Monday  
July 16

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

10:05–10:30  
3-D printing of soft hydrogels for biofilm engineering  
Reha Abbasi, PhD Student, Chemical & Biological Eng., MSU, CBE

10:30–11:00  
Shear stress mediates metabolism and growth in electroactive biofilms  
Andrew Jones, Postdoctoral Researcher, Mechanical & Industrial Eng., Northeastern University, Boston, MA; CBE Young Investigator Awardee

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  
Leticia Vega, Chair, CBE Industrial Associates Program; International Scientist, NASA, Houston, TX

SESSION 1:  
Biofilm Methods

8:10–8:35  
Partially aerated biofilm reactor model  
Dave Baker, Undergraduate Research Assistant, Chemical & Biological Eng., MSU, CBE

8:35–9:05  
Biofilm in drains laboratory model  
Griffin Jadwin, Technical Services Manager, Rochester Midland Corporation, Rochester, NY

9:05–9:35  
Novel methods to study multi-species biofilm  
Nuno Azevedo, Assistant Professor, Chemical Engineering, University of Porto, Porto, Portugal

9:35–10:05  
Networking Break

10:05–10:30  
3-D printing of soft hydrogels for biofilm engineering  
Reha Abbasi, PhD Student, Chemical & Biological Eng., MSU, CBE

10:30–11:00  
Shear stress mediates metabolism and growth in electroactive biofilms  
Andrew Jones, Postdoctoral Researcher, Mechanical & Industrial Eng., Northeastern University, Boston, MA; CBE Young Investigator Awardee

SESSION 2:  
Bacteriophage and Biofilm

11:00–11:30  
A bacteriophage integrase regulates virulence factor production by Pseudomonas aeruginosa  
Pat Secor, Assistant Professor, Div. of 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

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 3:  
Strategic Communication and Data Resources

1:30–2:00  
An overview of the Biofilm Resource and Information Database (BRAID)  
Brendan Mumey, Professor, Computer Science, MSU

2:00–2:30  
Networking and communication between industry and academia  
Jayne Morrow, Senior Scientific 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

8:00–8:15  
Session introduction  
Garth James, Associate Research Professor, Chem. & Biological Eng., MSU; PI, Medical Biofilms Laboratory, CBE

8:15–8:45  
Title TBA  
Mary Cloud Ammons, COBRE Junior Investigator, Idaho Veterans Research and Education Foundation, Boise, ID

8:45–9:15  
Antibiotics vs. wound biofilms  
Phil Stewart, Distinguished Professor, Chemical & Biological Eng., MSU, CBE
9:15–9:45  
**Endoscope cleaning**
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  
**Title TBA**
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 for targeting 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**
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

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

6:00 pm  
**Dinner**
Rockin’ TJ Ranch, Bozeman

---

**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  
**Image thresholding analysis**
Al Parker, Biostatistician, CBE; Assistant Research Professor, Mathematical Sciences, MSU

9:00–9:30  
**Biofilm imaging with optical coherence tomography**
Jim Wilking, Assistant Professor, Chemical & Biological Engineering, MSU, CBE

9:30–10:00  
**Networking Break**

---

**SESSION 7: Industrial Biofilms**

10:00–10:30  
**Removing biofilm with acoustic waves**
Iulian Cioanta, Vice President, Sanuwave Health, Alpharetta, GA

10:30–11:00  
**Investigating fungal/bacterial biofilms with a new reactor**
Erika Espinosa-Ortiz, Postdoctoral Researcher, CBE

11:00–11:30  
**Title TBA**
Adrienne Phillips, Assistant Professor, Civil Engineering, MSU, CBE

11:30–11:40  
**Meeting wrap up**

---

6:00 pm  
**Dinner**
Rockin’ TJ Ranch, Bozeman