Meet the CREAIT Network!

Join us for a virtual introduction to some of the services, tools, and instrumentation supported by the research scientists and systems administrators of the CREAIT Network. Each ~15 minute presentation will be followed by a brief Q&A session.

9:30 – 9:40 **Welcome**
Dr. Brent Myron – Associate Director (interim), SIRI

SESSION 1: Autonomous Vehicles, Ocean Sciences, Chemistry

Autonomous Ocean Systems Centre (AOSCENT)

9:40 – 10:00 **Introducing the Autonomous Ocean Systems Centre**
Gina Millar – Research Laboratory Coordinator

Aquatic Research Cluster (ARC)

10:00 – 10:20 ARC – Chemical Oceanography - Services We Provide
Jeanette Wells – Research Laboratory Coordinator

"A brief overview of services offered and equipment available at the Lipid Labs at the Ocean Sciences Centre in Logy Bay."

Centre for Chemical Analysis, Research, and Training (C-CART)

10:20 – 10:40 A tour of the Mass Spectrometry Facility
Dr. Stefana Egli – Research Laboratory Coordinator, Adjunct Professor (Chemistry)

"A relatively unknown sample will be used as a guide to explore all the possible mass spectrometry options available in the CCART-MS facility."

10:40 – 11:00 Break

SESSION 2: Chemistry, Geophysics Computing

11:00 – 11:20 **The application of single crystal X-ray diffraction: beyond simple structure characterization**
Dr. Jian-Bin Lin – Research Laboratory Coordinator

"Single crystal X-ray diffraction is the most important analytical tool to study the structure-properties relationship. In this talk, I will discuss the application of single crystal X-ray diffraction on single crystal proton conduction, structural characterization of intermediate phase, single-crystal-to-single-crystal transformations, and so on."

11:20 – 11:40 **NMR: more than a pretty proton!**
Dr. Céline Schneider – Research Laboratory Associate, Adjunct Professor (Chemistry)

"Nuclear Magnetic Resonance, NMR, is a tool well known and used by chemists and others to confirm the structure of their compounds. To do so, the researchers rely mostly on routine 1H NMR and sometimes, for more complicated molecules, on 13C NMR or 2D correlations NMR. However, NMR can bring much more to the research table. This short presentation will show examples dynamic studies and diffusion, 3D and nD data collection, the great under-utilized toolbox that is solid-state NMR and some micro-imaging, all techniques available in C-CART."

Computing Simulation and Landmark Visualization (CSLV)

11:40 – 12:00 **Services offered by the CSLV**
Peter Bruce – Research Laboratory Coordinator

12:00 - 1:00 **Lunch**

SESSION 3: Information Technology, Earth Sciences

CREAIT Information Systems Group (CREAIT-ISG)

1:00 – 1:20 **CREAIT-ISG: Supporting Research Instrumentation**
Marc Bolli – Manager, CREAIT-ISG
Ken Langdon – Systems Administrator

MicroAnalysis Facility (MAF)

1:20 – 1:40 **Sulfur Isotopes in Sulfides using Secondary Ion Mass Spectrometry (SIMS)**
Glenn Piercey – Research Laboratory Coordinator

"Sulfur isotopes are used to understand the sources of metals and sulfur in metal deposits around the world. Central Newfoundland is home to a number of different deposits called massive sulfide deposits that have resulted in gold production from the area. In-situ sulfur isotope SIMS analyses done at the CREAIT Microanalytical Facility allow researchers to investigate sulfides such as pyrite, chalcopyrite, galena, pyrrhotite and arsenopyrite to help understand deposit formation."

1:40 – 2:00 **An Introduction to Laser Ablation ICP-MS**
Dr. Rebecca Lam – Research Laboratory Coordinator
Dr. Markus Wälle – Research Laboratory Coordinator

"We will be explaining how LA-ICP-MS works and showing examples of applications that can be done in our lab."

2:00 – 2:20 **Exploring the research capabilities and applications of CREAIT's SEM-MLA facility**
Dylan Goudie – Research Laboratory Coordinator
Dr. Dave Grant – Manager of Operations (CREAIT Network), Research Laboratory Coordinator

2:20 – 2:40 **Break**

SESSION 4: Earth Sciences

The Earth Resources Research and Analysis (TERRA) Facility

2:40 – 3:00 **PXRD, SEM, and EPMA Facility**
Dr. Wanda Aylward – Research Laboratory Associate

"I will be showing our PXRD, SEM and EPMA facility, instruments and examples of applications that can be done in this lab"

3:00 – 3:20 **Lapidary and Crushing Labs**
Matt Crocker – Research Assistant

3:20 – 3:40 **Stable Isotope Laboratory (SIL) Facility**
Dr. Joanna Potter – Research Laboratory Coordinator
Dr. Geert Van Biesen – Research Laboratory Associate

3:40 – 4:00 **Thermal Ionization Mass Spectrometry (TIMS) Facility**
Sherri Strong – Research Laboratory Coordinator

4:00 **Concluding remarks**