

**IUMAS8** June 11-16, 2023  
Banff, AB Canada

# Program Overview

**Conference:** June 11 – 15, 2023

Kinnear Centre for Creativity & Innovation  
Banff, AB, Canada

**FIB SEM**

**IUMAS**

**CCEM**  
Canadian Centre for Electron Microscopy

**MSC·SMC**  
Promoting microscopy since 1972

**SFR**  
SYSTEMS FOR RESEARCH

**SOQUELEC** **JEOL**

# FULL MEETING OVERVIEW

## Sunday, June 11, 2023

JSM-MSc Satellite Meeting: 4:55 – 9:40 pm  
 ZOOM Meeting ID: 812 8134 4380, Passcode: 102697

## Monday, June 12, 2023

IUMAS & MAS Workshops / Welcome Reception

8:00	Registration		
8:45	MAS Workshop (KC 203)	9:00	IUMAS Workshop (KC 201)
10:40	Break	10:30	Break
11:00	MAS Workshop cont.	IUMAS Workshop cont'd	
12:20	Lunch	12:30	Lunch
13:20	MAS Workshop cont'd	13:30	IUMAS Workshop cont'd
15:00	Break	15:00	Break
15:20	MAS Workshop cont'd	15:30	IUMAS Workshop cont'd
17:45	Registration/Welcome Reception		

## Tuesday, June 13, 2023

IUMAS Meeting / FIB SEM Meeting / MSC Biological Sciences

8:30	Registration		
9:00	IUMAS Meeting (KC 203)	FIB SEM Meeting (KC 201)	
10:30	Break / Exhibition		
11:00	IUMAS Meeting cont'd	FIB SEM Meeting – Bio Focus	
12:30	Lunch / Exhibition / IUMAS Executive Meeting / MSC Executive Meeting		
14:15	IUMAS Meeting cont'd	FIB SEM Meeting cont'd	MSC – Bio Sciences (KC 101)
15:45	Break / Exhibition		
16:15	IUMAS Meeting cont'd	FIB SEM Meeting cont'd	MSC - Bio Workshop ( KC 101)
18-21	Poster Session / Exhibition		

# FULL MEETING OVERVIEW

Banquet:	KC 103	MSC Executive Meeting:	KC 202
Break / Exhibition:	KC 200 Galleria & KC 205	MSC Business Meeting:	KC 203
IUMAS Executive Meeting:	KC 206	Poster Session:	KC 200 Galleria & KC 205
Lunch:	Vistas Dining Room	Welcome Reception:	KC 200 Galleria & KC 205

## Wednesday, June 14, 2023

Joint IUMAS & MSC Meeting / Banquet

9:00	Plenary Physical Sciences (KC 203 / 201)	
9:45	Plenary Biological / Materials Sciences (KC 203 / 201)	
10:30	Break / Exhibition	
11:00	TEM / STEM / Analytical (KC 203)	Biological Sciences (KC 201)
12:30	Lunch / Exhibition	
14:15	TEM / STEM / Analytical cont'd	Biological Sciences cont'd
15:45	Break / Exhibition	
16:15	Material Applications cont'd	Biological Sciences cont'd
18 – 22	Banquet	

## Thursday, June 15, 2023

Joint IUMAS & MSC Meeting

9:00	Keynote Physical Sciences (KC 203 / 201)	
9:45	Keynote Biological Sciences (KC 203 / 201)	
10:30	Break / Exhibition	
11:00	Material Applications cont'd (KC203)	Biological Sciences cont'd (KC 201)
12:30	Lunch / Exhibition	
14:15	Spectroscopy/Spectromicro. (KC 203)	13:45 SEM/ESEM/in situ (KC201)
15:45	Break / Exhibition	15: 15 Break / Exhibition
16:15	Spectroscopy/Spectromicro. cont'd	15:45 Data Processing/Correlative (KC 201)
17:30	MSC Business Meeting (KC 203)	

# PROGRAM

Sunday, June 11, 2023

4th Annual Joint Workshop Microscopical Society of Canada & Japanese Society of Microscopy

