

Name: Carlo U. Segre
Present Position: Duchossois Leadership Professor of Physics, &
Director of the Center for Synchrotron Radiation Research & Instrumentation
Organization: Illinois Institute of Technology

Address: Dept. of Physics & CSRRI
3105 S. Dearborn St.
Chicago, IL 60616
U.S.A.

Telephone: 312.567.3498
e-mail: segre@iit.edu

Chapter Affiliation: Illinois Institute of Technology (#085)

Candidate's Statement: The job of the Nominating Committee is critical to the health of the Society. Selection of outstanding candidates who will serve as President and bring innovative vision to the Board and National Headquarters will serve to keep Sigma Xi viable over the long term. Over the past six years, while serving two terms as a member of the Sigma Xi Board, I have learned a great deal about the inner workings and the challenges we face, and the leadership that is required to lead the Society. I have had the good fortune to be part of many committees that serve to provide support and guidance to the Board. I believe those experiences and the knowledge I have gained learning from past presidents makes me a worthy candidate to represent the North Central Region Chapters on the Committee on Nominations to help select the future leader of the Society.

Sigma Xi and Other Activities: I have served as Director of the North Central Region (2016-2022), President of the IIT Chapter of Sigma Xi (2005-2016), and delegate to the annual meeting (2006), I have served two terms on the Committee on Awards, serving as Chair since 2020. I am a member of the Ad Hoc Committee on Pathways to Leadership and the Committee on Standing Rules for the 2022 International Forum on Research Excellence.

I am also Director at Large, serving my first term since 2021, and Fellow of the International Center for Diffraction Data. I served as the chair of their Education Subcommittee (2005-2020) as well as member of the Scholarship Committee (2005-present) and the Meeting Support Committee (2005-present). Since 2008, I have been serving as a member of the Advanced Photon Source Beam Time Allocation Committee and from 2018-2021 as an elected member of the Advanced Photon Source User Organization Steering Committee. In addition to my administrative responsibilities as Associate Chair of the Department of Biological, Chemical and Physical Sciences (1993-1999), Associate Dean for Research of Armour College (2002-2004), Associate Dean of the Graduate College (2004-2011), and Interim Chair of the Department of Chemistry (2016-2019), my service to IIT includes being a member of the Faculty Council (1986-1988), Chair of the Research subcommittee for the National Commission for IIT (1994-1995), Chair of the University Committee on Promotion and Tenure (2008), and liaison between IIT and Argonne and Fermi National Laboratories. Since 1993, I have been the organizer of the High School Bridge Building Contest (Chair, 1993-present) which runs a large Chicago Regional contest annually and an International contest biannually on the IIT campus. Currently I am Director of IIT's Center for Synchrotron Radiation Research and Instrumentation which I helped found in 1988. In this capacity I am promoting synchrotron radiation research throughout the IIT campus.

Biographical Information:

Education: Ph.D. in Physics, University of California, San Diego, 1981; B.S. Physics and B.S. Chemistry, University of Illinois, Urbana-Champaign, 1976.

Employment: Assistant Professor of Physics, Illinois Institute of Technology, 1983-1989; Associate Professor of Physics, Illinois Institute of Technology, 1989-2001; Professor of Physics, Illinois Institute of Technology, 2001-present; Duchossois Leadership Professor, Illinois Institute of Technology, 2011-present; Staff Associate, International Centre for Theoretical Physics, Trieste, Italy, 1990-1993; Deputy Director (1994-2020) and Director (2020-present) of the Materials Research Collaborative Access Team at the Advanced Photon Source; Deputy Director, Biophysics Collaborative Access Team, 2012-2019. Since 2014, I have been CTO of Influit Energy, LLC a startup company funded by DARPA and DoD to develop a nanofluid flow battery for transportation and grid storage (over \$10M funding awarded).

Awards: Fellow, International Center for Diffraction Data (2006), Fellow, American Association for the Advancement of Science (2013); Sigma Xi Research Award, Senior Faculty Division, IIT (2014).

Grants (as PI) at Illinois Tech: ARPA-E, Development of a Nanoelectrofuel Flow Battery (2013-2015); Department of Energy, Nuclear Energy Research Initiative 2005-2009; NSF Materials World Network 2008-2012; Department of Education Graduate Assistantships in Areas of National Need 2009-2013 and 2019-present; Canadian Light Source staffing for Canadian research support at the Advanced Photon Source (2015-present); operations support for the Materials Research Collaborative Access Team (from Argonne National Laboratory, Environmental Protection Agency, Honeywell UOP, BP Ventures, University of Notre Dame, Los Alamos National Laboratory), 1997-present.

Research: Materials characterization using synchrotron radiation, specifically fuel cell catalysts, advanced materials for nuclear reactors, multiferroics and metal-insulator systems. 22 Ph.D. and 6 M.S. students graduated, currently advising 8 Ph.D. students. More than 30 undergraduate research advisees over my time at IIT. Over the past 4 years, I have worked with teams of High School students on battery research projects using the Advanced Photon Source.