



**55<sup>th</sup>**  
**INORGANIC**  
**DISCUSSION**  
**WEEKEND**

**7-9<sup>th</sup> November 2025**

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# Welcome to London

Welcome to IDW-55!

We are thrilled to bring together a diverse community of experts, innovators, and leaders in the field of inorganic chemistry. Over the weekend, we will explore cutting-edge research, share knowledge, and foster meaningful connections.

Thank you for being a part of IDW!

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## Organizing Committee

### Co-organizers:

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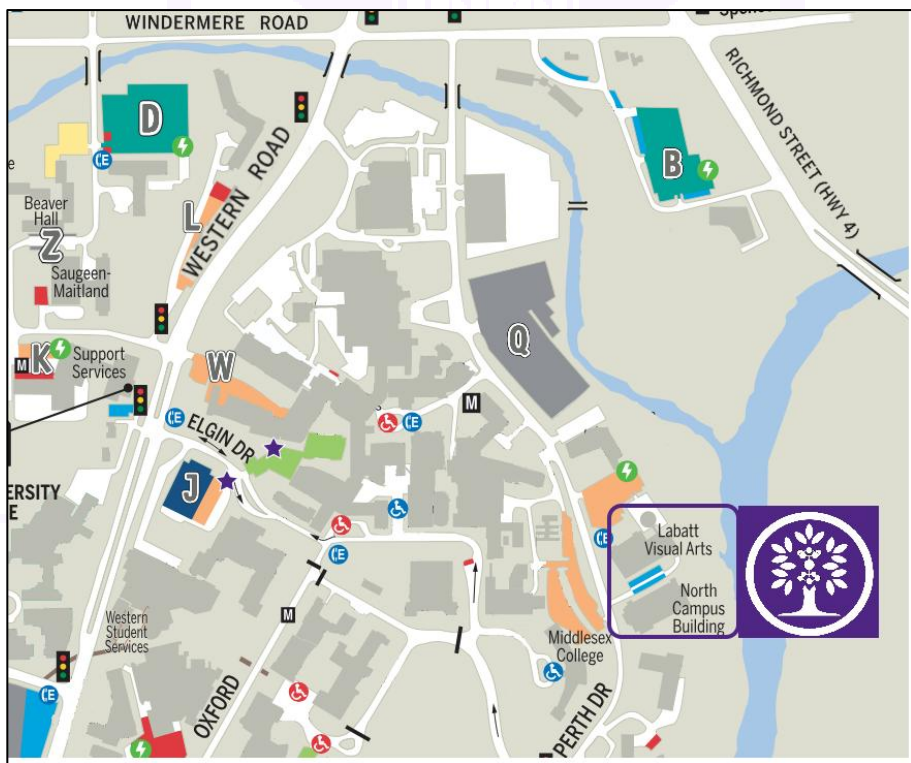
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# Parking & Venue

Free parking will be available for both Saturday and Sunday on the Western Campus in the Visual Arts Lot (see purple box). There should be ample parking for everyone, and it is just a few minutes walk to the North Campus Building (NCB), where we are holding the lectures, poster session, and lunch/coffee breaks.

To view the entire campus map, scan the QR Code:



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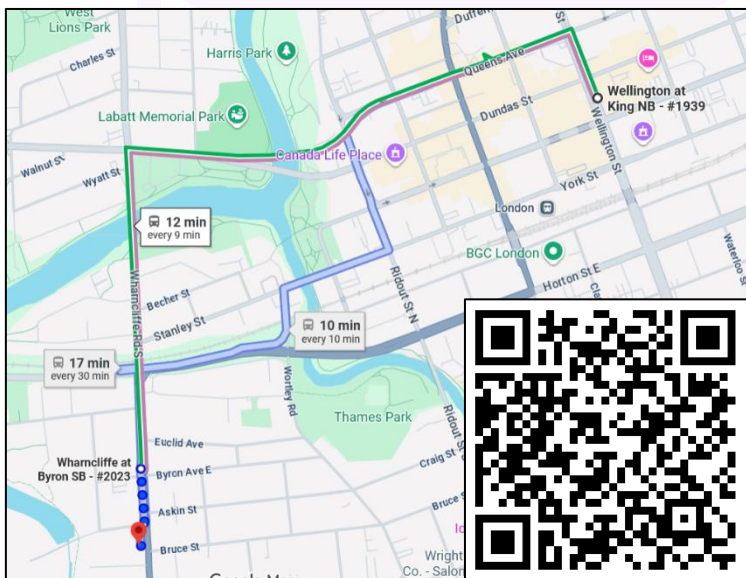
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# Conference Mixers

