Carbon to Metal Coating Institute
Scientific Director
Dr. Cathleen Crudden

New Frontiers in Research Fund
Fonds Nouvelles frontières en recherche

About Us

An international, interdisciplinary institute of research, innovation, & education excellence, made possible by a **$24 Million grant** from the **New Frontiers Research Fund-Transformation Program.**
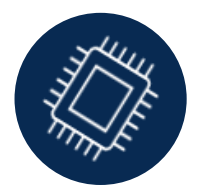
Our Research

From automobiles, to bridges, airplanes, green energy infrastructure, microelectronics and precision therapeutics, it is difficult to imagine modern life devoid of metals. However, as most metals are unstable in oxygen rich environments, all metal infrastructure requires costly inspection, repair, and corrosion mitigation efforts. The goal of the Carbon to Metal Coating Institute (C2MCI) is to develop a novel metals coating strategy that will have impact on all length scale.

Macro-level
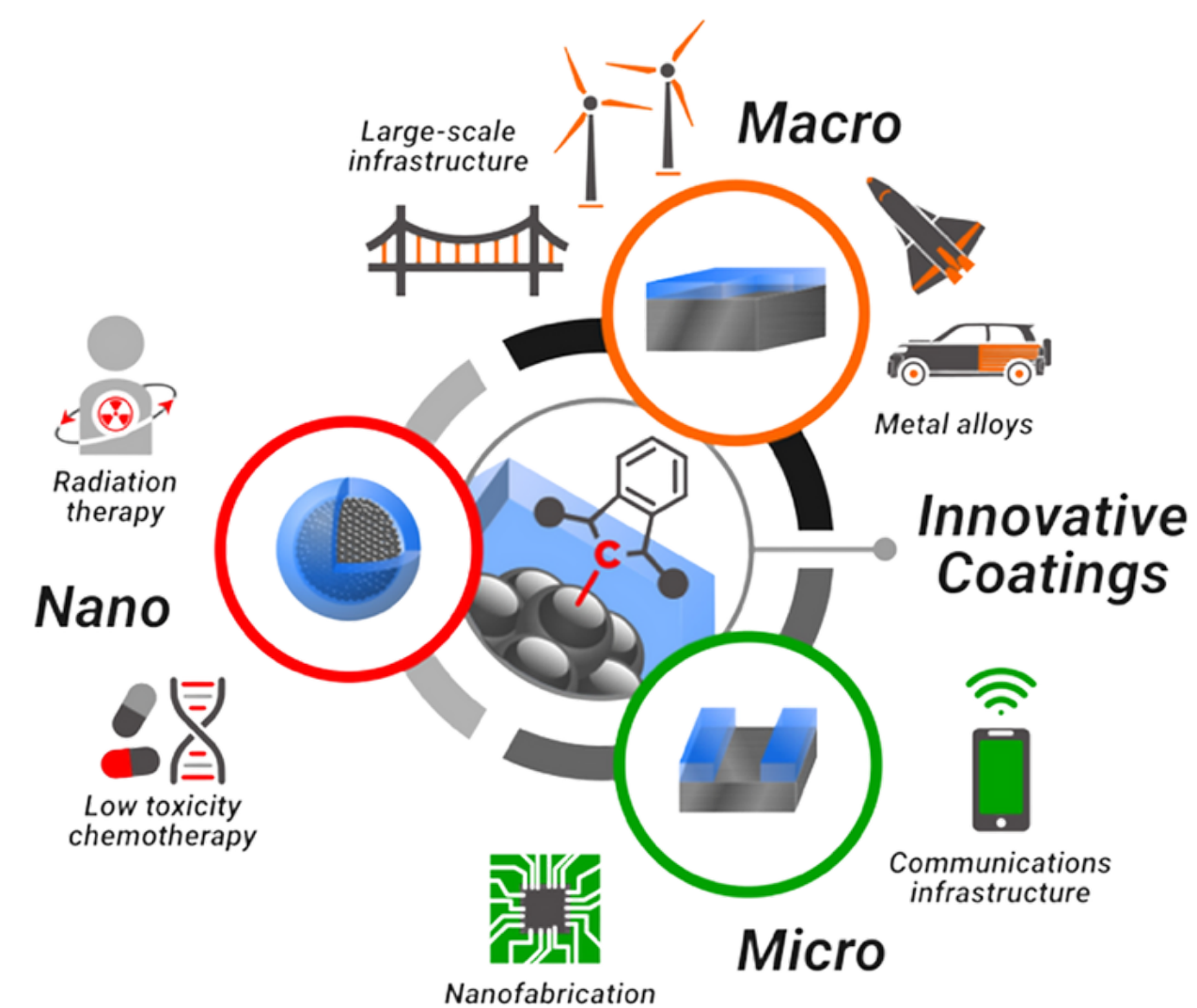*Improve stability of metal transportation and energy infrastructure*

Micro-level
Design novel microelectronics manufacturing processes

Nano-level
Improve precision, safety, & effectiveness of nanomedicines

Large-scale infrastructure — Macro — Metal alloys — Innovative Coatings — Communications infrastructure — Micro — Nanofabrication — Low toxicity chemotherapy — Nano — Radiation therapy

Education 🎓

Our consortium of partners allows us to provide enriched interdisciplinary training opportunities to undergraduate, graduate and postgraduate researchers. Opportunities include the ability to work directly with our global academic experts and industry partners. This allows our trainees to build advanced research and business skills.

Equity, Diversity & Inclusion & Indigeniety (EDII)

Our institute is committed to EDII. In addition to embedding EDII principles into everything we do, we also host regular EDII research workshops and provide fellowships to attract and promote equity deserving researchers.

Our Impact

9 INDUSTRY, INNOVATION AND INFRASTRUCTURE | 11 SUSTAINABLE CITIES AND COMMUNITIES | 12 RESPONSIBLE CONSUMPTION AND PRODUCTION

Our innovations will:
- Reduce costs associated with construction and maintenance of transportation and green energy infrastructure
- Create Canadian jobs in microelectronics manufacturing
- Develop safer and more effective precision therapeutics for cancer treatment improving health outcomes

Our research also makes a meaningful contribution to the UN Sustainability Development Goals (SDG 9,11,&12). Specifically, our metal coating solutions will **produce more resilient transportation and green energy infrastructure**. This will support Canada's move toward green energy and reduce demand for metal extraction processes which will **lower greenhouse gas emissions**. More resilient metal infrastructure will reduce the leaching of contaminants into the environment from corroding metals.

Global Partners

Canada, United States of America, Japan, United Kingdom, Finland

Our network of partners includes global academic research leaders from the disciplines of chemistry, physics, engineering, and medicine.

THE TEAM

Our consortium of industry partners supports scale up and knowledge mobilization.

🇨🇦	**7 Canada Research Chairs**
🌐	**7 International Team Members**
🏛️	**7 Government Partners / National Labs**
👨‍⚕️	**7 Oncologists & Clinicians**
🔬	**10 Early Career Researchers**
🏭	**10 Industry Partners**