ZOOM Meeting ID: 812 8134 4380 Passcode: 102697

Hybrid meeting: virtual and in-person

## Limits of electron and ion beam analysis and their application to nanoscience

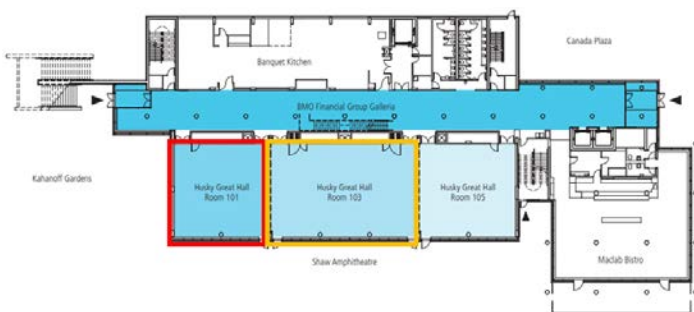
Electrons and ions allow imaging, chemical and structural analysis at sub-nanometer scale in many materials of interest to physical and biological sciences. The practical limits can arise from the instrumentation, the interactions responsible for the measured signal and, ultimately, by radiation damage inflicted on the studied sample by the incident beam. Presentations in this year's symposium discuss the practical aspects of pushing the boundaries of electron and ion microscopy instrumentation, and the practical problems applying the electron and ion beam analysis to real-world samples in physical and biological sciences.

Time (Edmonton)	Time (東京)	Name	Title
16:55	7:55	Ken Harada; Marek Malac	Opening Remarks
17:00	8:00	Takehito Seki	Direct Electromagnetic Field Imaging at Defects by Differential Phase Contrast Scanning Transmission Electron Microscopy
17:30	8:30	Nadi Braidy	Encapsulation of dyes in carbon nanohorns
18:00	9:00	Cathal Cassidy	Gas-based charge compensation measured by off-axis holography in environmental TEM
18:30	9:30	Martin Coulliard	Disentangling EELS signals from optical modes in photonic and plasmonic nanoparticle dimers and trimers
19:00	10:00	Koudai Niitsu	Magnetic configurations of a skyrmionic vortex stabilized in FeGe nanoparticles
19:30	10:30	Nabil Bassim	Insights about Atomic-Scale Heteroepitaxy based on Correlative Electron Microscopy of Van der Waals Heterostructures
20:00	11:00	Makoto Schreiber	Lensing charged particles with the magnetic vector potential
20:30	11:30	Makoto Kuwahara	Time-Resolved Measurement in TEM using a Semiconductor Photocathode
21:00	12:00	Alyssa Williams	Improved Visualization of Bone Ultrastructure in 3D FIB-SEM
21:30	12:30	Natalie Reznikov	The ultrastructure of bone in 3D: A twist of twists
22:00	13:00	Shigeo Mori,;Misa Hayashida	Closing Remarks

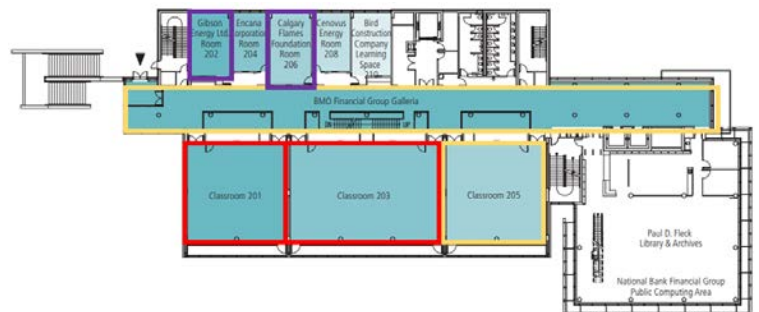
## MAP

Banquet:	KC 103	MSC Executive Meeting:	KC 202
Break / Exhibition:	KC 200 Galleria & KC 205	MSC Business Meeting:	KC 203
IUMAS Executive Meeting:	KC 206	Poster Session:	KC 200 Galleria & KC 205
Lunch:	Vistas Dining Room	Welcome Reception:	KC 200 Galleria & KC 205

Ground Floor



Second Floor



# PROGRAM

## Monday, June 12, 2023

### MAS Workshop: Open-Source Data Analysis (KC 203)

Organizers: Andy Herzing & Josh Taillon, National Institute of Standards and Technology

MAS is pleased to sponsor a topical workshop on Open-source software tools for microanalysis, taking place as part of IUMAS-8: The 8th Meeting of the International Union of Microbeam Analysis Societies in Banff, Alberta. This workshop will be highly interactive and aims to provide attendees with the skills necessary to feel comfortable running their own analyses using the various software packages and methods presented.

