degree and the PSM degree in 5 years. She created the network of cooperating partnerships for this program across a diverse field from its beginning.

Dr. Willis earned her PHD in Zoology, with an emphasis in animal behavior in 2005. She held a position in College of Veterinary Medicine at CSU teaching Applied Animal Behavior until 2013. She has years of experience managing, fundraising and writing grants for non-profit animal organizations and brings her real-world experience to management of this program. She owns Animal Behavior Insights, LLC a consulting company for pets with problem behaviors. She spent ten years interpreting wildlife to visitors in service to our National Parks as a ranger during her undergraduate and graduate years. All of these skills have helped shape and guide the development of the PSM program at CSU. In her spare time, Dr. Willis enjoys spending time with her family hiking, swimming and adventuring in the Colorado Mountains.

PANEL/TABLE DISCUSSION: On-line

Kristen Kuter, Ph.D., is an Associate Professor in the Department of Mathematics and Computer Science at Saint Mary's College, in Notre Dame, IN. She served as Director of the PSM affiliated Master of Science in Data Science program at Saint Mary's from 2015-2018. Dr. Kuter has been a faculty member at Saint Mary's since 2009. Her background is in probability theory, where she is specifically interested in understanding the properties and behavior of the random process known as Walsh's Brownian motion. However, Dr. Kuter has also been involved in many diverse projects related to data and

Workshop Presenters

modeling, ranging from the collection and analysis of data on the health and education of girls in the state of Indiana, to modeling copper interactions with proteins in the human body. She received her BA in mathematics from the University of Wisconsin – Madison, and her PhD from the University of California – San Diego.

Pamela K Hardin, Ph.D., R.N., is an Associate Professor in the College of Nursing. She is also the Associate Director of the Center for Teaching and Learning Excellence (CTLE). At CTLE she works with academic programs on curricular redesign and also runs 2-week summer faculty boot camps on teaching with technology. She also works with faculty on course design and runs workshops across campus on a variety of topics including curriculum design, best practices in online learning, mentoring, transparent teaching, and high-impact practices. She is interested in developing new pedagogies in education that will be responsive to the changing population demographics both locally and nationally. Dr. Hardin is primarily a qualitative researcher. Her research is focused on bodies, health and how cultural constructions shape how people experience their bodies. She is interested in the determinants of recovery from eating disorders. Her scholarship focuses on ways in which the body is culturally inscribed and read. Dr. Hardin teaches across programs in the College of Nursing and also teaches for the Honors College.

SESSION III: Faculty CAN Recruit PSM Students!

Anirudh Chowdhary, Anirudh Chowdhary is the Professional Science Master's Programs Director at Grand Valley State University. In this role he coordinates the activities of PSM programs in Biotechnology, Biostatistics, Health Informatics and Bioinformatics, and Data Science and Analytics. Anirudh Holds a PSM from Grand Valley State University in Biotechnology and a BE from Visvesvaraya Technological University in Biotechnology.

Cynthia Bainton, is the Administrative Operations Manager for the Interdisciplinary Biotechnology MS Program at Northeastern University where she oversees all administrative aspects of interdisciplinary PSM Program in Biotechnology.

She served on the NPSMA Board of Directors (2009-2015), as Convener (2010), and as Treasurer (2012). Cynthia holds an MBA from Northeastern University and a BA in English from Bowdoin College.

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Marcel Blais is an Associate Teaching Professor, Associate Department Head, and Coordinator of PSM Programs in the Mathematical Sciences Department at Worcester Polytechnic Institute. In his role as PSM Coordinator he directs the PSM programs in Financial Mathematics and Industrial Mathematics and has been an active member of the NPSMA since 2008. Marcel holds a PhD in Applied Mathematics and an MS in Applied Mathematics from Cornell University and a BS in mathematics from Fairfield University.

