

13th Annual CBSD CoBRE Research Symposium

The 13th Annual CBSD Center of Biomedical Research Excellence (CoBRE) Research Symposium will be hosted at the University of Montana; September 6th & 7th, 2024. The annual research symposium provides an opportunity for us to come together as a research community to discuss the latest research in our laboratories supported by the CBSD CoBRE. The symposium will begin with presentations from our Computational, X-ray, Mass Spectrometry and BioSpectroscopy Core Facilities, so attendees can learn more about how these facilities can move their research projects in new directions. The symposium will include lectures by Pilot Project Leaders who were supported by the CBSD NIH CoBRE grant and a selection of elevator talks by graduate students and postdoctoral fellows in advance of the poster session. We encourage undergraduate students to participate in the poster session, as well.

Friday, Sept. 6, 2024

11:30 – 12:50 – Lunch – EAC and CBSD Directors to discuss goals of meeting (Catered on campus in UC 327)

12:45 a.m. Check In Todd 203/204

1:00 – 4:30 p.m. OPEN SESSION: CBSD Core Facility Presentations, Todd 203/204

Last 5 minutes of each talk is reserved for questions

1:00 – 1:05 p.m.: CBSD Director Bruce Bowler; *“Welcome to CBSD Symposium”*

1:05 – 1:35 p.m.: Levi McClelland, ISBC Manager; *“ISBC Year 13: Protein production, crystallization and structure determination by X-ray and CryoEM”*

1:35 – 2:05 p.m.: Matt Sydor, BCRL Manager; *“BCRL Year 13: High resolution fluorescence imaging”*

2:05 – 2:35 p.m.: Dave Holley, MCCF Manager; *“MCCF Year 13: Methods for computer-aided drug discovery”*

2:35 – 3:00 p.m.: Break / Refreshments

3:00 – 3:30 p.m.: Dan Decato, Core Manager, SMXDC; *“SMXDC Year 13: Unveiling molecular structures. Leveraging X-ray and electron diffraction methods”*

3:30 – 4:00 p.m.: Eric Schultz, Core Manager, MSCF; *“MSCF Year 13: Proteomics and metabolomics capabilities of the MSCF”*

4:00 – 4:30 p.m.: Core Facility Tours

4:30 - 5:30 p.m. PRIVATE SESSION Core Facility Directors and Managers with EAC – meetings and tours of core labs

David Case (MCCF)

Betsy Goldsmith (ISBC and SMXDC)

Suzanne Scarlata (BCRL)

Debbie Wuttke (MSCF)

6:30 - 8:30 p.m. PRIVATE DINNER

EAC and Bruce at local restaurant.

Saturday, Sept. 7, 2024

8:30 - 9:00 a.m. Open Session Coffee and light pastries, Todd 203/204

9:00 – 11:15 a.m. OPEN SESSION: Pilot Project Presentations, Todd 203/204

Last 5 minutes of each talk is reserved for questions

9:00 – 9:30 a.m.: Travis Hughes; *“Investigating the formation of biomolecular condensates of nuclear receptors and their cofactors”*

9:30 – 10:00 a.m.: Beverly Piggott; *“Transforming stem cell Identity with calcium”*

10:00 – 10:30 a.m.: Steve Lodmell; *“RIOK3 is a polyubiquitin-seeking effector of the innate immune response pathway”*

10:30 – 10:45 a.m.: Refreshments and Break

10:45 – 11:15 a.m. Andrew Rau; *“Structural plasticity of medial prefrontal somatostatin neurons during consolidation of learned fear”*

11:15 a.m. – noon OPEN SESSION Todd 203/204

CBSD Director Bruce Bowler; *“Overview of Phase III Year 3”*

noon – 1:30 p.m. PRIVATE LUNCH: EAC/IAC CBSD Directors with VPR Scott Whittenburg, UC 327

CBSD: Bowler & Anderson

EAC: Case, Goldsmith, Scarlata, Wuttke

IAC: Bridges, Briknarova, Hansen, Lodmell, Palmer, Piggott, Putnam

VPR: Whittenburg

Noon – 1:30 p.m. OPEN SESSION: Lunch and Socializing

1:30 – 2:30 p.m. OPEN SESSION: Plenary Talk, Todd 203/204

Borries Demeler, University of Lethbridge, Department of Chemistry and Biochemistry,
Canada 150 Research Chair for Biophysics, Director, Canadian Center for Hydrodynamics, Director,
University of Montana AUC facility

“What AUC can do for you – an overview of NRCH services”

2:30 – 3:00 pm Elevator talks, Todd 203/204

- 1 Michael Rothfuss Protein Conformer Analysis and Selection with EmCAST
- 2 Philip Serwer Alzheimer’s Disease: A Molecular Model and an Implied Path to Improved Therapy
- 3 Gabriella Weiss It takes a crowd to keep FBF in check-Multiple E3 ligases regulate FBF accumulation in *C. elegans* germline
- 4 Joachim Veit Prototyping and Characterization Core: Bringing Microfabrication and New Capabilities to UM

3:00 – 5:00 pm Poster Session with iced tea and cookies, Todd 203/204

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| 1 | Connor Abel | Crystallization of Novel Receptor-Ligand Structures of Nuclear Receptors |
| 2 | Brad Benjamin | The Structural Effects of Nanobodies Towards G α i |
| 3 | Kassie Boshae | Predicting Stabilizing Mutations to 11FN3 with EmCAST |
| 4 | Lydia Garrick | Characterization of Transcription Factor PPAR γ in Biomolecular Condensates |
| 5 | Bernice Lin | Calcium Regulation of Neural Stem Cell Identity |
| 6 | Reece Lott | The Nuclear Receptor FXR: Ligands induce conformational changes as seen through Helix 12 and Helix 3 19F-NMR |
| 7 | Bethany Miller | Predicting Multiple Conformations of Nuclear Receptors Using AlphaFold2 and Clustered Sequence Alignments Based on Evolutionary Conservation. |
| 8 | Nick O'Connor | Agonists recruit the corepressor NRIP1 in a biased manner. |
| 9 | Trazz Pepper | Guanine Nucleotide Exchange with Ric-8A Mutants |
| 10 | Michael Rothfuss | Protein Conformer Analysis and Selection with EmCAST |
| 11 | Erin Ryan | The Investigation of the Role of dnhe3 in Neural Development |
| 12 | Kyle Sease | Elucidating the binding site and designing a pre-clinical trial for butyrate: A novel positive allosteric modulating treatment for a neurological phenotype associated with pediatric SLC6A1 disease |
| 13 | Philip Serwer | Alzheimer's Disease: A Molecular Model and an Implied Path to Improved Therapy |
| 14 | Asher Swan Adams | A Better than Basic Understanding of pH: Sodium Proton Exchangers (Nhes) Regulation of Neural Development |
| 15 | Joachim Veit | Prototyping and Characterization Core: Bringing Microfabrication and New Capabilities to UM |
| 16 | Andrew Voss | Designing Novel Compounds to PPAR γ using Free Energy Perturbation |
| 17 | Gabriella Weiss | It takes a crowd to keep FBF in check-Multiple E3 ligases regulate FBF accumulation in <i>C. elegans</i> germline |
| 18 | Cindee Yates-Hansen | What AUC can do for you – an overview of NRCH services |

4:30 p.m. - 5:30 p.m. PRIVATE SESSION for EAC and CBSD directors, Todd 205

EAC meet with CBSD Director and Director of Strategic Financial Planning to discuss their evaluation of progress, annual report and recommendations

6:00 – 9:00 p.m. Dinner at Ten Spoon – Catered by Pangea's River & Range