Time	Name	Title
8:45	Andy Herzing & Josh Taillon, National Institute of Standards and Technology	Welcome: Workshop Goals
9:00	Francisco de la Pena, Université de Lille	Hyperspy
10:00	Carter Francis, University of Wisconsin-Madison	Pyxem
10:40	Break	
11:00	Jonas Lähnemann, Paul Drude Institute for Solid State Electronics	LumiSpy
11:40	Hakon Anes, Norwegian University of Science and Technology	Kikuchipy
12:20	Lunch	
13:20	Colin Ophus, National Center for Electron Microscopy	py4DSTEM
14:20	Kevin Roccapriore, Oak Ridge National Lab	Machine Learning
15:00	Break	
15:20	Nicholas Ritchie, National Institute of Standards and Technology	NexL
16:00	Michael Jackson, BlueQuartz Software, LLC	DREAM.3D
16:40	Marcus Hanwell, Brookhaven National Laboratory	Tomography and Open-Source Software
17:20	Andy Herzing & Josh Taillon	Closing Remarks: Wrap -up
17:45	Welcome Reception	

### IUMAS Workshop: Quantitative Microanalysis and Microfluorescence Imaging (KC 201)

Organizers: Gianluigi Botton, McMaster University and Canadian Light Source and Colin MacRae, CISRO

This full day workshop consists of two components. The first part of the workshop aims to cover the theory and practical aspects of microanalysis of complex materials where quantification is challenging due to the sensitivity of the samples to the electron beam interaction. The second part of the workshop covers the application of state-of-the-art microfluorescence imaging carried out within scanning electron microscopes, the comparison with EDS imaging in SEM, and the use of synchrotron light sources for macro-micro-nano scale imaging of a broad range of materials.

Time	Name	Title
9:00	Gianluigi Botton and Colin MacRae	Overview of the Workshop
9:00	Nick Wilson, CISRO	Advanced Analysis of Minerals: sample preparation, cryo-microanalysis, quantification, matrix corrections, Soft XES for characterization of materials
9:45	Karsten Goemann, University of Tasmania	RE analysis using overlap corrections
10:30	Break	
11:00	Colin MacRae, CISRO	Cathodoluminescence and cryo-CL
12:30	Lunch	
13:30	Gianluigi Botton, McMaster University and Canadian Light Source	Overview of synchrotron techniques, combining photon and electron beam techniques
14:15	Andrea Somogyi, Synchrotron SOLEIL	X-ray optics for chemical imaging, detectors, X-Ray Fluorescence, X-Ray Absorption Spectroscopy imaging
15:00	Break	
15:30	Ibi Bondici, Canadian Light Source	Applications of Microfluorescence Imaging
16:00	Thomas Lam, Smithsonian Institution	Comparison of EDS and Microfluorescence Imaging in the SEM
17:00	All Speakers	Q&A Session on the workshop
17:45	Welcome Reception	



# PROGRAM

Tuesday, June 13, 2023

Keynote Presentation (KC 203 & KC 201)



**FIB SEM: Michael Phaneuf (9 AM – 9:45 AM)**

An Imperfectly Recollected History of FIB in Canada (K01)