SESSION IV: Using the Lean Canvas Model to Understand and Promote the Critical Role of Faculty in PSM Programs

Ray Hoobler, joined the University of Utah's PMST program as Director at the beginning of January 2016 where he is responsible for strategic and financial management of the PMST program as well as admissions, recruiting, and marketing. Prior to joining the University of Utah, he worked for 15 years in Silicon Valley holding positions in both applications and product development as well as product management.

Conference Presenters

Thursday, November 7, 2019

(Listed in order of date/presentation)

NPSMA WELCOME

Scott Herness, President, NPSMA, Vice Provost for Research and Dean of the Graduate School, Montclair State University, see page 11.

UTAH WELCOME and OPENING REMARKS

Daniel Reed came to the University of Utah from the University of Iowa, where he was the computational science and bioinformatics chair and a professor of computer science, electrical and computer engineering and medicine. From 2012 through 2017, he served as the school's vice president for research and economic development.

Reed is a former corporate vice president and technology policy leader at Microsoft, the founding director of the Renaissance Computing Institute at the University of North Carolina at Chapel Hill and was the director of the National Center for Supercomputing Applications at the University of Illinois.

Reed's most recent scholarship has focused on challenges and opportunities related to cloud and edge computing in both academic and corporate research settings.

Reed has served on many national committees, including as chair of the U.S. Department of Energy's Advanced Scientific Computing Advisory Committee; the steering committee for the National Science Foundation's Midwest Big Data Hub; the U.S. President's Council of Advisors on Science and Technology; and the President's Information Technology Advisory Committee. He also chaired the board of directors for the Computing Research Association, which represents doctorate-granting computer science departments in North America and currently serves on its government affairs committee.

A graduate of Missouri University of Science and Technology, Reed earned his master's and doctoral degrees in computer science from Purdue University.

Tim Born, Ph.D., NPSMA President-Elect, is the Associate Dean in the Padnos College of Engineering and Computing at Grand Valley State University (GVSU). Prior to starting this position he spent five years as GVSU's Professional Science Master's Programs Coordinator. He received his PhD in Biochemistry from the Mayo Clinic in 1996, spent four years at Albert Einstein

Conference Presenters

College of Medicine as a post-doctoral fellow studying novel antibacterial targets, and then joined the Chemistry faculty at George Mason University. In addition to teaching and research, he became involved in program development and administration while at Mason and led their Chemistry MS and PhD programs for 8 years. In 2013 Tim moved back home to Michigan and joined GVSU. In his spare time, Tim enjoys golfing, biking, skiing, washing dishes, watching the Nationals win the World Series, playing bouncy ball with his son, watching his daughters play hockey, and making all his children do burpees when they fail to turn off the lights or flush the toilet after doing their business.

PLENARY SESSION: Professional Science Master's Serving Workforce Needs

Mark Cafferty, as president and chief executive officer at San Diego Regional Economic Development Corporation, Mark Cafferty sits at the center of a unique collaboration of business, trade, community, and education leaders who have redefined the region's economic development strategy, cementing the region as a key stakeholder in the global economy. Cafferty has spent more than 25 years designing systems to support career advancement and economic opportunity for American workers. He has served in numerous public-sector leadership positions and has been sought as a consultant on workforce development efforts throughout the country. Cafferty co-chaired San Diego Mayor's Workforce and Economic Advisory Committee and was appointed to serve on Governor Jerry Brown's International Trade and Investment Advisory Council. A Boston native who considers San Diego home, earned a B.S. in marketing and communications from Assumption College in Worcester, Massachusetts, and his advanced certification in Performance Measurement and Non-Profit Management from Harvard's John F. Kennedy School of Government. In 2007, Cafferty was selected as a Center for Social Innovation Fellow for International Non-Profit Leaders at Stanford Graduate School of Business. He and his wife Charlene reside in San Diego with their sons Kai and Quinn. Charlene is a physician and former lieutenant commander with the United States Navy.

