

Novelis Innovation Hub @ Georgia Tech

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GWW External Advisory Board Meeting
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<https://research.gatech.edu/novelis>



About Novelis

- Leading producer of flat-rolled aluminum products and the world's largest recycler of aluminum
 - Provides innovative aluminum solutions for automotive, beverage packaging, aerospace, building products, and other industries
- Headquartered in Atlanta with 33 manufacturing locations in 9 countries
 - Novelis' Global Research and Technology Center (NGRTC) is located in Kennesaw, GA



About the Novelis Innovation Hub

- Formal partnership with GT established in 2019
 - Serves as the focal point for enterprise-level collaboration between Novelis and Georgia Tech
 - Connects Novelis' technical and business innovators with Georgia Tech students and faculty
- Vision
 - To build a strong, long-term partnership in support of Novelis' purpose of:
 - Making a step change toward sustainability
 - Accelerating time to market for Novelis' core business
 - Opening new market opportunities
- Mission
 - Build 5–10-year collaborative roadmap and portfolio of basic and applied R&D initiatives to accelerate innovation
 - Expand opportunities for students and faculty to partner with industry innovators to deliver technological breakthroughs

SUSTAINABILITY GOALS

Novelis' ambition is to be the world's leading provider of low-carbon, sustainable aluminum solutions that advance our business, industry, and society toward the benefits of a circular economy.



Net Carbon Neutral
by 2050

30%*
reduction in CO2 footprint by 2026



10% Reduction in **Energy** use by 2026



10% Reduction in **Water** use by 2026



20% Reduction in **Waste** to landfill by 2026



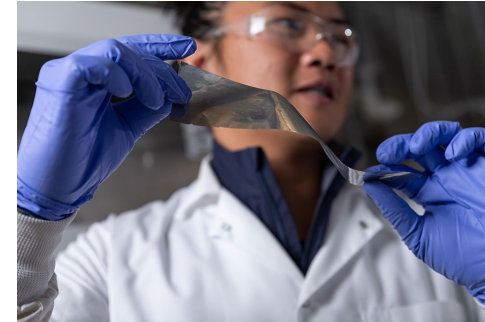
Increase representation of women to:

30% of women in leadership roles by 2024

15% of women in senior technical roles by 2024

Novelis Hub Activities

- Basic and applied R&D projects in the areas of
 - Sustainability, Advanced materials discovery, Applications of AI/ML, Surface functionality, Additive manufacturing
 - Joint workshops to identify relevant GT faculty expertise for collaborative projects
- Novelis Industry Day – Annual review of sponsored projects
- Support for research infrastructure and student-led activities
 - AMPF, GA-AIM, GT-HBCU Collaboration, MILL
- Joint organization of conferences
 - ICAA19, IDDRG
- Novelis Scholars Program & Novelis Scholars Day
 - Graduate and Undergraduate Scholars



Advanced Battery Materials Research - Prof. Matt McDowell



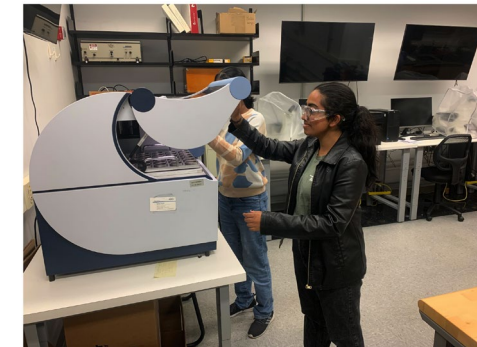
Sustainability Workshop - NGRTC



Annual Industry Day - 2024



Scholars Day, NGTRC - 2024



Materials Science Engineering students using the newly donated XRF at the MILL
Equipment donation to the MILL in MSE

Novelis Scholars Program

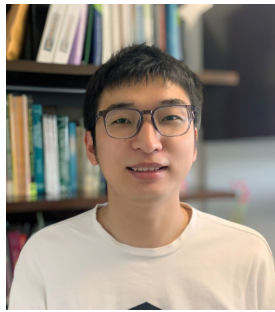
- Annual competitive program: Graduate Scholars Program launched in 2021; Undergraduate Scholars Program launched in 2022
 - \$8k fellowship for graduate scholars, \$4k scholarship for undergraduate scholars
- Purpose:
 - Catalyze and cultivate excellence in graduate and undergraduate research in strategic growth areas relevant to Novelis and Georgia Tech.
 - Connect top students and their faculty advisors with Novelis scientists and engineers to learn about their research and explore collaboration and engagement opportunities.
- Awards to date:
 - 21 Graduate Scholars and 7 Undergraduate Scholars from various schools at GT including ME, MSE, ChBE, CEE, and Computing
 - 35% women scholars

2024 Novelis Scholars

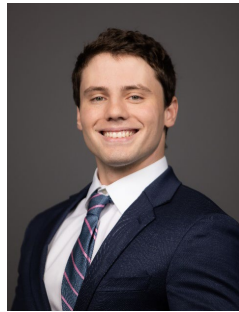
Graduate Scholars



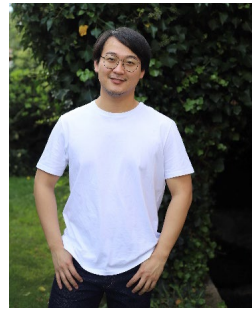
Kelsey Anne Cavallaro
Ph.D. student, Materials
Science and Engineering



Yiming Chen
Ph.D. student, Electrical and
Computer Engineering



Marshall Frye
Ph.D. student, Materials
Science and Engineering



Xueyu Hu
Ph.D. student, Materials
Science and Engineering



Botagoz Kuspangaliyeva
Ph.D. student, Chemical &
Biomolecular Engineering



Diana LaFollette
Ph.D. student, Materials
Science and Engineering



Asif Rashid
Ph.D. student, Mechanical
Engineering



Pranoy Ray
Ph.D. student, Mechanical
Engineering

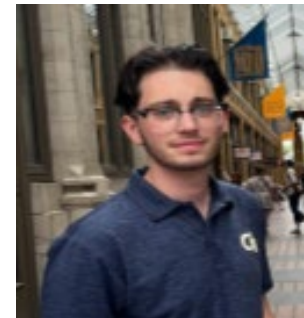
Undergraduate Scholars



Johnathan Wright
B.S. student, Materials Science
and Engineering



Zachary Haataja
B.S. student, Materials Science
and Engineering



Joseph "Mushy" Mushyakov
B.S. student, Materials
Science and Engineering

Novelis Scholars Day

- Organized annually at the NGRTC in Kennesaw
- Scholars present their research to and interact with Novelis scientists and engineers
- Tour of NGRTC R&D labs



Keys to Success

- Alignment of industry needs with GT faculty expertise and R&D infrastructure
- Multi-faceted Master Research Agreements
- Strong support from leadership of both organizations
 - GT EVPR & Novelis CTO's office
- Close and frequent coordination between GT and Novelis leads for the Hub and between leadership of both organizations
 - Faculty-led with support from corporate engagement
- Holistic view of the partnership
 - Establishing a continuum to drive technology innovation from basic research to commercialization
- Sponsored research funds + philanthropic support

Future Plans

- Partnership (and agreements) renewed through 2030
- Growth of R&D capabilities and collaboration in strategic areas
 - Establishing capabilities and facilities in strategic technical areas of mutual interest
- Leveraging federal funding sources
- Teaching and workforce training programs for technical competency building in specific areas relevant to Novelis