## IUMAS Meeting (KC 203)

Time	ID	Name	Title
9:00	I01	Dale Newbury	Challenges in Low Beam Energy Electron-Excited X-ray Microanalysis with Energy Dispersive Spectrometry (EDS)
9:30	C01	Paul Carpenter	Advances in Quantitative EPMA Compositional Mapping Applied to Meteorites
9:45	C02	Colin MacRae	Measurement and correction of optical response in an EPMA
10:00	C03	Nicholas Ritchie	Comparing Direct-Fit and Filter-Fit k-ratios from EDS Spectra
10:15	ECS1	Alan Salek	Microstructural Study of Carbon Phases in Ureilite Meteorites using Electron Microscopy
11:00	I02	Nick Wilson	Cathodoluminescence and Soft X-ray Characterisation of Meteorite Samples using an EPMA
11:30	C04	Edward Vincenzi	Quantitative Assessment of X-ray Attenuation under Atmosphere to Vacuum Conditions
11:45	C05	Dawei Gao	Neural network-based MC X-ray for quantitative analysis of elements
12:00	I03	Karsten Goeman	Spectral cathodoluminescence and trace element mapping of apatite from the Ernest Henry deposit, Australia
14:15	I04	Philippe Jonnard	X-ray spectroscopy of lithium
14:45	C06	Khalil Hassebi	Detection of Li K Emission In Different Lithium Compounds
15:00	C07	Raynald Gauvin	Towards Quantitative Maps of Lithium in the Electron Microscope
15:15	C08	Yinuo Li	Quantitative Analyzation on Aluminum Alloys
15:30	C09	Jonas Lähnemann	Temperature-Dependent Generation Volume in Semiconductors Under Electron Beam Excitation
16:15	I05	Andrea Somogyi	Multilength-scale and multimodal scanning hard X-ray imaging and tomography of mesoscale samples
16:45	ECS2	Hadas Sternlicht	4D-STEM Characterization of Microstructural Transformations in Conductive Polymers Used for Li-ion Battery Anodes
17:00	ECS3	Juhyeok Lee	Advanced 3D Imaging via Multislice Electron Tomography using 4D-STEM
17:15	ECS4	Shenlan Yang	Micro-alloyed and ultralight elements in nano-scale precipitates in Al-Cu-Mg-Ag and Al-Cu-Li alloys revealed using atomic-resolution scanning transmission electron microscopy
17:30	C10	Robert Stroud	TESCAN TENSOR a 4D-STEM for Multimodal Characterization of Challenging and Interesting Specimens

## FIB SEM Meeting (KC 201)

Time	ID	Name	Title
9:00	K01	Michael Phaneuf	An Imperfectly Recollected History of FIB in Canada
9:45	C11	Julia Deitz	Prospects of Full-scale Device Characterization via Ultra Short Pulsed Lasers with Dual Focused Ion Beams
10:00	C12	Guozhen Zhu	Controlling the Morphology of Rutile Nanowires by Focus-Ion-Beam Irradiation
10:15	C13	Bhaveshkumar Kamaliya	Beyond Direct Milling by FIB: Peculiar Self-Organization, Self-Assembly and Site-Specific Defect Engineering on the Surfaces
11:00	I06	Natalie Reznikov	The ultrastructure of bone in 3D: A twist of twists
11:30	C14	Alyssa Williams	Enhanced Visualization of Collagen Fibril and Mineral Ellipsoids in Bone Tissue Using FIB-SEM Nanotomography and Advanced Analysis Tools
11:45	C15	Mehdi Mosayebi	3D Reconstruction and Characterization of Lath Martensite in 13Cr-4Ni Stainless Steels Using PFIB-EBSD Serial Section Tomography
12:00	C16	Jiri Dluhos	FIB-SEM Tomography: Measuring Slice Thickness With Ga And Xe Ion Species FIBs And Stage Rocking
14:15	I07	Xiangli Zhong	Optimization, Minimising and Elimination of FIB Induced Defects
14:45	C17	Brenton Knuffman	High-Resolution FIB and SIMS with a Cesium Low Temperature Ion Source
15:00	C18	Jamie Ford	ToF-SIMS on a Plasma FIB: Dos and Don'ts
15:15	C19	Cheryl Hartfield	Novel LaserFIB Sample Preparation of Pillar Arrays For Synchrotron Imaging
15:30	C20	Jaroslav Kastyl	Automated preparation of high-quality lamellae using artificial intelligence assessed by 4D-STEM multimodal analysis
16:15	I08	Annalena Wolff	Scanning Transmission Helium Ion Microscopy – How Does It Compare to TEM?
16:45	ECS5	Maria Wątroba	Experimental analysis of plastic deformation in single-crystalline and ultrafine-grained Zn micropillars
17:00	C21	Rick Passey	Practical Applications of the Multi-Ion Species Plasma Focused Ion Beam
17:15	C22	Yang Yu	The next generation FIB source: GaBiLi ions for 2D and 3D ion microscopy
17:30	C23	Patrick Phillips	A new FIB/SEM for TEM sample preparation workflow