Julie Simmons, VP Education, Women Tech Council, has been in the technology industry for 25+ years. She is currently the co-founder & Chief Operating Officer of ForgeDX, a digital transformation SAAS company that helps companies accelerate sales with their product experience platform, IdeaCloud. Prior to ForgeDX, she was an IT executive with Omnicom, one of the world's largest advertising networks headquartered in New York City supporting

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more than 150 companies and 60,000+ users. She also worked as the CIO for MarketStar where she led IT, Digital Solutions & Business Intelligence and helped build and scale the organization globally with Fortune 100 technology customers.

Julie has been honored by Utah Business 30 Women to Watch and is on the Women Tech Council Executive Board. She is passionate about promoting STEM and mentoring young people to find careers they love. She graduated cum laude from Utah State University and holds an MBA from the University of Utah.

Royal DeLegge has served as Environmental Health Director for the Salt Lake County Health Department since August 1999. Previously, Royal served as Director of Environmental Health for the Winnebago County Health Department in Rockford, Illinois, and before that held various positions at the DuPage County Health Department in the Chicago metropolitan area. He holds a BS in Biology from Illinois State University, MPA from Northern Illinois University and PhD in Public Policy and Administration from Walden University.

He also works as an Adjunct Professor of Public Health teaching courses in the School of Nursing and Health Sciences' Master of Public Health program at Westminster College in Salt Lake City.

AFTERNOON SESSIONS

What makes a PSM Program? How to make PSM's Resonate!

Jennie Willis, Colorado State University, see page 15.

Dagmar Beck, Director, Professional Science Master's Programs, Rice University, Houston, Texas. Dagmar received an associate business administration degree in Germany, and a B.A in Liberal Arts from the University of Houston. She started her career in the U.S. working for several international corporations involved in import and export, international trade, and banking. Following her true interest in the fields of teaching and education, she redirected her career after returning from a three-year stay in Singapore, first working for a private language school in Houston for five years, then transitioning to work for Rice University in 2002.

She facilitated the growth of Rice's Professional Science Master's program and between 2012-16 helped with updating professional engineering master's building a marketing strategy, increasing enrollment, creating a community for master's students and training personnel at the school. Since 2017

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she is focusing again on the science programs developing options to facilitate increase in enrollment of working professionals.

She has been actively participating in the NPSMA since 2007, and has served as Immediate Past President in 2012, President in 2011, Vice-President in 2010, and has acted as committee chair on several committees over the years. She chaired the 2nd National NPSMA Conference committee organizing a highly successful conference in Atlanta in 2010, and was on the conference committee for the 2012 conference. She also is a member of WEN, NAGAP and GACC.

Deborah Silver, is the Executive Director of the Professional Science Master's Program (and the Master of Business & Science Degree) at Rutgers, The State University of New Jersey. The Professional Science Master's Program is on all three campuses, New Brunswick, Newark and Camden. She served as the Vice President of the NPSMA and is now a member of the NPSMA Board and the PSM Affiliation Board. Dr. Silver is also a Professor in the Department of Electrical and Computer Engineering. She received a B.S. from the Columbia University School of Engineering and a Ph.D. from Princeton University in Computer Science. Dr. Silver's area of research is Data Visualization and her research has been funded by the National Science Foundation, NASA, the Department of Energy, and the U.S. Air Force. She has served on numerous IEEE Visualization committees and now serves on the IEEE Visualization SciVis Steering Committee.

Inge Wefes was educated at the University of Tübingen, Germany, followed by postdoctoral training and an instructorship at Harvard Medical School. She joined the University of South Florida (USF) as Assistant Professor in 1998, and in 2000, as Director of Program Development in the Department of Biochemistry and Molecular Biology at USF's Medical School, she took on a leading role in science graduate education. She initiated the development of a dual degree program, PhD-Plus, which allows biomedical PhD students to earn concurrently a Master's degree in, for example, business or public health. In this effort, she was also the driving force for establishing three Master's programs: Bioethics, Bioinformatics, and Biotechnology. The latter two were recognized as the first two Professional Science Master's Programs (PSM) in the State of Florida. As Associate Professor at USF (2009), Dr. Wefes was Director and Student Advisor/Mentor of two dual degree programs (PhD -Plus and a Dual Master's in Biotechnology and Entrepreneurship), two PSM programs, and three Graduate Certificate Programs. In addition to research

