

# **SCHEDULE OF EVENTS**

**104th Annual Meeting**

Thursday, April 11, 2019

Friday, April 12, 2019

Saturday, April 13, 2019

Arrowwood and Bridges Conference Center

Oacoma, SD

Hosted by

Mount Marty College

**Local Arrangements Chairpersons**

Dr. Chun Wu

Dr. Timothy Rice

Program Printed by Minuteman Press, Sioux Falls, SD



**---------------------------------------SCHEDULE OF EVENTS----------------------------------Thursday, April 11, 2019**

Executive Council Dinner/Meeting 5:00-7:00 PM Breakwater

**---------------------------------------SCHEDULE OF EVENTS----------------------------------**

**Friday, April 12, 2019**

Cedar Shore Resort and Bridges Conference Center

Wheeler/Oacoma Rooms

Pre-function Space/ Corridor

Registration 8:00 AM – 5:00 PM Corridor

Fellows Symposium 9:00 AM – Noon Oacoma

Fellows Luncheon Noon Missouri Winds

Drug Design Symposium 1:00 PM—4:00 PM Oacoma

Mixer 4:15 PM—5:30 PM Pre-function Space

Banquet/Awards 5:30 PM – 6:45 PM Wheeler

Keynote Address 7:00 PM Wheeler

**Keynote Address**

**“Rational Drug Design”**

**Dr. Debra Dunaway-Mariano**

Emerita Professor of Biochemistry

University of New Mexico

--------------------**Friday Morning, April 12, 2019**-----------------------

**SYMPOSIUM I. FELLOWS OF THE ACADEMY**

**Moderator: Nels Granholm**

**9:00 am – 11:30 am** **Oacoma**

**Name of presenter is underlined and boldface**

**9:00—**Welcome and Introduction

**9:15—**"Are our declining efforts to include more lectures and reading assignments relevant to the archives of historical contributions of former authors, educators, scientists, conservationists, etc. resulting in numerous college/university graduates that are lacking in historical knowledge and the means of conveying it forward to future generations of students, citizens, and educators?” **Kenneth F. Higgins**, David C. Parris, Lora B. Perkins, and Lila M. Morris (10-04)

Ken’s presentation will be followed by a discussion of the themes he presents and then a discussion of the following questions: Shall we have a 2020 Fellows Symposium? If so, what shall be its nature? What does it mean to be a Fellow of the Academy? Should it be more than a celebration of past contributions to the Academy?

**Noon**—Fellows Luncheon in Missouri Winds (all Fellows of the Academy are invited to a luncheon hosted by the staff of the Proceedings)

.

----------------------**Friday Afternoon, April 12, 2019**-----------------------

 **SYMPOSIUM II. DRUG DEVELOPMENT anD DESIGN**

**Moderator: Chun Wu.**

**1:00 pm – 4:00 pm** **Oacoma**

**Name of presenter is underlined and boldface**

**1:00** Welcome and Introduction.

**1:15-1:45** *In Vivo* Antibacterial Analysis of MRSA Acetate Kinase Inhibitors. Chris WixonUG, Debra Bevis, Robert Kilkuskie, and **Chun Wu**(19-10)

**1:45-2:15** SEARCHING FOR THE MECHANISM OF ACTION OF A TRADITIONAL CHINESE MEDICINE USED IN THE TREATMENT OF ENDOMETRIOSIS. **Kathleen M. Eyster**, Donis D. Drappeau, and Chun Wu(19-42)

**2:15-2:45** investigation of nanostructured metal-organic supercontainers as a new therapeutic approach to treating Drug Addiction. Parvathi Jampani, Marie A Severson, Lisa M. McFadden, and **Z. Rick Wang** (19-45)

**2:45-3:15** Applying Reaction Kinetics and the Lambert *W*(x) to Measure the Antiproliferation Effects of Glucosinolates Against Human MCF-7 Cells. **Jared R. Mays** (19-46)

**3:15** Wrap Up

**4:30** MIXER--Pre-function Space

**5:30**  Banquet/Awards--Wheeler

**7:00** Keynote Address--Wheeler

SCHEDULE OF EVENTS

**Saturday April 13, 2019**

**Registration** 8:00 am – 11:00 am Corridor

**Contributed Papers** 8:00 am – 10:30 am

* Session A. Biological Sciences Glass
* Session B. Biological Sciences Breakwater
* Session C. Physical Sciences Howe

