

Highlights 2019 Forbes Top 30 Under 30 – Energy | 2x TEDx Speaker
Carbontech co-founder & finalist (1 of 10 globally) of the \$20M Carbon XPRIZE
Youngest-ever director of the National Research Council of Canada
42 publications in high-impact journals with multiple in *Nature* and *Science*
Over 8 years of experience in strategic research and development of clean energy technologies

Education	2015 – 2018	University of Toronto	PhD Materials Science & Engineering
	2017	University of California, Berkeley	Visiting Scholar
	2013 – 2015	University of Ottawa	MSc Chemistry
	2009 – 2013	University of Windsor	BSc [H] Chemistry

Experience Program Director at National Research Council of Canada

Feb 2019 – Present

- Built and launched a 7-year mission-driven clean technology research program with a budget of \$57M focused on CO₂ conversion, hydrogen production, and artificial intelligence for materials discovery.
- Manages a team of 40 FTE in three thrusts – CO₂ recycling, H₂ technology, and AI for materials discovery across a portfolio of >25 collaborative research projects and with world-leading academics and startups in Canada, UK, Germany, and the US.
- Engages with oil & gas, energy, and chemical industry executives, high-ranking government officials, and technology innovators to align program for deepest impact.
- Contributes to national energy strategies around hydrogen and carbon capture, utilization, and storage.

Vice-Chairman of the Board of Directors at Carbon Management Canada (CMC) Research Institutes

Sep 2019 – Present

- Provides key strategic insight and direction to the firm's key value offerings in the carbontech ecosystem. Served on the HR & Governance committee and oversaw board renewal and hiring of the latest CEO.
- Supports the Chair of the Board of Directors in governance of the board and engagement with the management team.

Mentor at Creative Destruction Lab

May 2020 – Present

- Helping early stage founders change the world by building massive and scalable technology companies through technical assessments and entrepreneurial mentorship. Specialization in advanced materials and founding mentor of the Matter (Toronto) and Climate (Paris) streams.

Co-Founder & Finalist at Carbon XPRIZE

Sep 2016 – Mar 2019

- Co-founded a carbontech firm (CERT Systems) that raised >\$2M in non-dilutive funding to develop breakthrough technology to convert CO₂ to ethylene, a critical chemical feedstock with a global market of \$92B. 2019 Creative Destruction Lab – Energy cohort, a highly competitive startup accelerator.
- Brokered partnerships with engineering scale up providers, strategic oil & gas investment, and government funding programs. Led a team to scale up CO₂ conversion technology from bench to prototype.

Researcher at University of Toronto

Sep 2015 – Jan 2019

- Pioneering contributions to the fields of CO₂ recycling, artificial intelligence for materials discovery, artificial photosynthesis, and hydrogen technologies. Governor General Gold Medalist.
- Brokered funded research projects to oil and gas/ petrochemical corporations such as Total, Suncor, and Dow. More than \$5M in awarded funds and partnerships.
- Research has been featured by VICE, CBC, The Independent, Forbes, Popular Science, etc.

Research Scientist at Toyota Research Institute

Jun 2018 – Sep 2018

- Worked with researchers at Stanford University to use artificial intelligence to accelerate the discovery of new fuel cell and battery materials. Acceleration factors of >10x traditional experimental discovery was achieved.

Research Scientist at IBM TJ Watson Research Center

May 2016 – Sep 2016

- Developed large-scale simulations to understand biomolecule-material interfaces in the context of point-of-care biosensing applications.
- Published 4 research papers in high-impact journals over the course of a 4 month internship.

Volunteer Activities

Member, Advanced Materials Steering Committee at the OECD

May 2019 – Present

- Co-authored a policy report on collaborative research platforms with other international leaders from Japan, US, European Commission, Korea etc. Contributed Canadian case study and proposed policy recommendations.

Fellow, Action Canada at the Public Policy Forum

Jun 2020 – Present

- Participated in a Canadian public policy leadership accelerator program (1 of 13 fellows nationally).
- Co-authored a public policy task force report on the future of work in the agriculture sector from a place-based lens with a specific focus on recommendations to increase workforce diversity.

Member, Forbes Under 30 Advisory Board at Polestar

Sep 2020 – Present

- Provides guidance on strategies and generated suggested impact projects to increase the uptake of electric vehicles in the mass consumer market.

Member, Sustainable AI Ethics Working Group at the Canadian Commission for UNESCO

Oct 2020 – Present

- Works with the UNESCO secretariat to develop proposals for applying artificial intelligence technology to advance the realization of Canadian UN Sustainable Development Goals.

Alumni Fellow at Massey College

August 2016 – January 2019

- Participated in a number of committees as an active member in the Massey College Community, an exclusive graduate community focused on multi-disciplinary research excellence at the University of Toronto.
- Served as Co-Chair Junior Fellow Lecture Series, Co-Chair Quarter Century Fund, Lionel Massey Fund Committee Member, Junior Fellow/Senior Fellow Liaison Committee Member, Science at Massey Committee Member, House Committee Member and the Massey Tutors Program High School Tutor

Graduate Fellow, Canadian Institute for Advanced Research (CIFAR)

September 2015 – January 2019

- Participated as a founding graduate fellow of the Bio-Inspired Solar Energy Program – a collaborative research program bringing the best minds in the world together around new clean energy technologies.
- Served as meeting co-organizer and meeting recorder.

Awards

- 2020** Action Canada Fellow, Public Policy Forum
Mission Innovation Champion – Canada, Mission Innovation
- 2019** Forbes Best of Canada Top 30 Innovators, Forbes
Forbes Top 30 Under 30 – Energy, Forbes
Governor General's Gold Medal, Governor General of Canada
GreenBiz Top 30 Under 30, GreenBiz Magazine
- 2017** Massey College Catherall Award, Massey College
- 2016** Michael Smith Foreign Study Supplement, NSERC
Alexander Graham Bell Canada Graduate Scholarship (CGS-D), NSERC
- 2015** Atsumi Ohno Scholarship, University of Toronto
Dr. Yu Graduate Scholarship, University of Ottawa
- 2014** uOttawa Teaching Assistant Excellence Award, University of Ottawa
Top Poster Prize Award, Carbon Management Canada (CMC) Annual Conference
- 2013** Tito Scaiano Graduate Scholarship, University of Ottawa
Department of Chemistry Undergraduate Excellence Award, University of Windsor
- 2012** Top Undergraduate Poster Award at the 25th Canadian Symposium for Theoretical and Computational Chemistry (CSTCC), University of Guelph

Featured Media

VICE Mini-Documentary, *Empowered Episode 2*
Toronto Star Opinion Editorial, "*If you want a diverse workforce, you need diverse leadership*"
Podcast Interviews, *Pipelines & Turbines* and *Forward – How Stories Drive Change*
TEDxUofT Speaker, "*The future of discovery will be self-driven*"