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on the molecular aspects of Alzheimer's disease, she was also actively engaged in teaching and course development and served as course director and instructor of six graduate courses and one undergraduate course. In collaboration with local industry, Dr. Wefes led the PSM Program in Biotechnology to become one of the finalists for the Annual Industry Achievement Awards of the Tampa Bay Technology Forum. In 2011, USF's College of Medicine rewarded her innovative drive and commitment to science education with the inaugural award for "Innovation in Teaching".

Dr. Wefes served on multiple boards including the PSM Advisory Board of the National Council of Graduate Schools, the State-wide Initiative for The Promotion of PSM Programs in the State of Florida, and as Advisor to The Governor's Task Force for The Study of Biotech Competitiveness.

She is currently serving a second term on the Board of the National Professional Science Master's Association (NPSMA) and was co-chair of the NPSMA annual conference in 2013 and 2016. In 2012, Dr. Wefes became Associate Dean of the Graduate School at the University of Colorado Denver | Anschutz Medical School. There, she pioneered new outreach efforts in the form of Mini-Schools where faculty educate interested lay people about issues related to STEM disciplines, Public Affairs, Public Health and more, and founded the first Colorado Chapter of the National Academy of Inventors and the Colorado Council of Graduate Schools. At CU, she also developed and directs a Master's Program in Biomedical Sciences & Biotechnology, the first PSM Program in the University of Colorado System. In 2013, she became one of 10 Principal Investigators (now 17) of the NIH BEST Award for "Broadening Experiences in Scientific Training". In this function, she initiated and co-developed multiple professional and career development workshops that train pre/postdoctoral fellows in skills that will increase their competitiveness for jobs inside and outside academia, addressing teaching, presenting, entrepreneurship, leadership, critical thinking, project management and more. The Academic of Medical Educators at CU just recognized her efforts to promote the success of graduate students and postdoctoral fellows with the Academy's 2017 Educator Award for Mentoring and Advising.

Aligning PSM Affiliation with the NASEM/CGS Guidelines for Master's Education

Linda Strausbaugh, University of Connecticut (Emeritus), see page 12.

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Norah McCabe developed and is the director of the PSM in Molecular Biosciences (MB) originating from the School of Molecular Biosciences at Washington State University, in Pullman WA. The PSM in MB was initiated in 2009 and it was the first, and still is the only affiliated PSM degree in WA state. Dr McCabe has degrees in Pharmacology and Neurochemistry, and in her current position when she is not administrating the PSM degree she is teaching and advising students in the areas of genetics and cancer.

PSM4RST8 REVIEW: Presentations

Elements of a PSM Elevator Pitch

Inge Wefes, University of Colorado Denver | Anschutz Medical Campus, see page 21.

Modeling Regional Partners

Gerald Grunwald, Ph.D., is Dean of the Jefferson College of Life Sciences at Thomas Jefferson University in Philadelphia, PA. He serves as the chief academic officer for the college, whose programs include 4-year undergraduate, postbaccalaureate, MS (including PSM), PhD and postdoctoral education and training spanning Jefferson's Center City and East Falls campuses in Philadelphia. He remains an active classroom educator and also currently serves as a member of the NPSMA Board of Directors. He has served as director of MS and PhD graduate programs, as director of numerous graduate and medical college courses, and in development of policies for graduate and postdoctoral training. A Jefferson faculty member since 1985, Dr. Grunwald assumed his current position as dean in September 2010. In addition to serving as Dean of JCLS, he is currently tenured Professor in the Department of Pathology, Anatomy and Cell Biology, in the Sidney Kimmel (formerly Jefferson) Medical College. He received his BA cum laude in Biology from Cornell University and his MS and PhD in Zoology from the University of Wisconsin. Prior to joining Jefferson, he was engaged in postdoctoral studies as a Senior Staff Fellow at the National Institutes of Health.