The opening mixer will be held at **Storm Stayed Brewery** (169 Wharnccliffe Rd) on Friday evening. The venue is about a 10-minute drive or a 12-minute bus ride from downtown London. Please note that all conference participants will be required to make their own way to this venue. A complimentary drink and light snacks will be available.

To get to and from downtown, we recommend taking the #07 or #12 bus from **Wellington at King** to **Wharnccliffe at Byron**, from there it is a short ~2 minute walk to the brewery. ***There is a bus ticket included in the bag, valid for the entire weekend.***



For the  
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map,  
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QR code



The conference dinner will be held at the **Grad Club** in **Middlesex College** on campus on Saturday evening.

**Conference participants must wear their name tags to gain entry. Please also ensure you bring your drink tickets with you.** The venue is directly across the street from the North Campus building, located on the lower floor, Room 19.

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# Keynote Speakers



**Saturday, November 8<sup>th</sup>**

**9:00 – 10:00 AM**

## **Robert Gilliard**

Novartis Professor of Chemistry

*Massachusetts Institute of Technology*

\*gilliard@mit.edu

## **Uncommon Bonds in Boron Heterocycles: From Diazoboranes to Luminescent Materials**

The incorporation of boron into conjugated organic molecules has emerged as a powerful strategy to elicit valuable optical and electronic properties which cannot be observed with the analogous all-hydrocarbon systems. We have explored new synthetic methods to incorporate boron into 5-membered ring heterocycles, which include the synthesis of diazoboranes as unusual borylating reagents. Part 1 of this lecture will cover the reactivity profile of neutral and anionic diazoboranes, illustrating how control of the steric and electronic properties of the stabilizing carbene ligand dictates product formation and selectivity.<sup>[1-3]</sup> In addition to these pursuits, we have recently investigated the stabilization of cationic boron heterocycles (i.e., borenium ions) for use as luminescent materials. Part 2 of this lecture will cover their emerging properties as stimuli-responsive materials with aggregation-induced emission (AIE) behaviour.<sup>[4-6]</sup>

### References:

- 1) Zhang, C.; Cummins, C. C.; Gilliard Jr., R. J. *Science* **2024**, *385*, 327-331.
- 2) Zhang, C.; Wang, J.; Zhang, X.; Dabringhaus, P.; Shi, W.; Deng, C.; Cummins, C. C.; Gilliard Jr., R. J. *J. Am. Chem. Soc.* **2025**, *147*, 22033-22040.
- 3) Zhang, C.; Valles, A.; Wang, J.; McMillion, N. D.; Cummins, C. C.; Gilliard Jr., R. J., *J. Am. Chem. Soc.* **2025**, *147*, 36604-36617.
- 4) Deng, C; Obi, A. D.; Tra, Bi; Obi, Sarkar, S. K.; Dickie, D. A.; Wilson, David J. D.; Gilliard Jr., Robert J. *Nat. Chem.* **2024**, *16*, 437-445.
- 5) Frey, N. C.; Hollister, K.; Taylor, Caleb, T.; Jones, N.; Dickie, D. A.; Gilliard Jr., R. J. *J. Mater. Chem. C* **2025**, *13*, 19778-19787.
- 6) Deng, C.; Obi; Tra, B. Y. E.; Zhang, X.; Zhang, C.; Gilliard Jr., R. J. *Nat. Chem.* **2025** DOI: [10.1038/s41557-025-01941-6](https://doi.org/10.1038/s41557-025-01941-6)

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# Keynote Speakers



**Saturday, November 8<sup>th</sup>**

**1:10 – 2:10 PM**

**Eva Hemmer**

Associate Professor

*University of Ottawa*

\*ehemmer@uottawa.ca

## Microwave & Materials Chemistry: Designing Lanthanide-Based Nanoparticles

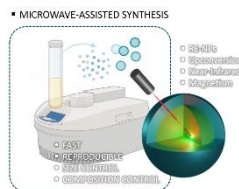
The remarkable optical properties of the lanthanides (Ln) make Ln-based materials ideal for applications ranging from biomedicine to optoelectronics and energy conversion technology. This is due to the unique electronic properties of the Ln<sup>3+</sup> ions allowing for upconversion, i.e., the emission of UV-visible light under near-infrared excitation.

