Montana Biofilm S&T Meeting
Draft AGENDA: July 17–19, 2018

Monday
July 16

6:00–8:30 pm
Registration & welcome reception
Larkspur Foyer, Hilton Garden Inn
Bozeman

Tuesday
July 17

7:30–8:00 am
Registration & continental breakfast
Larkspur Foyer, Hilton Garden Inn

8:00–8:10
Introductory remarks
Larkspur Ballroom
Matthew Fields, CBE Director
Paul Sturman, CBE Industrial Coordinator
Laura Wahlen, Research Scientist,
Baxter Healthcare,
Round Lake, IL

SESSION 1: Biofilm Methods

8:10–8:35
Biofilm drain remediation study: Biofilms in drains, a laboratory model
Charles Giambrone, Vice President, Technical Services, Rochester Midland Corp., Rochester, NY

8:35–9:05
Novel methods to study multispecies biofilms
Nuno Filipe Azevedo, Assistant Professor, Chemical Engineering, University of Porto, Porto, Portugal

9:05–9:35
3D printing of soft hydrogels for biofilm engineering
Jim Wilking, Assistant Professor, Chemical & Biological Eng., MSU, CBE

9:35–10:05 Networking Break

10:05–10:30
Shear stress mediates metabolism and growth in electroactive biofilms
Andrew Jones, Postdoctoral Researcher, Mechanical & Industrial Eng., Northeastern University, Boston, MA; CBE Young Investigator Awardee

10:30–11:00
The versatility of acoustic pressure shockwave technology in destroying biofilms
Iulian Cioanta, Vice President, Research & Development, SANUWAVE Health, Suwanee, GA

12:00–1:00 pm
Catered lunch, Hilton Garden Inn

Special Presentation:

1:00–1:30
Life in the human gut microbiome
Seth Walk, Assistant Professor, Microbiology & Immunology, MSU

SESSION 2: Bacteriophage and Biofilm

11:00–11:30
A bacteriophage integrase regulates virulence factor production by Pseudomonas aeruginosa
Pat Secor, Assistant Professor, Biological Sciences, University of Montana; CBE Young Investigator Awardee

11:30–12:00
A potential biocontrol strategy for healthcare facilities using a surfactant-supplemented bacteriophage cocktail for the control of carbapenemase-producing Klebsiella pneumoniae biofilms
Ariel Santiago, ORISE Research Fellow, Biofilm Laboratory, Centers for Disease Control, Atlanta, GA; CBE Young Investigator Awardee

SESSION 3: Strategic Communication and Data Resources

1:30–2:00
An overview of the BRaID project
Dave Millman, Assistant Professor, Gianforte School of Computing, MSU
Thiru Ramaraj, Bioinformatics Research Scientist, National Center for Genome Resources, Santa Fe, NM

2:00–2:30
Fostering a common vision to mobilize innovation across government, industry and academic partnerships
Jayne Morrow, Senior Science Policy Advisor, National Institute of Standards and Technology, Gaithersburg, MD

CBE Open House: Lab demonstrations and poster session
3:00–5:00
3rd Floor Barnard Hall, MSU
Schedule available onsite
Wednesday
July 18

7:30–8:00 am
Registration & continental breakfast
Larkspur Foyer, Hilton Garden Inn

SESSION 4:
Medical Biofilms

8:00–8:05
Session introduction
Garth James, Associate Research Professor, Chem. & Biological Eng., MSU; PI, Medical Biofilms Laboratory, CBE

8:05–8:15
Clinical efficacy of biofilm disruption technology developed with testing at the CBE
Alicia Tetlak, Microbiologist, Next Science LLC, Jacksonville, FL

8:15–8:45
Diabetic wound care in our veteran population
MaryCloud Ammons Anderson, Research Scientist, Idaho Veterans Research and Education Foundation, Boise VA Medical Center, Boise, ID

8:45–9:15
How bacteria in biofilms withstand antibiotics
Phil Stewart, Distinguished Professor, Chemical & Biological Engineering, MSU, CBE

9:15–9:45
Microplate hydrogel assay for antibiofilm testing
Kenneth Scott Phillips, Biofilms Research Group Leader, Center for Devices & Radiological Health, US Food & Drug Admin., Silver Spring, MD

9:45–10:15 Networking Break

10:15–10:45
Biofilm: The clinical dilemma
Eric Johnson, MD, Bozeman Health Wound and Hyperbaric Center, Bozeman, MT

10:45–11:15
Characterization of Mycobacterium chimaera biofilm formation on medical device materials
Archana Siddam, Commissioner’s Fellow, Winchester Engineering & Analytical Center, US Food & Drug Admin., Winchester, MA

11:15–11:45
Design, synthesis, and evaluation of prodrug antimicrobials to control biofilms
Danica Walsh, PhD Student, Chemistry & Biochemistry, MSU, CBE

11:45–12:00
Presentation of CBE awards
Matthew Fields

12:00–1:00 pm
Catered lunch, Hilton Garden Inn

SESSION 5:
Biofilm Physiology

1:00–1:30
Investigating single cell growth using drop-based microfluidic incubation
Shawna Pratt, PhD Student, Chemical & Biological Engineering, MSU, CBE

1:30–2:00
Heterogeneity in Pseudomonas aeruginosa populations
Tatsuya Akiyama, Postdoctoral Researcher, Microbiology & Immunology, MSU

2:00–2:30
Spatiotemporal mapping of oxygen in a microbially-impacted packed bed using 19F nuclear magnetic resonance oximetry
Jeffrey Simkins, PhD Student, Chemical & Biological Engineering, MSU, CBE

2:30–3:00
CRISPR-mediated defense and bacteriophage counter-defense in P. aeruginosa
MaryClare Rollins, Research Associate, Microbiology & Immunology, MSU

3:00–3:15
State of the CBE Address
Matthew Fields

3:30–5:00
Business Meeting
Hilton Garden Inn

Thursday
July 19

7:30–8:00 am
Registration & continental breakfast
Larkspur Foyer, Hilton Garden Inn

SESSION 6:
Biofilm Imaging

8:00–8:30
CBE imaging capabilities: An overview
Heidi Smith, Postdoctoral Researcher, CBE

8:30–9:00
Quantification of biofilm characteristics from images with error bars
Al Parker, Biostatistician, CBE; Assistant Research Professor, Mathematical Sciences, MSU

9:00–9:30
Characterizing the adhesion and rheology of biofilms using centrifuge force microscopy
Tom LeFevre, PhD Student, Chemical & Biological Engineering, MSU, CBE

9:30–10:00 Networking Break

SESSION 7:
Industrial Biofilms

10:00–10:30
Biofilms in industrial water handling systems: An overview of real-time biomonitoring and system performance
David Vela, Senior Research Scientist; Angela Delegard, Research Scientist, Chem-Aqua, Irving, TX

10:30–11:00
Microbial defacement of building materials
Erika Espinosa-Ortiz, Postdoctoral Researcher, CBE

11:00–11:30
Scale in water systems: A biomineral?
Adrienne Phillips, Assistant Professor, Civil Engineering, MSU, CBE

11:30–11:40 Meeting wrap up

Dinner
6:00 pm
Rockin’ TJ Ranch, Bozeman