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MONTCLAIR STATE UNIVERSITY

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PROFESSIONAL SCIENCE MASTER’S

THE UNIVERSITY OF UTAH

THREE MINUTE PRESENTATION (3MP)

ProQuest

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
### Workshop Schedule

**FACULTY ENGAGEMENT WITH THE PSM**

**Wednesday, November 6, 2019**  
- University of Utah Conference Center -

<table>
<thead>
<tr>
<th>Time</th>
<th>Activity</th>
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<tbody>
<tr>
<td>8:00 – 9:00</td>
<td>Breakfast/Registration (East Lobby/South Room)</td>
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</table>
| 9:00 – 9:15   | **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   | **SESSION I: Engaging Academic Faculty and Administrators**  
                *Jennifer S. Shumaker-Parry, Director, Biotechnology, PMST Program, University of Utah*  
                *Moderator: Natalie Bosecker, University of Illinois* |
| 9:35 – 10:25  | **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*  
                *Moderator: Natalie Bosecker, University of Illinois* |
| 10:25 – 10:40 | **BREAK**                                                                |
| 10:40 – 11:20 | **SESSION II: Building Brand Awareness & Culture with Your Most Important Advocates — Faculty!**  
                *Moderator: Mark Jakubauskas, University of Kansas, Edwards Campus* |
|               | **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* |
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 STUEDNTfacturED 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.

FACULTY ENGAGEMENT WITH THE PSM
Wednesday, November 6, 2019
- University of Utah Conference Center -

11:20 – 12:00  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
(South Room)

12:00 – 1:00  LUNCH (South Room)

1:00 – 1:40  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
Moderator: Marcel Blais, Associate Department Head, Mathematical Sciences, Worcester Polytechnic Institute
(South Room)

2:40 – 3:00  BREAK

3:00 – 3:50  SESSION V: What are YOUR Biggest Challenges When Engaging Faculty?
INTERACTIVE DISCUSSIONS
Moderator: Natalie Bosecker, University of Illinois
(South Room)

4:30 – 5:00  Workshop Summary and Action Items/Evaluation
Moderator: Natalie Bosecker, University of Illinois
(South Room)

5:00 – 6:00  Early Registration for National Conference (East Lobby)

6:00  All workshop attendees are invited to dinner at Porcupine Pub & Grille (not a sponsored meal). Meet in Guest House Lobby.

(Continued on next page)
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  NPSMA WELCOME
Scott Herness, President, NPSMA, Vice Provost for Research and Dean of the Graduate School, Montclair State University

9:00 – 9:25  UTAH WELCOME and OPENING REMARKS
Daniel Reed, Senior Vice President of Academic Affairs, University of Utah
Introduction: Tim Born, PNSMA President-Elect, Grand Valley State University

(Please note: sessions start 30 minutes after listed times)

9:30 – 9:50  PLENARY SESSION: Professional Science Master’s Serving Workforce Needs
Mark Cafferty, President & CEO, San Diego Economic Development Corporation
Julie Simmons, VP Education for the Women Tech Council
Royal DeLegge, Director, Environmental Health Division
Salt Lake County

10:00 – 10:20  PANEL DISCUSSION (Daniel Reed, Mark Cafferty, Julie Simmons, Royal DeLegge)
Moderator: Ray Hoobler, University of Utah

10:40 – 10:55  BREAK

11:00 – 11:30  LUNCH: Table Topics (North Room)

11:45 – 12:45  AFTERNOON SESSIONS
What makes a PSM Program? How to make PSM’s Resonate!
Jennie Willis, Colorado State University
Dagmar Beck, Rice University
Deborah Silver, Rutgers, The State University of New Jersey
Moderator: Inge Wefes, University of Colorado Denver | Anschutz Medical Campus

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Conference Presenters

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 facilities workforce development opportunities, strategic communication,
**Conference Presenters**

**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 that 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

**Conference Schedule**

**PROFESSIONAL SCIENCE MASTER’S SERVING WORKFORCE NEEDS**

Thursday, November 7, 2019 (continued)

- University of Utah Conference Center -

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