**Poster Setup** 8:00 am – 10:30 am Corridor & Pre-function Space

**Poster Judging Session** 10:30 am – 12:30 pm Corridor &Pre-function Space

**(**Authors should be present at their posters for discussion**)**

**Luncheon/Business Meeting** 12:30 – 2:30 pm Wheeler

------------------------------**Saturday Morning, April 13, 2018**-------------------

CONTRIBUTED PAPERS

**Session A. Biological Sciences**

**8:00 am-10:30 am Glass**

**Name of presenter is underlined and boldface**

**8:00-8:15** GEOCHRONOLOGY AND PRELIMINARY PALEONTOLOGY OF THE PAISLEY FISH LOCALITY, SUMMER LAKE BASIN, NORTHERN LAKE COUNTY, OREGON. **James E. Martin**, Jennifer E. Hargrave, and Andrew Whisnant (19-08)

**8:15-8:30** DERIVED DENTAL CHARACTERS DISCOVERED IN AN ORELLAN CANID (BOROPHAGINAE: PHLAOCYONINI) AND THE EARLY DIVERSIFICATION OF DOGS PROXIMAL TO THE EOCENE-OLIGOCENE TRANSITION. **Ed Welsh** and Jason Moore(19-36)

**8:30-8:45** SPLIT CARINAE ON A SPECMEN OF FALSE SABER-TOOTH CAT (CARNIVORA: NIMRAVIDAE) AND THE IMPLICATIONS FOR HOMOLOGOUS TOOTH ABNORMALITY FORMATION IN MAMMALS AND THEROPOD DINOSAURS. **Ed Welsh,** Clint A. Boyd, and Kurt Spearing (19-51)

**8:45-9:00** The Changing Status of Winter Passerines in South Dakota: Are Recent Records Associated with Warmer Winters? **David Swanson** (19-05)

**9:00-9:15** The Dakota skipper (*Hesperia dacotae* Skinner) on the Prairie Coteau. **Kendal A. Davis** and Paul J. Johnson (19-12)

**9:15-9:30** ACTIVITY OF LATE INSTAR LARVAE OF THE GIANT EUCOSMA (*EUCOSMA GIGANTEANA* (RILEY)) IN EASTERN SOUTH DAKOTA. **Paul J. Johnson**, Arvid Boe, and Abigail Martens (19-18)

**9:30-9:45** THE DIVERSITY OF APHID PARASITOIDS (HYMENOPTERA: BRACONIDAE: APHIDIINAE) IN SOYBEAN FIELDS OF EASTERN SOUTH DAKOTA. **Abigail P. Martens**, Paul J. Johnson, Arvid Boe, and Adam Varenhorst (19-15)

**9:45-10:00** Age, Succession Planning & Wildlife Values of UPPER MIDWEST Landowners. **Larry M. Gigliotti** and Lily A. Sweikert (19-06)

**10:00-10:15** From Pasture to Forest: Secondary Succession in Southwestern Michigan. **Robert Tatina** (19-02)

**10:30-12:30--**Poster Session—Corridor and Pre-function space

**12:30**—Luncheon & Business Meeting--Wheeler

CONTRIBUTED PAPERS

**Session B: Biological Sciences**

**8:00 am-10:30 am** **Breakwater**

**Name of presenter is underlined and boldface**

**8:00-8:15** SEED SET AND SEED-INSECT INTERACTIONS IN NATURAL AND CULTIVATED POPULATIONS OF PURPLE PRAIRIE CLOVER. **Arvid Boe**, Paul J. Johnson, and Abigail P. Martens (19-26)

**8:15-8:30** OAK LAKE FIELD STATION: AN INVITATION AND OVERVIEW OF THE LAST 30 YEARS. **Nels H. Troelstrup, Jr**. (19-27)

**8:30-8:45** A HISTORICAL SYNOPSIS OF WHAT’S BEEN HAPPENING IN THE NORTH AMERICAN “DUCK FACTORY”! **Kenneth F. Higgins**, David C Parris, and Lora B. Perkins (19-16)