Upconverting nanoparticles (UCNPs) based on sodium lanthanide fluorides (NaLnF<sub>4</sub>) are commonly synthesized by the thermal decomposition of metal precursors in high-boiling-point solvents, based on convectional heating. Microwave reactors can improve reproducibility by offering better control over a reaction environment. More homogeneous heat distribution yields narrow size distributions, and rapid heating to the desired temperature shortens reaction times from hours to minutes. We developed a fast and reliable microwave-assisted synthetic approach allowing crystalline phase, architectural, and size control of NaLnF<sub>4</sub> from sub-3 to ca. 25 nm.<sup>[1]</sup> Seeking alternative host materials for upconverting Ln<sup>3+</sup> dopants, challenges remain: Reproducible microwave-assisted synthesis of LiLnF<sub>4</sub> nanoparticles has not yet been shown, while their microscale counterparts were successfully synthesized, and routes towards Gd<sub>2</sub>O<sub>2</sub>S have just started to be explored.<sup>[2]</sup>

This presentation will shed light on the microwave-assisted synthesis as an alternative to established routes and highlight pros and cons of this strategy towards the design of luminescent and magnetic Ln-based particles from the nano- to the microscale, while also highlighting their application potential from imaging to thermal sensing.<sup>[1,3-5]</sup>

### References:

- 1) Liu, N.; et al. *Nanoscale* **2023**, *15*, 19546-19556.
- 2) Homann, C.; et al. *J. Mater. Chem. C* **2025**, *13*, 18492-18507.
- 3) Mirmajidi, H.; et al. *J. Mater. Chem. B* **2025**, *13*, 160-176.
- 4) Puccini, P.; et al. *ACS Materials Lett.* **2024**, *6*, 1327-1337.
- 5) Liu, N.; et al. *Inorg. Chem. Front.* **2025**, *Accepted Manuscript*, DOI: 10.1039/D5Q10



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# Keynote Speakers



Sunday, November 9<sup>th</sup>

10:40 – 11:40 AM

**Sophie Rousseaux**

Associate Professor

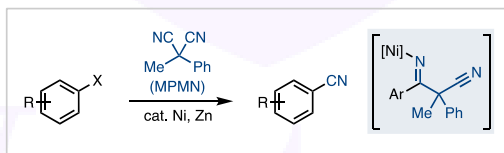
University of Toronto

\* [sophie.rousseau@utoronto.ca](mailto:sophie.rousseau@utoronto.ca)

## New Developments in Ni-Catalyzed Transnitration

Accessing medicinally relevant small molecules in a more efficient and/or safer manner continues to drive important discoveries in synthetic organic chemistry. My group is particularly interested in the development of new Ni-catalyzed processes to address these challenges and the use of readily available building blocks to access complex small molecules.

The preparation of nitrile-containing organic molecules has garnered considerable attention from the community for over a century due to their prevalence in pharmaceuticals and their versatility as synthetic intermediates. In this field, the use of toxic cyanide salts (and their equivalents) or HCN as a source of nitrile to forge C–CN bonds remains a problem. To address this challenge, my group is developing new synthetic methods that use inexpensive and less toxic nitrile-transfer reagents for the synthesis of these compounds. We have demonstrated that valuable nitrile-containing building blocks can be prepared based on the concept of nitrile-transfer (or “transnitration”).<sup>[1,2]</sup> This presentation will highlight our contributions to this field, with a particular focus on the development of Ni-catalyzed methods for the synthesis of nitriles.<sup>[2]</sup>



### References:

- 1) a) Alazet, S.; West, M. S.; Patel, P.; Rousseaux, S. A. L. *Angew. Chem. Int. Ed.* **2019**, *58*, 10300–10304; b) Mills, L. R.; Rousseaux, S. A. L. *Tetrahedron* **2019**, *75*, 4298–4306.
- 2) a) Mills, L. R.; Graham, J.; Patel, P.; Rousseaux, S. A. L. *J. Am. Chem. Soc.* **2019**, *141*, 19257–19262; b) Mills, L. R.; Edjoc, R. K.; Rousseaux, S. A. L. *J. Am. Chem. Soc.* **2021**, *143*, 10422–10428; (c) Palermo, A. F.; Chiu, B. S. Y.; Patel, P.; Rousseaux, S. A. L. *J. Am. Chem. Soc.* **2023**, *145*, 24981–24989; (d) Graham, J. M.; Rousseaux, S. A. L. *Chem. Commun.* **2025**, *61*, 893–896.