# PROGRAM

Tuesday, June 13, 2023

## MSC Biological Sciences (KC 101)

Time	ID	Name	Title
14:15	C24	Marc McKee	The Stenciling Principle for Extracellular Matrix Mineralization
14:45	C25	Ahmad Jomaa	The translating bacterial ribosome at 1.55 Å resolution by open access cryo-EM
15:15	C26	Jose Moran-Mirabal	Visualizing Cellulose Nanostructure with High Resolution Microscopy

## MSC Biological Sciences Workshop (KC 101)

Organizers: Joey Davis, MIT; Joaquin Ortega, McGill University

This workshop will start by describing the cryoDRGN tool and capabilities for cryo-EM image classification. This introduction will be done by Dr. Joey Davis (MIT) who is part of the cryoDRGN developing team. The second hour of the workshop will be a discussion panel on currently available tools in image classification and how to deal with heterogeneous specimens.

## Posters (Second Floor Galleria)

Session	ID	Name	Title
IUMAS	P01	James J. Dynes	Distribution and Speciation of Selected Elements in Insect Wings
IUMAS	P02	Joesph Stitsky	Exploring Phase in Soft X-ray Spectroptychography
FIB SEM	P03	Stéphanie Bessette	3D EDS-EBSD and segmentation of battery materials
Bio Sciences	P04	Khalid Al-Naemi	Low tension attachments are capable of chromosome capture
Bio Sciences	P05	Shannon Sim	Phosphoregulation of $\gamma$ -tubulin regulates anti-parallel microtubule bundling through kinesin-5
Bio Sciences	P06	Eran Ittah	The Cornea Conundrum: How to Balance High Resolution and Context While Preserving Native Tissue Architecture
TEM / STEM / Analytical	P07	Sajad Shakerin	High-resolution characterization of additively manufactured bimetal using focus ion beam milling
TEM / STEM / Analytical	P08	Ken Harada	Observation of Magnetic Bubbles in $\text{BaFe}_{12-x}\text{Sc}_x\text{Mg}_6\text{O}_{19}$ by Lorentz Microscopy and Electron Holography
TEM / STEM / Analytical	P09	Anitha Jose	Investigation of InGaN/GaN NW p-i-n junctions using Electron Holography

# PROGRAM

Wednesday, June 14, 2023

## Plenary Presentations (KC 203 / 201)



**Physical Sciences: C. Shan Xu (9 AM – 9:45 AM)**  
Enable discoveries in life science using enhanced FIB-SEM (P01)



**Biological / Material Sciences: Harald Hess (9:45 AM – 10:30 AM)**  
Review of Large Volume Imaging with Electrons and Cryo-Super-Resolution Microscopy (P02)

## TEM / STEM / Analytical (KC 203)

Time	ID	Name	Title
11:00	I10	Maureen Lagos	Unveiling thermal properties of nanoscale cavities using electron spectroscopy
11:30	C27	Marek Malac	NanoMi: an Introduction to an Open-Source Electron Microscope
11:45	C28	Peter Neathway	Quantification of Entanglement Between Aloof Swift Electrons and Geometrically Fractal Nanoprisms
12:00	C29	John Donovan	The Holy Trinity of Microanalysis: Standards, K-ratios and Physics
12:15	C30	Francisco de la Peña	Progress on applications of event-driven direct electron detectors to electron microscopy
14:15	I11	Vaso Tileli	Solid-liquid-gas interfacial phenomena and quantification of reaction product in liquid phase electron microscopy
14:45	ECS6	Gabriel T. Santos	Structural, chemistry, and electronic state of the interfaces of transparent conducting oxide and hematite applied in photoelectrocatalysis
15:00	C31	Carter Francis	A Method for Spatial Sampling of Metallic Glass Structure and Evolution Using 4-D STEM and Time Resolved 4-D STEM
15:15	C32	Kenneth Beyerlein	Watching Phase Transformations with a Dynamic Transmission Electron
15:30	C33	Arthur Blackburn	Sub-Ångström Resolution Imaging at 20 keV in a Scanning Electron Microscope from Ptychography with Integrated Projection Lens Distortion Correction

