

Chemistry Education Awards 2024

The 2024 Distinguished Contribution to Chemistry Education (DCCE) Award was awarded to Mei-Hung Chiu

The CCE Distinguished Contribution to Chemistry Education Award was presented to Professor Emerita Mei-Hung Chiu from the National Taiwan Normal University (NTNU), during the opening ceremony of the International Conference on Chemistry Education (ICCE2024) which took place in Pattaya, Thailand in July 2024. The DCCE lifetime award recognizes Professor Chiu's outstanding contribution to improving the teaching and learning of chemistry at both local and international levels, her contribution and leadership in international chemistry education forums and projects, and her leadership and service to IUPAC and the Committee on Chemistry Education over her career.

This is the second highest-honour award that she received from IUPAC, following her IUPAC Distinguished Woman in Chemistry & Chemical Engineering award in 2021. She has also received two other regional lifetime awards—the Distinguished Contribution to Science Education Awards from the Federation of Asian Chemical Societies (FACS) (2009) and the East-Asian Science Education Association (EASE) (2016). She has led numerous Young Ambassadors for Chemistry (YAC) and Flying Chemistry Educators (FCEP) outreach projects on behalf of the CCE in emerging countries with lasting positive impact.

Mei-Hung Chiu has served IUPAC and the international science education fraternity in many different capacities during the past two decades. She is a former chair of the CCE (2012 – 2015) and was an elected member of IUPAC Bureau and Executive Committee for two terms (2016 – 2023). She acted as a co-lead and IUPAC representative on the multi-disciplinary project, “A Global Approach to the Gender Gap in Mathematical and Natural Sciences” (2017 ongoing),



Top: Mei-Hung Chiu (2nd from left), with Peter Mahaffy (former CCE Chair), Supawan Tantayanon (ICCE2024 Chair), and Marietjie Potgieter (CCE Chair)

Above: CCE 2024 Awardees Shelley Rap, Amanda Bongers, and Mei-Hung Chiu

and represented IUPAC as a founding member for the ICSU-affiliated Standing Committee for Gender Equality in Science (SCGES) (2020 – 2023). Professor Chiu was the first president of the National Association for Research in Science Teaching (NARST, USA) (2016 – 7) from a non-English speaking country, and the first invited plenary speaker with chemistry education as specialization at an IUPAC World Chemistry Congress (Sao Paulo, 2017). She is currently a member of the International Science Council (ISC) Governing Board (2021 – 2024) and a co-chair of the ISC Consultation Group on Science Education (2023 – 2024).

Professor Chiu has assembled an impressive scholarly record that has greatly contributed to chemical education research and to the teaching and learning of chemistry education, and she is cited by many researchers all over the world. Her research approach blends providing solutions to important problems encountered in practice with scholarly theoretical contributions. The IUPAC Committee on Chemistry Education acknowledges with great appreciation the substantial and important contributions that she has made to literature, and the impact she has had on the teaching and learning of chemistry through her numerous professional development initiatives and presentations to teachers and chemical educators worldwide.

Past award winners of this prestigious award are:

- 2010: Peter Atkins, Oxford University, England
- 2010: Lida Schoen, CCE Young Ambassadors of Chemistry, Netherlands
- 2012: Peter Mahaffy, The King's University, Canada
- 2012: Bob Bucat, University of Western Australia, Australia
- 2014: Morton Hoffman, Boston University, USA
- 2016: Kazuko Ogino, Tohoku University, Japan
- 2018: Supawan Tantayanon, Chulalongkorn University, Thailand

The 2024 Outstanding Early Career Researcher in Chemistry Education Award has been awarded to Amanda Bongers and Shelley Rap

The inaugural 2024 CCE Outstanding Early Career Researcher in Chemistry Education Award, co-sponsored by the IUPAC Committee on Chemistry Education (CCE) and 27th International Conference on Chemistry Education (ICCE) Organizing Committee, recognizes early career researchers who are producing high quality and impactful chemical education research as evidenced by their research output, such as journal articles, conference contributions, and evidence of research that translates into practice. The awardees are selected from the nominees by a committee of the CCE. The prize consists of a certificate, a plaque, and a registration fee waiver for the ICCE. In 2024 the award was presented at the 27th ICCE held in Pattaya, Thailand to two awardees, namely:

- Prof. Amanda Bongers, Department of Chemistry, Queen's University, Canada
- Dr. Shelley Rap, Department of Chemistry, Weizmann Institute of Science, Israel

Amanda Bongers is an Assistant Professor of Chemistry in the Department of Chemistry at Queen's University in Ontario, Canada. Prof. Bongers received her B.S. in chemistry from the University of Waterloo (2011) and her PhD in Organic Chemistry from the University of Ottawa with André M. Beauchemin (2016). She then worked with Alison Flynn and Georg Northoff at the University of Ottawa as a postdoctoral researcher in chemistry education research. She joined the faculty at Queen's University as an Assistant Professor in 2019.

Prof. Bongers' research explores how people learn by bridging cognitive and neuroscientific findings into qualitative research and classroom insights. The key areas in which Dr. Bongers' research translates into practice are in (i) Green Chemistry Education, (ii) Mental models, and (iii) Neuropedagogy. Her group is beginning to explore how pedagogy and practices from the arts (deep looking, drawing, mental imagery) can be integrated into chemistry classrooms and laboratory education. She has also begun building collaborations with neuroscientists, computer scientists, and AI experts to study immersive learning in extended reality.

Shelley Rap is a Lecturer in the Department of Chemistry at the Weizmann Institute of Science in Rehovot, Israel. Dr. Rap received her B.S. (2008) and M.S. (2011) in chemistry from Bar Ilan University. She received her PhD with Excellence in Science Teaching (2016) from the Weizmann Institute of Science with Ron Blonder as her supervisor. She then continued as a post-doctoral fellow working with Ron Blonder followed by a post-doctoral fellowship at Leibniz Institute for Science and Mathematics Education at Kiel University working with Ilka Parchmann. She joined the Weizmann Institute for Science as an independent scholar in 2019.

Dr. Rap's research focuses on integrating technology into teaching practices and fostering students to develop into responsible global citizens capable of addressing challenges like climate change. She led the development of chemistry education programs related to the United Nations Sustainable Development Goals (SDGs) and studies how the integration of these programs in chemistry education influenced the development of lifelong skills such as students' critical thinking and argumentation. These programs include innovative teaching approaches such as the development of a Chemical Escape Room, which promotes chemical education through interactive gameplay.

<https://iupac.org/chemistry-education-award-2024/>