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# Schedule

Friday, November 7th	
7:00 PM	Storm Stayed Brewing 169 Wharndcliffe Rd S, London, ON N6J 2K7 <b>Welcome Reception &amp; Registration</b>

Saturday, November 8th	
8:15-8:45 AM	North Campus Building 2004 Perth Dr, London, ON N6A 3L5 <b>Light Refreshments &amp; Registration</b>
8:45-9:00 AM	<b>Opening Remarks:</b> Paul Ragogna, Associate Dean of Research
9:00-10:00 AM	<b>Keynote Speaker: Dr. Robert Gilliard</b> Massachusetts Institute of Technology
10:00-10:20 AM	Coffee Break

	NCB 114	NCB 117
10:20-10:40 AM	<b>1A: Carolina Vega Verduga</b> and Mark S. Workentin* <i>Room Temperature Photoluminescence Enhancement of Ag<sub>20</sub> Nanoclusters</i> (Western University)	<b>1B: Sandamini H. Alahakoon</b> , Xiaona Li, Feipeng Zhai, Wanli Zhang, Xueling Sun and Yining Huang* <i>Atomic-scale Insights into Ion Dynamics and Structure of Superionic Li<sub>3</sub>InCl<sub>6</sub></i> (Western University)
10:40-11:00 AM	<b>2A: Daniel Gómez-Bustos</b> , Rahul Koka, Hans-Arno Jacobsen and Ulrich Fekl* <i>Scalable, Distributed Quantum Computations on Spin-State Energetics of Strongly Correlated Iron Complexes</i> (University of Toronto Mississauga)	<b>2B: Rachel Leigh Mander</b> , Ashley Schmidt, Michael Ruf and Maciej Damian Korzyński* <i>Design and Synthesis of Pillared Metal-Organic Frameworks Featuring Olefinic Fragments</i> (University of Toronto Mississauga)
11:00-11:20 AM	<b>3A: Cordelia Y. Adams</b> , Yelyzaveta V. Antsybora, Alan J. Lough, Nisha R. Agarwal and Olena V. Zenkina* <i>An Efficient 2,6-di(thiazol-2-yl)pyridine-based Chemosensor for Dual-response Fluorometric and Colorimetric Detection of Fe<sup>2+</sup> and Cu<sup>2+</sup></i> (Ontario Tech University)	<b>3B: Daniel J. Cutler</b> , Saba Riyaz, Parisa Abbasi, Melanie Pilkington and Jeremy M. Rawson* <i>Polymetallic Clusters of Fe<sup>III</sup> with mpmh: A Study of a Racemic and Chiral Chelate</i> (University of Windsor)
11:20-11:40 AM	<b>4A: Ghazaleh Takalloobanafshi</b> , Leonard Luyt* and Justin W. Hicks* <i>Technetium-Based TSPO Targeting Radiotracers for Imaging Inflammatory Neurodegenerative Diseases with SPECT</i> (Western University)	<b>4B: Shuting Li</b> , Yining Huang* and Chunbao (Charles) Xu* <i>Ruthenium-based Defective MOFs as Heterogeneous Catalysts for Hydrogenation of Carbon Dioxide to Formate</i> (Western University)