## Materials Applications (KC 203)

Time	ID	Name	Title
16:15	I12	Marc Willinger	Applications of Environmental SEM as In-Situ Surface-Science Tool with Atomic Layer Sensitivity
16:45	C34	Venkata Kuppili	High Resolution X-ray Ptychography at the Cryo STXM endstation, Soft X-ray Spectromicroscopy (SM) Beamline, Canadian Light Source
17:00	C35	Christian Vollmer	Functional chemistry of extraterrestrial organic matter revealed by high spatial resolution synchrotron spectroscopy – electron microscopy techniques
17:15	C36	Emmanuelle Brackx	Corium materials characterizations through electron microscopy and X-ray diffraction
17:30	C37	Nadi Braidy	Carbon Nanohorn Assembly and Structure Revealed by Aberration- Corrected Transmission Electron Microscopy

## Biological Sciences (KC 201)

Time	ID	Name	Title
11:00	I12	Ian Dobbie	CryoSIM: the trials and tribulations of correlative super resolution cryo fluorescence imaging
11:30	C38	Jinyang Liang	Single-shot Photoluminescence Lifetime Imaging Microscopy using Compressed Sensing
11:45	C39	Polina Beskrovnaya	Outer membrane biogenesis in <i>Acetonebacterium longum</i>
12:00	C40	Dominic Arpin	Cooperativity of ribosome associated GTPases in the assembly of the bacterial ribosome
12:15	I13	Joe Davis	Visualizing Massive Macromolecular Complexes in Motion with Cryo-EM, Cryo-ET, and Deep Learning
14:15	I14	Elitza Tocheva	Studies of the bacterial cell envelope using advanced imaging approaches
14:45	C41	Susanne Bechstedt	Multiscale imaging of microtubules
15:00	C42	Jackie Vogel	Interrogating the properties of a microtubule (+) end-associated nanoscale condensate in living cells using super-resolution microscopy
15:15	I15	William Hancock	From iSCAT to SCATTIRSTORM: Adventures in single-molecule microscopy
16:15	I16	Gili Naveh	Non-uniformity of the periodontal ligament: the dense collar in 3D
16:45	C43	Toni Tang	Lactation-induced changes in bone cellular and sub-cellular networks: indication for altered bone mineral transport
17:00	C44	Joaquin Ortega	RbgA Ensures the Correct Timing in the Maturation of the 50S Subunits Functional Sites
17:15	C45	Mouhanad Babi	Studying the hierarchical structure and nanoscale dislocations of bacterial cellulose using sr-CLEM
17:30	C46	Joseph Deering	The Three-Dimensional Structure of the Gecko Eggshell



# PROGRAM

Thursday, June 15, 2023

Keynote Presentations (KC 203 / 201)



Physical Sciences: Takehito Seki (9 AM – 9:45 AM)

Advanced Phase Imaging in Scanning Transmission Electron Microscopy (K02)

Biological Sciences: Peijun Zhang (9:45 AM – 10:30 AM)

Multi-scale imaging by cryoEM: from cellular volumes to molecules at near-atomic resolution (K03)



## Materials Applications (KC 203)

Time	ID	Name	Title
11:00	C47	Kodai Niitsu	Determination of magnetic exchange stiffness by measuring magnetic domain wall width
11:15	C48	Babafemi Agboola	Imaging and Spectroscopy of Kagome Lattice $YCr_6Ge_6$
11:30	C49	Jingyi Qu	Elucidating Structural and Chemical Modification of Ambient-Conditioned $LiNi_{0.8}Mn_{0.1}Co_{0.1}O_2$ with a Lithium Boron Carbon Oxide Coating with Analytical Electron Microscopy and X-ray Absorption Spectroscopy
11:45	C50	Robert Klie	Discovery of 1-dimensional $TiO_2$ lepidocrocite
12:00	C51	Martin Couillard	Nanomineralogy in mining and environmental research
12:15	C52	Rodney Herring	Phase Imaging Dislocation Strain Annihilation at Crystal Surface Forming Pit

