The Royal Society of Canada | 2022 Award Winners

Alice Wilson Awards

To three women of outstanding academic qualifications in the Arts and Humanities, Social Sciences or Science who are entering a career in scholarship or research at the postdoctoral level.

Michelle Lonergan obtained her PhD from the Department of Psychiatry at McGill University in January 2019, and since then, she has been pursuing postdoctoral research in the Couple Research Lab at the University of Ottawa, School of Psychology. Using the lens of attachment theory, her research focuses on the potentially traumatic effects of romantic betrayals in couple relationships on individual mental health and couple well-being.

School of Psychology | University of Ottawa

Chelsea Matisz's research focuses on how gut health affects brain health and mental health. She completed her PhD in Gastrointestinal Sciences at the University of Calgary. She is currently a Postdoctoral Scholar at the Canadian Center for Behavioural Neurosciences at the University of Lethbridge. She researches how chronic gut inflammation promotes changes in brain structure, function, and behaviour, and if this can be remediated using vitamin D, cannabinoids, or psilocybin.

Department of Neuroscience | University of Lethbridge

Yimu Zhao received her Ph.D. degree from the University of Toronto. She went to Columbia University for postdoctoral training and continue her research at University Health Network in Toronto. Her research focuses on developing heart-on-a-chip that facilitates 1) the co-culture of functional vasculature and cardiac muscle through the multicellular crosstalk, 2) the incorporation of built-in biosensors for functional readouts, and 3) the advanced maturation approaching adult-level via electrical conditioning.

Toronto General Hospital Research Institute | University Health Network | University of Toronto

Bancroft Award

For instruction and research in the science of geology.

Sandra M. Barr is the pre-eminent geoscientist in Atlantic Canada who over a career spanning almost 5 decades has unraveled the tectonic history of the Canadian Appalachians, mapped the geology of nearly half the Maritimes, taught over 4000 students the fundamentals of geoscience, and supervised over 100 theses. Her world-wide collaborations have pioneered the use of tools ranging from field study to isotopic chemistry, geophysics, and paleontology.

Department of Earth and Environmental Science | Acadia University

Flavelle Medal

For meritorious achievement in biological science.

Graham Bell is an evolutionary biologist with three main interests: understanding the mechanism of natural selection, interpreting the main features of life cycles, and explaining the maintenance of biodiversity. His lab has investigated major issues in the mechanism of adaptation, and has recently turned to investigating the evolutionary consequences of global change, especially the adaptation of plants to elevated carbon dioxide and the evolutionary rescue of stressed populations.

Redpath Museum | Department of Biology | McGill University

Innis-Gérin Medal

For a distinguished and sustained contribution to the literature of the social sciences.

During a long and eminent career, **Jane Jenson** became one of Canada's best-known social scientists, internationally recognised for conceptual and empirical contributions to political science, sociology, and political economy. A prolific scholar, her work influences fields from electoral behaviour and social movements to conceptualisations of citizenship and social rights in Quebec and Canada, Europe and Latin America. A genuine public intellectual, she regularly makes influential interventions in important contemporary political debates.

Département de science politique | Université de Montréal

J.B. Tyrrell Historical Medal

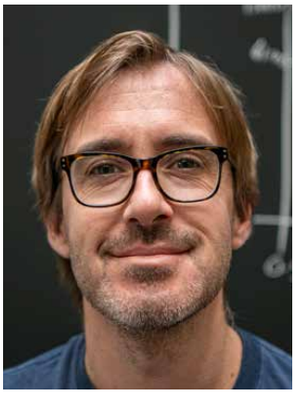
For outstanding work in the history of Canada.

Afua Cooper is a senior academic trained in the history of Black people in Canada, and the African Diaspora. Her indomitable research on slavery, abolition, freedom, Black education, and women and youth studies has made her one of the leading figures in African Canadian studies. A self-described intellectual activist and founder of the Black Canadian Studies Association, she has fundamentally shifted the conversation in Canada on history, race, and equity.

Department of Sociology and Social Anthropology | Dalhousie University

John L. Synge Award

For outstanding research in any of the branches of the mathematical sciences.



Kevin Costello is an Irish mathematical physicist who holds a Krembil Foundation chair at the Perimeter Institute for Theoretical Physics. He works on mathematical aspects of quantum field theory, which is a widely used theoretical paradigm in physics. His work brings modern mathematical techniques to bear on this important topic. Costello is a Fellow of the Royal Society and has won several international prizes.

Perimeter Institute for Theoretical Physics | University of Waterloo

Kitty Newman Memorial Award

For outstanding contributions from an emerging scholar in the field of philosophy.

Kimberley Brownlee is the leading expert in two areas of moral and political philosophy: a) the philosophy of social human rights, loneliness, and belonging, and b) the ethics of conviction and civil disobedience. She is a Professor and Tier 1 Canada Research Chair at UBC and is inspiring a growing community of scholars to turn their collective attention to previously neglected

problems concerning sociability, rights, and belonging.

Department of Philosophy | The University of British Columbia

Lorne Pierce Medal

For an achievement in critical or imaginative literature.