Extending the SLACK

Amber Bloechle, is the GIS Director in the Department of Earth and Environmental Sciences at the University of West Florida (UWF).

A Certified GIS Professional who holds a M.S. in Environmental Science, a Graduate Certificate in GIS, and a B.S. in Environmental Studies (Policy), all from UWF.

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Primary interests include using GIS and Remote Sensing to make better policy decisions and improve environmental outcomes.

She has worked as a GIS professional in both contract and academic capacities. Recent projects involve employing geospatial analysis to support healthy food resources both here in Northwest Florida and Mozambique, Africa.

Bloechle is a certified quality online instructor based on the Quality Matters Program. She develops content, instructs, and administers UWF online GIS course offerings. Professional affiliations include: North Section Executive Board member for Florida Urban and Regional Information Systems Association (FLURISA); Board of Directors, National Professional Science Masters Association (NPSMA); Volunteer, Florida Emergency GIS Response Team, and several local GIS User Groups.

Platform to PSMs

Kristin Kuter, Associate Professor in the Department of Mathematics and Computer Science at Saint Mary's College, in Notre Dame, IN, see page 15.

PANEL DISCUSSION

Courtney Thornton, NPSMA Past-President, is Associate Vice Provost for Academic Personnel and Policy at North Carolina State University, where she supports faculty in interpreting and implementing a wide range of state, system, and institutional policies.

Dr. Thornton's work experiences span K-12 education, private industry, and higher education. In 1996-1997, she served as a high school science teacher in the Wake County Public School System. She then joined Lord Corporation in Cary, NC as a formulator and tester of auto and marine adhesives. From 2002-2004, Thornton served as the Education Program Manager at NC State University's Kenan Institute for Engineering, Science and Technology followed by a post-doctoral research position at NC State. From 2008-2017, she held several roles with the University of North Carolina system, including Research Director, Associate Vice President for Research and Graduate Programs, and Associate Vice President for Academic Programs.

Dr. Thornton's bachelors' degrees in Chemistry and Science Education and masters and doctoral degrees in Higher Education Administration are from North Carolina State University. She has taught in UNC-Chapel Hill's American Studies program and NC State's higher education program. Her research

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on higher education engagement and student civic responsibility appears in the *Journal of Higher Education*, *Research in Higher Education*, and the *Journal of College Student Development*.

STUDENT WORKSHOP: Applied Professional Development

The Story of a Successful Job Hunt

Jeff Vanek, Director of Human Resources Hogle Zoo, understands that growth is rarely a single direction. He started college majoring in communications, ended up graduating with a degree in political science and going off to law school. Ever interested in personal growth, he went back to school and earned a Master's of Science and Technology—midcareer. He figures buying a red sports car might have been more fun in retrospect. Currently, Jeff is works as a Director of Human Resources for the Hogle Zoo in Salt Lake City. He has used his legal skills in positions in several industries, including high-tech and real estate. Jeff wrote *Somehow I Thought I Would Be Taller: Finding The Courage to Grow Personally and Professionally*, a humorous look at life and career, and winner of the Gold Quill for Best Nonfiction in 2015. He lives at the base of Mt. Olympus with his wife, two boys, and dog Lucille Esmeralda McGillicuddy Ricardo Vanek—who just goes by “Lucy” most days.

Time Management

Shad Slaughter, Vice President of Operations Xlear Inc., teaches business strategy and operations management at the University of Utah and Westminster College. He spent eight years as the CEO of Utah Truffles and is currently the VP of Operations for Xlear, Inc. Shad also consults for The Adventure and Gear Fest, Utah's largest consumer expo focused on outdoor sports, and CE Zoom, the next big deal in professional education management. He is a lover of outdoor adventures and exploring Utah with his young family.