**8:45-9:00** IDENTIFYING ROCK BASS (*Ambloplites rupestris*) BEHAVIOR TO MODIFIED FYKE NETS THROUGH VIDEO. **Derek Hartl**and Greg Simpson (19-03)

**9:00-9:15** PROMOTING VEGETATION HETEROGENEITY WITH ALTERNATIVE GRAZING STRATEGIES TO IMPROVE ECOSYSTEM SERVICES. **Luke Zilverberg**, Jameson Brennan, Kassidy Weathers, Patricia Johnson, and Lan Xu (19-50) JUDGE

**9:15-9:30** Effects of Heavy Winter Patch Grazing and Wildfire on Small Mammals. **Kaitlyn Cihoski**UG, Lan Xu, and Eric Michel (19-13) JUDGE

**9:30-9:45** Effects of Genetic Variation and Nitrogen Addition on Bud and Tiller Production in Switchgrass. **David G. Flanery**UG, Arvid Boe, and Lan Xu (19-30) JUDGE

**9:45-10:00** Proposed Project: Describing plant-pollinator networks nestled within the Eastern Coteau’s agricultural landscape. **Isabela Vilella-Arnizaut** and Charles Fenster (19-40) JUDGE

**10:00-10:15** AGE, GROWTH AND MORTALITY OF *PYGANODON GRANDIS* IN RELATION TO LAKE TROPHIC STATE. **K.M. Wollman** and N.H. Troelstrup, Jr. (19-43) JUDGE

**10:15-10:30** WATER QUALITY ANALYSIS OF LAKE PETÉN ITZÁ, GUATEMALA AND EXPLORING THREAT OF A MAJOR FISH KILL SHOULD THIS DEEP TROPICAL LAKE EXPERIENCE TURNOVER. **C. L. Iversrud**UG, C. N. Spencer, and G. O. Constanza (19-41) JUDGE

**10:30-12:30--**Poster Session—Corridor & Pre-function Space

**12:30**—Luncheon & Business Meeting--Wheeler

**CONTRIBUTED PAPERS**

**Session C: Physical Sciences**

**8:00 am-10:00 am** **Howe**

**Name of presenter is underlined and boldface**

**8:00-8:15** FCPs Search with CDMSlite Run2a. **Sudip Poudel** on behalf of SuperCDMS collaboration (19-20) JUDGE

**8:15-8:30** Synthesis, Preparation, and Thermoelectric Properties of Synthetic Mineral Sulfides. **Jace Waybrigh**tUG, Gabin Guélou, Naohito Tsujii, and Takao Mori (19-17) JUDGE

**8:30-8:45** Surface modification approaches for enhancing bio-electrocatalytic performance in MFC and biocorrosion applications. **Jamil Islam**, Jawahar Kalimuthu, Govinda Chilkoor, Rajesh Sani, and Venkataramana Gadhamshetty (19-31) JUDGE

**8:45-9:00** MINER: Utilizing Low Threshold Cryogenic Detectors and Movable Reactor Core to Look for Neutrinos that Defy the Standard Model. **Joseph Mammo** on behalf of the MINER Collaboration (19-29) JUDGE

**9:00-9:15** DATA VISIALIZATION OF SuperCDMS EXPERIMENT. **Ruslan B. Podviianiuk** on behalf of SuperCDMS collaboration (19-19)

**9:15-9:30** Sanford Underground Research Facility. **Markus Horn** (19-21)

**9:30-9:45** Hallo Manganese oxide as an alternative cathodic catalyst for enhanced oxygen reduction in microbial fuel cell. **Bhuvan Vemuri**, Jamil Islam, Dr. James Hoefelmeyer, and Venkataramana Gadhamshetty (19-52)

**9:45-10:00** Biobattery-Supercapacitor Hybrid Devices Powered by Municipal Wastewater. **Sambhu Sapkota**, Namita Shrestha, Sushma Priyanka Karanam, Matthew Hummel,Zhengrong Gu, and Venkataramana Gadhamshetty (19-53)

**10:30-12:30--**Poster Session—Corridor & Pre-function Space

**12:30**—Luncheon & Business Meeting--Wheeler

**POSTER JUDGING SESSION**

**10:30 am-12:30**  **Corridor & Pre-function Space**

**Name of presenter is underlined & bold**.

Species differences drive bat activity in urban versus forested plots. **Andy A. Sechrist** and C.L. Chambers (19-07) JUDGE

