

# Bernard Paul Ricca

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## EDUCATION

<b>Ph.D.</b>	<b>University of Michigan</b> Physics Dissertation: <i>Measurements of the Impedance Presented to a Bow by a String</i>	1992
<b>M.S.</b>	<b>University of Chicago</b> Physics	1986
<b>B.S.</b>	<b>University of Dallas</b> Physics Degree awarded <i>cum laude</i> Thesis: <i>Two Dimensional Hydrogenic Atoms</i>	1984
<b>B.A.</b>	<b>University of Dallas</b> Mathematics Degree awarded <i>cum laude</i> Thesis: <i>Infinite Order Magic Squares</i>	1984

Additional graduate work in Education completed at Texas Christian University in the Educational Foundations and Research program (1997-2000)

## PROFESSIONAL EXPERIENCE

<b>Research Assistant Professor (Statistics)</b>	2021-present
<b>Research Collaborator</b>	2020-2021
<b>Lyda Hill Institute for Human Resilience, University of Colorado (Colorado Springs)</b>	
Pursuing research on trauma and resilience. Developing and applying nonlinear dynamical systems techniques to model resilience in trauma survivors and inform intervention and support systems. Assisting faculty and Institute Affiliates with statistical modeling on grants and manuscripts. Consulting and mentoring graduate students. Providing data wrangling and data management services.	
<b>Associate Professor</b>	2010-2021
<b>Assistant Professor</b>	2007-2010
<b>Department of Mathematics, Computer Sciences, and Statistics, St. John Fisher College</b>	
Taught undergraduate and graduate courses. Supervised undergraduate research in mathematics and statistics, and supervised graduate theses in mathematics, science, and technology education and graduate capstone experiences in applied data science. Advised students. Served on committees.	

- Director** 2017-2018  
**Statistics and Data Sciences, St. John Fisher College**  
 Responsible for overseeing the undergraduate statistics major and data sciences minor. This included course scheduling; capstone and internship experiences; curriculum; coordination with other Departments and Schools; overseeing faculty development; recruiting undergraduate students, and graduate students for the master's degree in applied data science.
- Program Director** 2010-2016  
**Graduate Mathematics, Science, and Technology Education (GMST), St. John Fisher College**  
 Responsible for overseeing all aspects of the GMST program, including course scheduling, recruiting, admission decisions, curriculum and course development, and faculty hiring and development. Coordinated with School of Education Office of Field Experiences on pre-service teacher placements. Prepared accreditation reports. Coordinated graduate mathematics tutors (2013-2015).
- Assistant Professor** 2004-2007  
**School of Education, Dominican University**  
 Taught graduate and undergraduate courses in mathematics, science, and technology education; taught graduate research methods and technology education. Developed online courses in technology education and research methods. Worked with alternative certification programs. Advised students.
- Assistant Professor** 2000-2004  
**School of Education, DePaul University (Barat Campus)**  
*(This position includes time in a similar position at Barat College; Barat College and DePaul University entered into an educational alliance in 2001.)*  
 Taught graduate education courses in mathematics and science pedagogy and research methods, and undergraduate courses in educational foundations, educational psychology, methods of teaching mathematics and science, and physics. Supervised master's theses. Developed online course in action research and a hybrid course in secondary mathematics pedagogy. Advised students.
- Director, Barat Program for Learning with Technology** 2001-2003  
**DePaul University (Barat Campus)**  
 Responsible for all aspects of the program. Supervised two full-time staff, provided professional development in school. Pilot tested and evaluated classroom technologies. Provided technology support to cooperating schools and classrooms. *(Grant funded position)*
- Director, Undergraduate Secondary Education** 2000-2002  
**Education Department, Barat College**  
 Supervised student teachers, assisted with field placements, coordinated partnerships with school districts. Evaluated adjunct faculty. Contributed to accreditation reports.
- Mathematics Department Chair** 1997-2000  
**Math/Science Teacher** 1996-2000  
**Bishop Dunne High School, Dallas, TX**  
 Taught middle school algebra and physical science, and high school math, physics, physical science, chemistry, and computer science. Chaired Academic Development Committee. Hired mathematics faculty. Led revision of mathematics program. Instituted Advanced Placement courses in computer science and physics. Assisted with grant writing. Coached varsity boys' soccer.
- Assistant Professor** 1994-1996  
**Visiting Assistant Professor** 1992-1994  
**Physics Department, University of Dallas**

Taught undergraduate physics courses. Advised students. Supervised undergraduate research. Responsible for the department machine shop.