	NCB 114 Flash Talks:	NCB 117 Flash Talks:
11:40-11:45 AM	<b>1AF: Jincheng Ren</b> and Derek J. Schipper* <i>Synthesis of a Novel Imidazopyrimidine-based Macrocyclic Ligand</i> (University of Waterloo)	<b>1BF: Clement Lee</b> , Youssef Seleem, Yasmeen Shamiya, Arghya Paul and Lijia Liu* <i>The Fabrication of Agarose/Humic Acid Persistent Luminescent Hydrogels</i> (Western University)
11:45-11:50 AM	<b>2AF: Michèle Michichiuc</b> , Christopher N. Boddy and Deryn E. Fogg* <i>Toward In Vivo Olefin Metathesis: Targeted Catalyst Delivery via a Protein-Catalyst Conjugate</i> (University of Ottawa)	<b>2BF: Riley Woods</b> and Derek J. Schipper* <i>Design, Synthesis, and Characterization of Multimetallic Complexes Supported by an Imidazopyrimidine-Based Trinucleating Ligand</i> (University of Waterloo)

11:50-11:55 AM	<b>3AF: Gabriella Morin</b> , Christina McCabe, Dr. Douglas Tumbull, Victoria Pham-Tran and Marc-André Légaré* <i>Rational Design of a Main Group Catalyst for Suzuki Cross-Coupling Reactions with Esters</i> (McGill University)	<b>3BF: Jacky Li</b> , Zhenzhong Cai, Andrew Kinsman, Joe B. Gilroy* and Lijia Liu* <i>Exciting Boron Difluoride Hydrazone (BODIHY) Dyes using Persistently Luminescent Strontium Magnesium Silicate (MSO)</i> (Western University)
11:55-12:00 PM	<b>4AF: Rayni P. Noriega</b> , Kurt F. Hoffmann, Paul D. Boyle and Marcus W. Drover* <i>2-Alkylphosphino-1-boraadamantanes</i> (Western University)	<b>4BF: Irfan M. Zaman</b> , Kareem Abdur-Rashid, Shraman K. Saha, Jules Mugisha, Sam Teale, Sasa Wang, Meelad Saber, Alan J. Lough, Edward H. Sargent and Ulrich Fekl* <i>Designing Polar Crystals by Co-crystallizing Molecular Nanodiamonds</i> (University of Toronto Mississauga)
12:00-12:05 PM	<b>5AF: Jennika Robato</b> , Ignacio Camarero Temiño and William Jones* <i>C-H Activation of Azine-Type Heterocycles via Cp*Rh(PMe<sub>3</sub>)PhH for Parahydrogen-Induced Polarization</i> (University of Rochester)	<b>5BF: Yihong Liu</b> , Katie Buchel, <b>Ruoxin Deng</b> and Lijia Liu* <i>Magnesium Germanium Oxide Hydrate Nanowires with Outstanding Surface Stability for Selective Cationic Dye Removal</i> (Western University)
12:10-1:10 PM	Lunch	
1:10-2:10 PM	<b>Keynote Speaker: Eva Hemmer</b> University of Ottawa	
2:10-2:40 PM	Sponsor Talks: <b>Rigaku:</b> <i>The Transformative Effect of Electron Diffraction</i> <b>Proto:</b> <i>Powder X-ray Diffraction: A Multipotentialite (with Honorable Mentions to Single Crystal)</i>	
2:40 - 3:00 PM	Coffee Break	
	<b>NCB 114</b>	<b>NCB 117</b>
3:00-3:20 PM	<b>5A: Emily J. Addison</b> , Joseph A. Zurakowski, David J. Nelson* and Marcus W. Drover* <i>An Exploration into the Synthesis and Mechanism of an Unsymmetrical C<sub>6</sub>F<sub>5</sub>-Substituted 1-Boraindenes</i> (Western University)	<b>5B: Yihong Liu</b> , Jiawei Sun, John A. McLeod, Ruoxin Deng, Clement Lee, Congyang Zhang, Zhifeng Ding and Lijia Liu* <i>Mn<sup>2+</sup>-doped (Mg,Zn)<sub>x</sub>GeO<sub>y</sub> Submicron Particles with Tunable, Excitation-Energy-Dependent Dual-Colour Persistent Luminescence</i> (Western University)
3:20-3:40 PM	<b>6A: Jackie Wu</b> , Marc-André Légaré* and Jean-Philip Lumb* <i>Strategies in the Systematic Functionalization of Arenes</i> (McGill University)	<b>6B: Neha Bajaj</b> , Niki Mavragani, Alexandros A. Kitos, Daniel Chartrand, Thierry Maris, Akseli Mansikkamäki and Muralee Murugesu <i>Hard Single-molecule Magnet Behavior and Strong Magnetic Coupling in Pyrazinyl Radical-bridged Lanthanide Metallocenes</i> (University of Ottawa)
3:40-4:00 PM	<b>7A: Samantha K. Cormier</b> , Harrison C. Max, Eliza-Jayne Y. Boisvert, Michael J. Ferguson and Deryn E. Fogg* <i>Wittig Carbenation: From Degradation to a New Beginning in Olefin Metathesis</i> (University of Ottawa)	<b>7B: Mukaila A. Ibrahim</b> , René T. Boeré and Kathryn E. Preuss* <i>Thiatriazinyl Radical Ligands for New Molecule-based Magnets</i> (University of Guelph)
4:00-4:20 PM	<b>8A: John S. Lee</b> , Alliana L. Dimitrio and Johanna M. Blacquiere* <i>Phosphine-1-Azaallyl Ligand Enabled Mononuclear Pd(I) Catalysis</i> (Western University)	<b>8B: Nadia T. Stephaniuk</b> , <b>Asli M. Wehelie</b> , Lara K. Watanabe and J.M. Rawson <i>Crystal Engineering of Radical-Radical Cocrytals</i> (University of Windsor)
4:20-4:40 PM	<b>9A: Ignacio Camarero Temiño</b> , Mikhaila D. Ritz and William D. Jones* <i>Ruthenium-Catalyzed, Benzoquinone- and Electrochemically-Assisted Amine Dehydrogenation</i> (University of Rochester)	