GREENHOUSE GAS EMISSIONS OF A SALINE SOIL AND NON-SALINE SOIL UNDER VEGETATION. **Douglas Fiedler**, David Clay, Stephanie Bruggeman, Cheryl Reese, Samuel Thies, Andrew Engel, Sharon Clay (19-09) JUDGE

Identification and Characterization of Mitogen-Activated Protein Kinase Kinase Kinase (MKKK) Genes in Sunflower (*Helianthus annuus* L.). **S. Neupane**, Schweitzer, S.E Schweitzer UG, S.N. Kaluwahandi UG, and M.P. Nepal (19-11) JUDGE

Mining Metagenomes for Bioplastics and other useful Bioproducts. **Tanvi Govil**, Wageesha Sharma, David R. Salem, and Rajesh K. Sani (19-14) JUDGE

QUAKING ASPEN GROWTH RATE WITHIN THE BLACK HILLS, SOUTH DAKOTA. **Zach Mergen**UG and Daryl E. Mergen (19-22)

Crystal Structure and Magnetism of (NdxCe1-x)YFe15 Alloys. **Thomas Ott**UG, B. Dahal, Y. Huh, and P. Kharel (19-39) JUDGE

Synthesis and Characterization of a Novel Heusler Alloy: Fe2MnSn. **Abdullahal A. Maruf**UG, B. Dahal, Y. Huh, and P. Kharel (19-38) JUDGE

Performance of Clonal Plant Buffalograss After Multiple Disturbances. **Luke Zilverberg**, Jacob Comer, and Lan Xu (19-37)

Studying physiological and molecular regulation of stomatal density and its relationships to water use efficiency in alfalfa. **Surbhi Gupta**, Krishna Ghimire, Arvid Boe, and Yajun Wu (19-35) JUDGE

Resistance Genes in Wheat (*Triticum aestivum* L.) Show Evidence of Tandem Duplication as a Mechanism for Functional Diversification. **E.J. Andersen**, J.M. Purintun, S. Neupane, and M.P. Nepal (19-34) JUDGE

Spatial Expression of Genes during Hydrotropism in Maize Roots. **Yafang Wang**, Muyu Gu, Mike Hildreth, and Yajun Wu (19-33)

Improved Wideband Performance Linear Antenna. **Thomas P. Montoya** and Andrew W. Downs (19-32)

Validation of the Transcriptomic Response of *Candida glabrata* to Treatment with Thymoquinone. **Kelsey D. Wood**UG, N. Malik, and C.M. Anderson (19-28) JUDGE

SEASONAL VARIATION IN TRICHOSTRONGYLE EGG SHEDDING IN A BISON HERD FROM EASTERN SOUTH DAKOTA. **J.B. McKenzie**, AT. HeienUG, P.S. HelisoUG, and M.B. Hildreth (19-25) JUDGE

A COMPUTER MONTE CARLO MODEL OF A SODIUM IODIDE SCINTILLATION DETECTOR TO CALIBRATE DATA OF RADIOACTIVE CONTAMINANTS. **W.W. Riley**UG and K.J. Keeter (19-24) JUDGE

Impacts of Heavy Winter-Patch Grazing and Wildfire on Arthropod Community Heterogeneity in Mixed-grass Prairie. **Alyssa Vachino**UG and Lan Xu (19-23) JUDGE

Evaluating Anti-Malarial Activity With N-Methylfluoxetine And Diphenylpropylamines. **Dillon Vanetti**UG and Dr. John Dixson (19-44) JUDGE

Investigating the Kinetics of Montmorillonite Clay-Catalyzed Conversion of Anthracene to Anthraquinone in the Context of Origins of Life Studies. Hope JuntunenUG, Lucas LeinenUG, Briann K. PittsUG, Kaytlyn N. SchaeferUG, Scott E. McKay, Samantha M. O’Hanlon, Bethany P. Theiling, Laura M. Barge, Patrick Videau, and **Michael O. Gaylor** (19-47)

