



The Combustion Institute

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Gaby Ciccarelli

2024 Candidate Profile: The Combustion Institute Board of Directors

Reasons for Nomination

I have been a member of The Combustion Institute for more than 20 years, elected Fellow in 2022. I am Colloquium Co-chair (coordinator) for the 40th International Symposium on Combustion. I have been on the Canadian Section of The Combustion Institute executive board as Treasurer for the last 10 years and I am hosting the 2024 Canadian Section meeting.

In response to climate change concerns, the electrification of the transportation sector and the availability of renewable energy from wind and solar will change the energy landscape over the next few decades. Nonetheless, combustion-based systems will remain a significant part of sectors where the energy density, portability, and economics of liquid and gaseous fuels are needed.



If elected as a member of the Board, I will promote combustion science and technology and ensure the continued dissemination of research activities around the world. The Combustion Institute needs to not only provide a forum for the presentation of fundamental and applied combustion science but also provide a mechanism to connect researchers in academia and industry. I will lead initiatives to connect key industrial challenges with leading researchers from academia.

I would welcome the chance to help define The Combustion Institute for the next six years.

See the next page for the candidate's curriculum vitae.

Current Positions:

- Professor, Queen's University, Smith Engineering, Kingston, Ontario, Canada

Education:

- BSc Mechanical Engineering, McGill University (1986)
- MSc Mech. Engineering, McGill University under supervision of Drs. David Frost and Rom Knystautas (1988)
- PhD Mech. Engineering, McGill University under supervision of Drs. David Frost and Rom Knystautas (2001)

Selected Professional Honors, Awards, Fellowships, and Visiting Appointments:

- Institute for the Dynamics of Explosions and Reactive Systems Rem Soloukhin Award (2023)
- Fellow of The Combustion Institute (2022)
- Plenary speaker at International Colloquium of the Dynamics of Explosions and Reactive Systems (ICDERS), Naples June (2022)
- Best paper award: 38th International Symposium on Combustion, Australia (2021)
- Plenary lecture at Combustion Institute Canadian Section (CICS) Spring Technical Meeting, Waterloo, Canada (2016)
- Best paper award: 23rd Water Reactor Safety Information Meeting, Bethesda, Maryland, 1995

Scientific Record:

- Publications: **67** (published and/or in press) in peer-reviewed international journals, 2821 citations
- Google Scholar: all time: **h-index 25; i10-index 43** (since 2019: **h-index 23; i10-index 35**)

Selected Publications:

- S. Gray, M. McLoughlin, **G. Ciccarelli**, Study of fuel oxygen mixing in a RDE cold analog, *Combustion and Flame* 260, 113250, 2024.
- C. Metrow, V. Yousefi, **G. Ciccarelli**, Detonation propagation across a stratified layer with a diffuse interface, *Proceedings of The Combustion Institute*, 38(3):3565-3574, 2021.
- M. Kellenberger and **G. Ciccarelli**, Simultaneous schlieren photography and soot foil in the study of detonations, *Exp. Fluids* 58 (138), 1-13 2017.
- C. Johansen, **G. Ciccarelli**, Visualization of the unburned gas flow field ahead of an accelerating flame in an obstructed square channel, *Combustion and Flame*, 156 (2):405-416, 2009.
- **G. Ciccarelli**, S. Dorofeev, Flame Acceleration and Transition to Detonation in Ducts, *Progress in Energy and Combustion Science*, 34(4): 499-550, 2008.

Services to the Community:

- Explosions Hazards, Detonation Applications and Supersonic Combustion Colloquium coordinator for the 40th International Symposium on Combustion, Milan, Italy
- Local organizing committee for 39th International Symposium on Combustion, Vancouver, Canada
- Detonations Colloquium co-chair for the 36th International Symposiums on Combustion, Seoul, Korea.
- Combustion and Flame editorial board (2014-2020)
- Executive Board of The Combustion Institute Canadian Section, Treasurer (2013—present)
- Chair of organizing committee for The Combustion Institute Canadian Section meeting, Queen's University 2024 and 2004
- Executive Board member of Institute for Dynamics of Explosions and Reactive Systems (2018—present)
- Program chair for International Colloquium of the Dynamics of Explosions and Reactive Systems (ICDERS), Beijing 2019
- Editor of ICDERS special issue of *Shock Waves* (2013—present)
- Managing editor of *Shock Waves* (2022—present)