4:40-6:15 PM	Poster Session and Mixer	
6:30-8:30 PM	Grad Club Middlesex College, Room19, London, ON N6A 5B7 <b>Conference Dinner</b>	
<b>Sunday, November 9th</b>		
8:30-9:00 AM	Coffee and Light Snacks	
	<b>NCB 114</b>	<b>NCB 117</b>
9:00-9:20 AM	<b>10A: <u>Shrabani Khan</u></b> , Shaun K. Milkovich, Paul D. Boyle and Joe B. Gilroy* <i>From Phosphadiazonium Cations to Phosphorus-Nitrogen (PN) Heterocycles</i> (Western University)	<b>9B: <u>Rina Muhammad Faisal</u></b> , Chen-Wei Lin, Yi-Chen Li, Bi-Hsuan Lin, Lo-Yueh Chang, Zhenzhong Cai, Zhifeng Ding, John McLeod and Lijia Liu* <i>When Stoichiometry Speaks: How Intrinsic Defects Drive Self-Activated Luminescence in Zn<sub>2</sub>GeO<sub>4</sub> nanoparticles</i> (Western University)
9:20-9:40 AM	<b>11A: <u>Elaina Bourque</u></b> , Douglas Turnbull, Keyu Zhao and Marc-Andre Legare* <i>A T-shaped Phosphinidene</i> (McGill University)	<b>10B: <u>Wilson Diqby</u></b> and Daniel Foucher* <i>Synthesis of Stable Polystannanes using Pincer Ligands with Enhanced Solubility</i> (Toronto Metropolitan University)
9:40-10:00 AM	<b>12A: <u>Ryan J. Scott</u></b> , Mila Abaeva, Riley T. Woods, Jincheng Ren and Derek J. Schipper* <i>Unsymmetrical Imidazopyrimidines: Ligand Design for Selective Multi-metallic Complexes</i> (University of Waterloo)	<b>11B: <u>Noah King</u></b> and Rodney D. L. Smith* <i>Towards Tuneable 2D Heterostructures for Clean Energy Catalysis: Defect and Interface Engineering in WS<sub>2</sub>-Based Materials</i> (University of Waterloo)
10:00-10:20 AM	<b>13A: <u>Aivireti (Dina) Dilinaer</u></b> and Marcus Drover* <i>Ligandless Iron-catalyzed C(sp<sup>3</sup>)-H Bond Fluorination</i> (Western University)	
10:20-10:40AM	Coffee Break	
10:40-11:40 AM	<b>Keynote Speaker: <u>Sophie Rousseaux</u></b> University of Toronto	
11:40-12:00 PM	Awards Presentation and Closing Remarks	



# Western



# Links to Abstracts

## Poster Abstracts



## Flash Talks/Poster Abstracts:



## Oral Abstracts

(A Section):



## Oral Abstracts

(B Section):



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