## Spectroscopy / Spectromicroscopy (KC 203)

Time	ID	Name	Title
14:15	I17	Ann Chiaramonti	Atom Probe Tomography Using Wavelength-Tunable, Femtosecond-Pulsed Coherent Extreme Ultraviolet Radiation
14:45	C53	Ka Yin Lee	Hyperbolic Phonon Polaritons in Twisted Bilayers Revealed by Electron Energy Loss Spectroscopy
15:00	C54	Marcelo Martinho	Vibrational Spectroscopy of Single Molecular Nanocrystals in the Electron Microscope
15:15	C55	Pia Schweizer	Quantitative electron probe microanalysis of lithium in different materials including battery compounds
15:30	ECS7	Takahiro Ozawa	Isotope effect on lattice location of hydrogen in titanium hydride nanofilms revealed by Channeling NRA
16:15	C56	Heather Lowers	Cathodoluminescence Response of Barite at Room and Liquid Nitrogen Temperatures
16:30	C57	Isobel Bicket	Probing Near- and Far-Field Responses of the Magnetic Dipole Mode in a Plasmonic Split Ring Resonator
16:45	C58	Milenka Andelic	Investigation of structure and chemical properties of core/shell germanium/germanium-tin nanowires
17:00	C59	Bradley De Gregorio	EELS Characterization of Niobium Oxide Memristor Devices

## Biological Sciences (KC 201)

Time	ID	Name	Title
11:00	I18	Monica Pillon	Defining How Ribonucleases Regulate Gene Expression
11:30	C60	Jingyu Sun	Dissecting the role of the universally conserved protein KsgA in the maturation process of 30S ribosomal subunit
11:45	C61	Amal Seffouh	Novel insights into the role of the YsxG GTPase in the assembly of the 50S ribosomal subunit revealed by Cryo-EM
12:00	C62	Ameena Hashimi	Cell Envelope Architecture of Chloroflexi Revealed by Cryo-Electron Tomography
12:15	I19	Matthew McCallum	Antigenic mapping with single particle cryoEM to reveal sites of vulnerability and immune evasion for SARS-CoV-2 variants

## SEM / ESEM / in situ (KC 201)

Time	ID	Name	Title
13:45	I20	Erdmann Spiecker	Combining transmission diffraction and imaging in SEM: Prospects for in situ microscopy of thin films and 2D materials
14:15	C63	Moon Kim	Phase Transformation Study of 2D Materials by in-situ STEM
14:30	ECS8	Łukasz Rychłowski	Optimization of projection center based on EBSD Kikuchi band intensity profiles
14:45	C64	Yushun Liu	Real-time Slip Planes Monitoring during In-situ Nanoindentation Enabled by Hollow-cone Dark-field Imaging
15:00	C65	Ruth Birch	In Situ EBSD Studies of Blocky Grain Growth in Welded Zircaloy-4

## Data Processing / Correlative (KC 201)

Time	ID	Name	Title
15:45	I21	James LeBeau	Direct Quantification of Short-Range Order in Materials by Combining STEM and Spatial Statistics
16:15	C66	Hrishikesh Bale	Investigation of stress corrosion cracking in CMSX-4 turbine blade alloys using Deep Learning assisted X-ray microscopy
16:30	C67	Robert Klie	Variational Convolutional Autoencoders for Anomaly Detection in Scanning Transmission Electron Microscopy
16:45	C68	Frédéric Voisard	Interpretation of serial section 3D EDX maps: multivariate analysis and deep learning hybrid approach
17:00	C69	Rasool Doostkam	Overcoming Phase Identification Ambiguity in the Analysis of SAED Patterns from Polymorphic Nanomaterials
17:15	C70	Ben Britton	Correlative energy dispersive X-ray spectroscopy (EDS/X) and electron backscatter diffraction (EBSD) analysis of