Three Minute Presentation (3MP) Student Competition

Acceleration of Spinach Seed Germination to Improve the Efficiency of Aeroponic Urban Farming

April Dawson, California State University San Marcos student of Dr. Betsy Read and Dr. Albert Kern, earning a Professional Science Master's Degree in Biotechnology.

Local Urban Vegetables (LUV) in Whittier, California aims to optimize and completely automate the process of growing vegetables aeroponically. Their mission is to grow healthy food directly in high-population cities while minimizing the carbon footprint from seed to delivery. Most vegetables can be

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grown successfully using indoor modern farms, but some are notoriously difficult. Notably, spinach is often regarded as slow-growing and incapable of turning a profit due largely to its abnormally long germination phase. The aim of this project was to develop a protocol to reduce the time from sowing to germination for spinach so that LUV can grow this nutritious vegetable profitably. Seed priming is a blanket term for any pre-treatment that hastens the germination process. To accomplish the goal of the project, four priming methods that each function on a different biological mechanism of germination were tested on spinach seed. The methods were optimized individually and then combined to seek better results than could be accomplished by any one method applied in isolation. The result of applying these treatments concurrently was a seed that germinated five days sooner than control seeds. This improvement is put into perspective when looking at overarching patterns of production. Through a decrease in turnover time, a five-day improvement in germination time allows the same area to produce 26% more revenue with similar energy and nutrient inputs. This project highlighted the versatility of the PSM program training as it encompassed basic biology and experimental design as well as practical business applications and analysis.

Automated Mosquito Classification

Travis Draper, University of Utah student of Dr. Ray Hoobler, earning a Professional Master of Science and Technology (M.S.T.) degree.

onVector Technologies produces sensors to count mosquitoes as they enter mosquito traps. Their next generation sensor is designed to make an audio recording of mosquitoes for classification by an onboard computer.

The project involved analyzing and testing various machine learning models, as well as evaluating various representations of the wing beat recordings to feed into the models. This new sensor along with the classification system will allow researchers and mosquito abatement professionals to monitor mosquito populations with much greater ease, and free up resources within mosquito abatement programs.

Methods of Reducing Food Waste within Managed Populations at Busch Gardens Tampa Bay

Nathan Edwards, Colorado State University student of Dr. Jennie Willis, earning a Professional Science Master's degree in Zoo, Aquarium and Animal Shelter Management.

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Every year zoos feed out millions of pounds of food to their animal residents. However, throughout daily feeding operations there is a lot of room for wasting food. Due to high standards, contamination and excess ordering, food waste can cause significant economic loss to the organization. Although daily waste might be small, the cumulative money equal to this waste throughout the year adds up rapidly and can greatly impact the organization. Throughout a study done at Busch Gardens Tampa Bay, various animal care departments will be observed to locate areas of food waste. Based on these observations, different plans will be created and set in place to minimize the amount of food wasted. With proper maintenance of avian diets and animal behavior, food waste can be cut to a minimum to free up expenses for other crucial projects.

Evaluation of Performance Characteristics Among 16 Same Make-And-Model Tandem Mass Spectrometers

Triniti Jensen, University of Utah student of Dr. Ray Hoobler, earning a Professional Master of Science and Technology (M.S.T.) degree.

This research focuses on the current knowledge gap in clinical laboratory operations of assay portability and expansion. ARUP has more than 80 mass spectrometers of which there is no documentation on performance comparison among the mass spectrometers nor is there a procedure to test and quantify an instruments performance abilities to the extent that is needed. It became critical and essential to have fast transitions to new or additional instruments to uphold the mission of ARUP. Being a CLIA and ISO regulated laboratory methods can not deviate from the validated method and standard operating procedure. Some instruments require unique, optimized settings to obtain the same sensitivity compared to another instrument. This disagreement could require months of revalidation work and ultimately, a significant amount of money and resources.