A pioneer in Canadian literary studies, **Robert Lecker** is a leading international authority on the history and development of Canadian literature. His intellectual rigour, extraordinary productivity, and unwavering commitment to the study of Canadian literature have defined and broadened the field. Lecker's academic pursuits—as scholar, editor, anthologist, and teacher—complemented by his wider public activities as publisher and memoirist, have transformed our understanding of Canadian cultural identity.

Department of English | McGill University

McLaughlin Medal

For important research of sustained excellence in medical science.

John Dick's discoveries have revolutionized our understanding of the stem cells that drive human normal and leukemic blood development. He developed a stem cell assay where normal or leukemic human blood cells are transplanted into immune-deficient mice. With this assay, new classes of stem cells were discovered that redefined the roadmap of human blood production and leukemia stem cells were found that originate and maintain leukemia leading to treatment failure.

Princess Margaret Cancer Centre | Department of Molecular Genetics | University of Toronto

Michael P. Païdoussis Medal

For recognition of an individual who has made outstanding contributions to research, education and leadership in applied mechanics.

Huajian Gao has been awarded the inaugural Michael P. Païdoussis Medal for his pioneering contributions in nanomechanics of engineering and biological systems, a new research field at the interface of solid mechanics, materials science and biophysics that he helped create during the past two decades, as well as for his outstanding contributions to the education of new generations of mechanicians and leadership in the international applied mechanics community.

School of Mechanical and Aerospace Engineering | Nanyang Technological University

This award is made possible with the support of the Canadian National Committee for the International Union of Theoretical and Applied Mechanics (CNC-IUTAM).

Miroslaw Romanowski Medal

For scientific work relating to environmental problems.

Rashid Sumaila is one of the most internationally recognized interdisciplinary ocean and fisheries economists, and one of the world's most innovative researchers on the future of the oceans. His work has challenged today's approaches to marine governance, generating exciting new ways of thinking about our relationship to the marine biosphere, such as protecting the high seas as a 'fish bank' for the world and using 'intergenerational discount rates' in economic valuation.

Institute for the Oceans and Fisheries | School of Public Policy and Global Affairs | The University of British Columbia

Rutherford Memorial Medal in Chemistry

For outstanding research in chemistry.

Aiping Yu is an outstanding researcher and emerging leader dedicated to converting fundamental laboratory discoveries in nanotechnology and 2D materials to commercial products. Her research has led to a more cost-effective graphene material and Li-ion supercapacitors based on graphene sponge and MXene that are comparable to batteries but with significantly reduced charge time. She is poised to make more exciting contributions to next generation energy storage devices.

Department of Chemical Engineering | University of Waterloo

Rutherford Memorial Medal in Physics

For outstanding research in physics.

Daryl Haggard is a world-expert in observations of black holes, including Sagittarius A*, the supermassive black hole in the Milky Way Galaxy. She uses elite telescopes to investigate exotic black hole environments, where strong gravity plays a key role. She is also internationally known for her contributions to multi-messenger astrophysics, including the joint discovery of X-ray and gravitational wave emission from the first known collision of two neutron stars.

McGill Space Institute | Department of Physics | McGill University

Ursula Franklin Award in Gender Studies

For contributions to furthering our understanding of issues concerning gender.

For over twenty years, **Valerie Oosterveld's** gender-focused scholarly work has made significant contributions to, and instigated change in, the understanding and formation of international criminal law. Her publications are widely recognized as 'must read' scholarship for those examining, or prosecuting, gender-based forms of genocide, crimes against humanity, and war crimes. Scholars and courts in Canada and around the world have cited her research.

Faculty of Law | Western University

Willet G. Miller Medal (Ocean & Atmospheric Sciences)

For outstanding research in ocean and atmospheric sciences.

Kimberly Strong is an internationally recognized atmospheric physicist who employs an array of spectroscopic techniques to probe the composition of the atmosphere from balloons, satellites, and surface observatories. She has developed novel experimental methodologies and established new observing capabilities in the Canadian Arctic and elsewhere. Her research has provided new insights into the physical and chemical processes that drive atmospheric change, furthering our understanding of ozone depletion, air quality, and climate.

Department of Physics | University of Toronto

Willet G. Miller Medal (Earth Sciences)

For outstanding research in earth sciences.

Donald Bruce Dingwell has pioneered the experimental investigation of molten systems in the earth sciences. The results have had vast implications for our understanding of magma in ore-forming systems and explosive volcanism. He is one of the most visible Canadians in international science, the recipient of a dozen international and national awards and medals, a member of 5 scientific academies, and has led IAVCEI, EGU and ERC.

Department of Earth and Environmental Sciences | Ludwig-Maximilians University of Munich

Yvan Allaire Medal

For outstanding contributions in governance of public and private organizations.

Christopher Alcantara is a leader in the study of multilevel governance. His work has generated new insights into the complex political relationships between Indigenous communities and all three levels of government in Canada. His books, articles and media commentary as well as his advisory activities have helped shape policy on modern treaty negotiations and government and community efforts to strengthen relationships with Indigenous communities.

Department of Political Science | Western University

Institut sur la gouvernance d'organisations privées et publiques

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