Profiling Volatile Emissions from Sewage Sludge Land-Applied Across Washington State (USA) Using Headspace Sampling with Gas Chromatography-Mass Spectrometry (GC-MS) Determination**. Lucas J. Leinen**UG, Kaytlyn N. SchaeferUG, Vaille A. SwensonUG, Bailey A. MoodyUG, Hope L. JuntunenUG, Scott E. McKay, Silvia Beurmann, Samantha M. O’Hanlon, Richard C. Honour, Robert C. Hale, Patrick Videau, and Michael O. Gaylor (19-48) JUDGE

Profiling Volatile Constituents of Homemade Preserved Foods Prepared in Early 1950s South Dakota (USA) Using Solid-Phase Microextraction (SPME) with Gas Chromatography–Mass Spectrometry (GC-MS) Determination. **Lucas J. Leinen**UG, Vaille A. SwensonUG, Hope L. JuntunenUG, Scott E. McKay, Samantha M. O’Hanlon, Patrick Videau, and Michael O. Gaylor (19-49) JUDGE

**12:30**—Luncheon & Business Meeting--Wheeler

South Dakota Academy of Science

2017-2019 Executive Council

|  |  |
| --- | --- |
| President 2017-2019 | Vicki Geiser, and Freeman Regional Health Services, Foundation 925-2142, Vicki.Geiser@freemanregional.com |
| Vice President 2017-2019 | Tim Mullican, DWU, Biology995-2715, timullic@dwu.edu |
| Past President2017-2019 | George Mwangi, USF, Chemistry575-2069, George.mwangi@usiouxfalls.edu |
| Secretary  | Donna Hazelwood, DSU, Biology, (retired)256-5187, donna.hazelwood@dsu.edu |
| Treasurer | Jeffrey Palmer, DSU, Mathematics256-5190, Jeff.Palmer@dsu.edu |
| Proceedings Editor | Robert Tatina, DWU, Biology (retired)269-426-3744 rotatina@dwu.edu,  |
| Chair of Fellows Nominations Committee | Brian Patrick, DWU. Biology995-2712, brpatric@dwu.edu |
| Chair of Membership Committee | Paula Mazzer\*\*. DWU, Chemistry.995-2899, pamazzer@dwu.edu |
| Publicity | Thomas Montoya**\***, SDSM&T, EE, CENG394-2459, Thomas.Montoya@sdsmt.edu |
| Publicity | Steve Matzner, AU, Biology 274-4821 steven.matzner@augie.edu |
| Publicity | Paula Mazzer. DWU, Chemistry.995-2899, pamazzer@dwu.edu |
| Publicity  | Dave Bergmann, BHSU, Biology, 652-2420, DaveBergmann@bhsu.edu |
| Publicity | Robert Tatina, DWU, Biology (retired)269-426-3744; rotatina@dwu.edu,  |
| Publicity | Chun Wu, MMC, Chemistry,668-1381, cwu@mtmc.edu |
| Webmaster | Tim Mullican, DWU, Biology995-2715, timullic@dwu.edu |
| Member-at-Large2017-2019 | Mark Gabel, BHSU, Biology (retired)642-6251, Mark.Gabel@bhsu.edu |
| Member-at-Large2017-2019 | Brian Patrick, DWU. Biology995-2712, brpatric@dwu.edu |
| Member-at-Large2017-2019 | Adam Sturlaugson, USF, Chemistry331-6757, Adam.Sturlaugson@usiouxfalls.edu |
| Member-at-Large2016-2018 | Arvid Boe, SDSU, Plant Science688-4759, Arvid.Boe@sdstate.edu  |
| Member-at-Large2016-2018 | Xu Lan, SDSU, Department of Natural Resource Management 688-4564. Lan.Xu@sdstate.edu  |
| Member-at-Large2016-2018 | Matt Miller, SDSU, Education688-6274, Matt.Miller@sdstate.edu |
| Member-at-Large2016-2018 | Alyssa Kiesow, NSU, Biology626-7707, Alyssa.Kiesow@northern.edu |
| Member-at-Large2016-2018 | Paul Johnson, SDSU, Entomology688-4438, paul.johnson@sdstate.edu  |

\*elected VP for 2019-2021; \*\*elected VP for 2021-2023

**Upcoming Meeting Locations**

2020 Northern State University, Aberdeen, SD. Contact person Alyssa Kiesow

2021 Black Hills State University, Spearfish, SD

Notes