This study demonstrated the need to optimize instrument parameters for each instrument and that assay portability might not be as easy as expected. Additionally, the lack of check standards for cases like this can cost a company not only money but can decrease trust clients have for the laboratory, potentially causing the loss of clientele. A singular case was examined where a loss of at least 2% in revenue, a repeat rate increase from 2.5% to 7%, and a turnaround time increase of 3-57 hours was seen. These adverse effects do not take into account the patients well-being or the time scientists and engineers spent investigating the issues. The described study could be imple-

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mented to understand interment performance better, reduce assay portability time, and ultimately help ARUP uphold the highest quality of patient care.

Assessing the Performance of Statistical Assessment for Friction Ridge Evidence

Michael P. Kessler, Florida International University student of Dr. Sara Casado Zapico, earning a Professional Science Master's degree in Forensic Science.

In cooperation with the U.S. Army Criminal Investigation Laboratory (USACIL) and the Fort Worth Police Department Crime Laboratory, the performance of a similarity metric-based statistical assessment software tool for measuring the strength of correlated friction ridge features—FRStat— was evaluated. FRStat was developed by USACIL to provide statistical strength to fingerprint analysis. The method measures the similarity between two configurations of friction ridge skin features and calculates a similarity metric than employs statistical modelling of the distributions of the similarity statistic values from mated and non-mated impressions to provide the statistical assessment of the strength of the friction ridge impression evidence. The performance was evaluated using a variety of mated and non-mated datasets. The results show that this novel approach correctly identified mated and non-mated pairs and consistently measured similarity statistic values across examiners and friction ridge impressions. The results further provided validation of the foundations behind the science of friction ridge discipline. Although there are limitations to its capability, this method shows potential in strengthening the reporting of friction ridge impression comparisons with an empirically grounded basis.

The Waste Industry in a Changing World

Christopher Kocay, Northern Arizona University student of John Fegyveresi, is earning a Climate Science and Solutions Masters of Science degree.

The waste and recycling services industry is seeing a paradigm shift as the consumptive habits of people are shifting and the ecosystem of the industry must change with it. I had the opportunity to be a part of the Corporate Internship Program at Republic Services in Scottsdale Arizona over the summer of 2019. The projects I worked on include the formation of a duty specification document for recycling center heavy equipment, end of life sales of aging fleet equipment and trucks, and some time working on the electrification of their trucks, and their methane recapture at their landfills. All of these projects were given a set amount of time each week to work on and progress

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was reported weekly to my supervisor and senior manager. The outcomes of my internship include the creation of a first-of-its-kind duty specification document for recycling center heavy equipment, updating the end of life requirement for the sale of heavy equipment and trucks, and fleet management process standardization. The connection to my PSM program training were aspects of corporate business, communications and regulatory affairs tying in mathematics and science disciplines.

Why are you doing that, how can I get you to do something different, and how can I communicate that to others? Using ZooMonitor to Set Behavioral Goals for Animals in Our Care

Molly Selleck, Colorado State University student of Dr. Jennie Willis, earning a Professional Science Master's degree in Zoo, Aquarium and Animal Shelter Management.

Zoo science research findings have greatly supported the concept of environmental enrichment as a successful technique to addressing stereotypic behaviors in captive animals. Advancements in behavior research continue as the community develops behavior ethogram monitoring processes and technology to develop and compile activity budgets for zoo animals. The most recent technological advancement is an application called ZooMonitor, currently being used by institutions all over the United States. Using these activity budgets, enrichment plan modeling is also experiencing a shift. Animal care teams have begun to focus on specific behavior modifications rather than just species natural history when designing enrichment techniques. I believe these advancements are the correct path to follow, so I have implemented the use of ZooMonitor at the Denver Downtown Aquarium as well as compiled and implemented new behavior monitoring training information. Similar to other institutions, this implementation has maximized the ease of data recording to apply to management decisions such as enrichment determinations.

