

2022 EOAS Selection of New Fellows, Ranking and Explanation

The EOAS DCSNF met via a Zoom conference on March 2, 2022. Committee members are: Keiko Hattori (Chair), Roy Hyndman, Peter Leavitt, Nigel Roulet, Sarah-Jane Barnes, Julie LaRoche, Graham Pearson, Kimberley Strong, Christopher Dragan (RSC).

CD reminded committee members that discussions must remain confidential. CD also mentioned that the meeting would not be recorded. KH mentioned that the committee would select 4 A-candidates and 2 B-candidates. A-candidates are guaranteed to be elected as Fellows.

Concerns were raised among committee members about nominees for Fellows working exclusively outside Canada. Since the criteria for Fellows do not state any specific contributions to Canada, committee members ranked such nominees solely based on the nominees' excellence in science. However, committee members feel that candidates for Fellow should have a contribution to Canadian science.

Ranking

Ranking was conducted independently before the Zoom meeting, without discussions prior to the meeting. Due to conflict of interests, candidates from a committee member's own university were excluded from ranking. The top score was 1 and lower scores have a larger value.

Nominees (in alphabetical order)

The following nominees received the highest levels of support from the Selection Committee members. They are undoubtedly at the top of their respective fields with several high-ranking journal publications, high impact levels, and involvement in scientific leadership that can only be described as exceptional.

Villy Christensen (The University of British Columbia)

Villy Christensen is one of the most influential fisheries scientists in the world. He developed Ecopath with Ecosim (EwE), ecosystem modelling software that is being used by thousands of fisheries managers and scientists around the world. National Oceanic and Atmospheric Administration (NOAA), US regulatory agency, recognized EwE as one of major scientific breakthroughs in the organization's 200 year history. His research activities focus on sustainable fishing through modern approaches to fisheries management. He evaluates the impact of climate change on life in the oceans, and with that, assessments of future marine biodiversity and ecosystems. His innovative research and excellence is reflected by over 325 publications that are cited over 39,000 times (Google Scholar, Nov 2021; Scopus H index of 54). He received the Award of Excellence from American Fisheries Society in 2020 and was elected Fellow of the American Fisheries Society in 2021. His research is published in high ranking journals, including seven papers in *Science* and *Nature*. Christensen has made a significant

contribution to training the next generation through graduate student supervision and numerous workshops for professionals.

Nicholas Coops (The University of British Columbia)

Nicholas Coops holds a Canada Research Chair (Tier 1) in remote sensing. He is a global leader in using airborne technologies to quantify forest dynamics, structure and function, and changes in forest cover. He designed and built an “automated multi-angular spectro-radiometer” (AMSPEC) to measure high-resolution spectra data from forest canopies to determine key carbon fluxes and changes in terrestrial environments. The instrument allows monitoring the overall Earth System across a range of spatial and temporal scales. This work alone has resulted in over 25 papers, including one with NASA on the design of a new “PhotoSynsat” satellite sensor platform. His work, linking between forest structure and function, has allowed scientists to define critical aspects of land biodiversity through remote sensing approaches. He has published over 470 refereed papers which have been cited over 28,000 times, and has been invited to write two Comments in Nature. His global excellence has been recognized by several awards: Marcus Wallenberg Prize in 2020, which is commonly known as the Nobel Prize in Forestry, Killam Research Award in 2020, Silver (2014) and Gold (2020) medals of the Canadian Remote Sensing Society, Carl Pulfrich Award (2013), and Killam Research Fellowship (2012). Furthermore, Coops has an excellent record in education, being awarded the Killam Teaching Prize in 2015. Nicholas Coops has made significant contributions to training and education of students and young scientists.

Miriam Diamond (University of Toronto)

Miriam Diamond has had a prolific scientific career working on persistent organic pollutants. Her science is transistional by making discoveries on the fundamentals of how organic pollutants behave and move through the environment. She has used her scientific knowledge to inform public policy debates that have led to legislation in Canada and international guidelines to strengthen the Stockholm Convention on POPs. She has published an huge number of papers in scholarly journals that have been cited of 30,000 times (Scopus H index of 87), and has been closely involved in training graduate students; in addition, her science outreach through public media is impressive. She has received many awards and distinctions, including Scientist of the Year of the Royal Canadian Geographical Society; she is a Fellow of the Society of Environmental Toxicology and Chemistry, the Royal Geographical Society, and the Royal Canadian Geographical Society.

Gregory Edgecombe (Natural History Museum, London, UK)

Gregory Edgecombe is a Canadian scientist who has pursued most of his career in Australia and the United Kingdom after his post-doctoral studies in Canada. He is Head of Invertebrate and Plant Palaeobiology, Department of Earth Science, The Museum of Natural History, London, UK. He has a world-recognized reputation for his work on the genetic and molecular biology of the phylogeny of arthropods. He has received the President’s Medal, Palaeontological Association, and was elected Fellow of the Royal Society (UK) in 2018. He has published over 50 scholarly works, including papers in the *Proceedings of the Royal Society*, *PNAS*, *Nature Communications* and *Ecology and Evolution*, and *PLoS One*. He has made a significant contribution to training the

next generation on palaeobiologists. He has also been involved, through the museum, in public science.

John-Michael Kendall (University of Oxford)

Kendall is a pioneer in understanding the structure of Earth based on anisotropy of seismic waves. He revealed multidisciplinary aspects of Earth processes and structure. He identified the importance of melt as the cause for anisotropy in the mantle, which led his research in deep mantle magmatism. He then correctly predicted that magmas are the driving forces in splitting rigid thick continents (continental rifting), contributing to understanding the fundamental process of plate tectonics. He then applied his seismic data to understand the deepest part of the mantle. He was the first to provide conclusive evidence for the heterogeneous nature of the lowest mantle, the boundary between the core and mantle. Recently he has mapped cracks and fractures in the crust for flows of liquids and gases using his knowledge of seismic anisotropy.

He is highly productive and has disseminated his findings in high-impact journals, such as nine papers in *Nature*, three in *Nature Communications*, two in *Nature Geoscience*, and twenty two in *Earth and Planetary Science Letters*. He is a Fellow of the Royal Society (UK).