

MATTHEW C. SULLIVAN

<http://faculty.ithaca.edu/mcsullivan>

Ithaca College
Department of Physics and Astronomy
Ithaca, NY 14850

Phone: (607) 274-3964
Fax: (607) 274-1773
mcsullivan@ithaca.edu

EDUCATION

- 2010-2022 **Ithaca College**, Ithaca, NY
B.S. in Chemistry, 2022 (expected)
- 1998-2004 **University of Maryland**, College Park, MD
Ph.D. in Physics, 2004
M.S. in Physics, 2000
Dissertation: The Normal-Superconducting Phase Transition of YBCO in Zero Magnetic Field (C. J. Lobb, advisor)
- 1992-1996 **Stanford University**, Stanford, CA
A.B. in German Studies, 1996
B.S. in Physics, 1996

RESEARCH AND TEACHING EXPERIENCE

- 2016-present **Professor.** Ithaca College, Ithaca, NY.
2011-2016 **Associate Professor.** Ithaca College, Ithaca, NY.
2005-2011 **Assistant Professor.** Ithaca College, Ithaca, NY.
Research in experimental low-temperature physics and experimental x-ray physics. Superconductivity research focuses on the properties of the cuprate superconductors. X-ray research focuses on the dynamics of layer-by-layer atomic thin-film growth. Sample growth via pulsed laser deposition, thermal evaporation, and bulk crystalline growth.
- 2012-2013 **Visiting Associate Professor.** Energy Materials Center at Cornell, School of Applied and Engineering Physics, Cornell University, Ithaca NY.
Research in experimental x-ray physics, with an emphasis on the physical processes that occur during growth of materials via pulsed laser deposition. Much of this work was carried out at the Cornell High Energy Synchrotron Source (CHESS).
- 2004-2005 **Process Engineer.** Intel Corporation, Hillsboro, OR.
Growth of thin-film Si/Ge/B layers via chemical vapor deposition, analysis via secondary ion mass spectrometry.

HONORS AND AWARDS

- Dean of Humanities and Sciences Merit Award, Spring 2014.
Dean of Humanities and Sciences Merit Award to Physics Department, Spring 2006.
Sigma Xi, the Scientific Research Society, Spring 2009.
Physics Department, Level II Merit Award, 2010, 2012, 2014, 2015, 2017, 2018.
Physics Department Merit Award for Excellence in Teaching, Spring 2006, 2009.

SELECTED PEER-REVIEWED ARTICLES

(undergraduate researchers in bold)

1. **M.C. Sullivan**, M.J. Ward, Araceli Gutiérrez-Llorente, **Eli R. Adler**, H. Jorress, A. Woll, J. D. Brock, "Complex oxide growth using simultaneous in situ RHEED and x-ray reflectivity: When is one layer complete?", *Applied Physics Letters* **106**, 031604-1 to 031604-4, (2015).
2. Araceli Gutiérrez-Llorente, Howie Jorress, Arthur Woll, Megan E. Holtz, Matthew J. Ward, **M. C. Sullivan**, David A. Muller, Joel D. Brock, "Epitaxial crystals of $\text{Bi}_2\text{Pt}_2\text{O}_7$ pyrochlore through the transformation of $\delta\text{-Bi}_2\text{O}_3$ fluoride," *Applied Physics Letters Materials* **3**, 036105-1 to 036105-6, (2015);

highlighted by the editors for special interest as a press release:

<http://www.aip.org/publishing/journal-highlights/researchers-synthesize-new-thin-film-material-use-fuel-cells>.

3. Thomas J. Pfaff, **Maksim Sipos**, **M. C. Sullivan**, Max Tran, B. G. Thompson, "The Use of Statistics in Experimental Physics," *Mathematics Magazine* **86**, 120 to 131 (2013).
4. **M. C. Sullivan**, **R. A. Isaacs**, **M. F. Salvasaggio**, **J. Sousa**, **C. G. Stathis**, **J. B. Olson**, "Scaling analysis of the static and dynamic critical exponents in underdoped, overdoped, and optimally doped $\text{Pr}_{2-x}\text{Ce}_x\text{CuO}_{4-y}$ films," *Phys. Rev. B* **81**, 134502-1 to 134502-6 (2010).

SELECTED FUNDING AND GRANTS

"RUI: Collaborative Research: Structural and Compositional Modification of Memristive Niobium Oxide Films for Neuromorphic Computing Applications" Submitted 10/2020 to the National Science Foundation. Requested **\$196,103**. Recommended for funding.

"RUI: Fluctuations and Phase Transitions in Iron Pnictide Superconductors." Submitted 11/2012 to the National Science Foundation. Awarded **\$185,000** in 08/2013. Grant active 05/2013 - 05/2017.

"RUI: Critical Dynamics of the Electron-Doped Cuprate Superconductors." Submitted 11/2006 to the National Science Foundation. Awarded **\$188,820** external with \$13,400 internal matching in 06/2007. Grant active 06/2007 - 06/2011.

NATIONAL AND INTERNATIONAL OUTREACH

Created a YouTube channel for Ithaca College Physics with over **6 million views**.

Assisted in the creation of levitation/suspension demonstrations via email with scientists, engineers, and enthusiasts from the United States, Canada, England, Ireland, Romania, Spain, New Zealand, Mexico, Morocco, China, Turkey, Barbados, Portugal, and Singapore, including:

- 3 Physics / Materials Science professors (one in Sweden)
- 5 Science writers / TV producers
- 4 Science museum curators (including the Palais de la Découverte in Paris)
- 12 Undergraduate students and 10 secondary school students.

SERVICE

Service to the Department

Interim Chair, Department of Physics and Astronomy Spring and Summer 2019.

Faculty search committee member. NTEN search, 2016-2017, TE search, 2019-2020. TE search, diversity advocate, 2017-2018. TE search, diversity advocate, 2018-2019.

3-2 Engineering Program Liaison, 2009-2012, 2013-2018.

Physics Honor Society (Sigma Pi Sigma) advisor, 2006-present.

Service to the School of Humanities and Sciences

Humanities and Sciences Assessment Coordinator, 2017 - 2019.

Humanities and Sciences Assessment Committee, Chair 2017 - 2019.

Humanities and Sciences Faculty Senate member, 2009-2012.

Service to Ithaca College

Calendar Committee, 2020-present

Academic Policies Committee, Curriculum Subcommittee, 2017-2020. Curriculum Subcommittee Chair, 2018-2019.

Faculty Council member, 2007-2009, 2015-present.

All-College Tenure and Promotion Committee member, 2014-2015, 2016-2017.

Service to the Profession

External Program Reviewer, SUNY Brockport, Spring 2016.

External Program Reviewer, Buffalo State College, Spring 2015.

National Science Foundation Fellowship Review Panel member, representing Physics, 2014, 2015, 2017.