PLENARY SESSION: Institutional Models for Administration and Financing of PSM Programs

Shelia Thomas, Ph.D., is the Assistant Vice Chancellor and Dean of Professional and Continuing Education (PaCE) for the California State University (CSU) System. She is a veteran administrator in the field of continuing higher education in both public and private institutions. In her system role, Thomas facilitates workforce development opportunities, strategic communication,

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Friday, November 8, 2019
(Listed in order of date/presentation)

policy review, and advocates for self-support activities. She serves on industry advisory councils for healthcare and other high-demand fields. Thomas has served as a board member and network leader for the University Professional and Continuing Education Association (UPCEA), the National Professional Science Masters Association (NPSMA) and as an ACE women's network representative.

Aaron Guy, is currently the Associate Dean of Extended Learning at California State University San Marcos (CSUSM). Aaron's responsibilities include program development and oversight of the numerous graduate and undergraduate degree and certificate programs, along with workforce and professional development programs offered through Extended Learning. As Associate Dean Aaron is focused on keeping his finger on the pulse of workforce trends to ensure Extended Learning programs are relevant and responsive to the needs of employers in the region and around the world.

David Kieda, Dean of the Graduate School University of Utah, see page 13.

Natalie Bosecker, PSM Director, University of Illinois, see page 11.

PANEL DISCUSSION

Gerald B. Grunwald, Thomas Jefferson University, see page 23.

SECOND SESSION: How to effectively create/use an advisory board

PANEL DISCUSSION

Mary Nelson is currently a research scientist at Huntsman Cancer Institute. From 2013 through early 2019, Mary was the director of InnovaBio and STUEDNTfacturedED initiatives at the Salt Lake Community College where she developed experimental outlines for Interns working to complete projects for our Contract Research Organization and the training new interns entering their Innovabio Internship program. Mary is currently a member of the University of Utah PMST program's advisory committee.

Mary earned her Ph.D. in Oncological Sciences from the University of Utah School of Medicine where she studied the ETS family of transcription factors and her B.S. in Biochemistry from Seattle University.

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Collin Burton graduated from the biotechnology PMST program at the University of Utah in 2013. It was there that he was introduced to the advanced statistical methods and technology that would eventually become known as data science. Collin then further pursued a full time MBA from Brigham Young University where he focused on marketing and analytics. Collin now works as a data scientist at Pluralsight, a technology skills and learning company with over 1200 employees. His work revolves around building algorithms that help optimize internal processes for a team of over 400 sales professionals. Collin is a current member of the University of Utah PMST program's advisory committee.

Patrick A. Shea is a Salt Lake City based lawyer who has taken on many cases related to freedom of the press. He also held office in the United States Department of the Interior. Shea received his bachelor's degree from Stanford University. He then was a Rhodes Scholar at Oxford University. He received his law degree from Harvard Law School in 1975. He has taught courses at Brigham Young University, University of Utah, Kansas State University, and Westminster College. Since his return to Utah in 2001 Shea has been a member of the University of Utah political science department's faculty. Shea was an adjunct faculty member of the Department of Agronomy at Kansas State University from 2001-2009. Shea was a Fellowship Adviser to Honors Program at Westminster College, Salt Lake City in collaboration with 'The Living Arts Experience: A Seminar in Liberal Ideals'. Shea is a Research Professor of Biology at the University of Utah and serves as consultant to the Dean of the College of Science. He teaches a course for seniors and first year graduate students entitled "Biography of an Urban Stream". The course exams the interaction between the geology, hydrology and biology of the Canyon which is next to the University of Utah. Shea was a lecturer at Stanford University, Winter Quarter, 2019 teaching a course on Public Lands. He will be teaching two courses Winter Quarter 2020, Public Lands and a second, Wild-land Fires.

Elizabeth Friedman, Illinois Institute of Technology, see page 14.

Dagmar Beck, Rice University, see page 20.

FIELD TRIP: Red Butte Garden Tour

Derek Payne, University of Utah.

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