**Physics Teacher** 1986-1988  
**Brother Rice High School, Chicago, IL**  
 Taught high school physics and geometry courses. Coached 9<sup>th</sup> grade boys' soccer.

## RESEARCH INTERESTS

My main research interest is the application of complex systems thinking – using notions more inspired by biological, developmental, and emergentist ideas than by mechanistic and predictive ideas - to social contexts such as education, learning, and trauma recovery. I am especially interested in developing and refining methods by which complex systems may be studied.

## RECENT & NOTABLE GRANTS

**High Performance Computing in Support of Student Research** 2019  
 Received funds to purchase a high-performance computer. Strategic Initiative Grant from St. John Fisher College. *Award amount: \$10,663.70.*

**Fisher Scholars for Rural Schools** 2009-2015  
 Robert Noyce Scholarship Grant received from the National Science Foundation to support pre-service secondary math teachers and mentor them during their initial teaching years. Award amount: \$889,665. Principal Investigator: **Bernard Ricca**. Co-Principal Investigators: Diane Barrett and Mark McKinzie. (Award number: DUE-0934489.)

**Advanced Inquiry-Based Chemistry Institute** 2011  
 Grant received from the Rochester Area Colleges Center for Excellence in Mathematics and Science to support a summer workshop to train secondary chemistry teachers in inquiry approaches to teaching. Award amount: \$18,800. Principal Investigators: Kristine Lantzky and **Bernard Ricca**.

**Inquiry-Based Chemistry Institute** 2010  
 Grant received from the Rochester Area Colleges Center for Excellence in Mathematics and Science to support a summer workshop to train secondary chemistry teachers in inquiry approaches to teaching. Award amount: \$14,400. Principal Investigators: Kristine Lantzky and **Bernard Ricca**.

**Barat Program for Learning with Technology** 2001-2003  
 Grant received from the U. S. Department of Education, Office of Postsecondary Education to assist teachers with the integration of technology into teaching and learning. Award amount: \$829,000. Principal Investigator: **Bernard Ricca**. Co-Principal Investigator: Joellen O'Connell. (Award number: P116Z010062-01.)

## PUBLICATIONS

### BOOKS

**Ricca, B.** (forthcoming, 2021). *An Introduction to Quantitative Complexity Research Methods in the social sciences*. Under contract to Routledge.

McCann, T., Johannessen, L., & **Ricca, B.** (2005). *Supporting beginning English teachers: Research and implications for teacher induction*. Urbana, IL: National Council of Teachers of English.

## BOOK CHAPTERS

- Ricca, B.** (2018). Engaging engaging: Topological reflections prompted by Bill Doll. In M. Quinn (Ed.), *Complexifying Curriculum Studies: Reflections on the Generative and Generous Gifts of William E. Doll, Jr.* (pp. 80-86). New York, NY: Routledge.
- Olive, J., & **Ricca, B.** (2000). Lining Up Data. In International Society for Technology in Education, *National Educational Technology Standards for Students - Connecting Curriculum and Technology* (pp. 122-125). Portland, OR: Author.
- Olive, J., & **Ricca, B.** (2000). Chaos and Beyond. In International Society for Technology in Education, *National Educational Technology Standards for Students - Connecting Curriculum and Technology* (pp. 126-129). Portland, OR: Author.
- Taylor, H., Barr, D., Moursund, D., Dahlby, G., Fenner, C., Kirst, S., Leipolt, M., Mason, C., & **Ricca, B.** (2000). Innovations: Past, Present, Future. In International Society for Technology in Education, *National Educational Technology Standards for Students - Connecting Curriculum and Technology* (pp. 264-271). Portland, OR: Author.
- Taylor, H., Barr, D., Moursund, D., Dahlby, G., Fenner, C., Kirst, S., Leipolt, M., Mason, C., & **Ricca, B.** (2000). When Does Data Become Knowledge? In International Society for Technology in Education, *National Educational Technology Standards for Students - Connecting Curriculum and Technology* (pp. 272-277). Portland, OR: Author.

## MONOGRAPHS, SYMPOSIUM PROCEEDINGS and TECHNICAL REPORTS

- Green, K. & **Ricca, B.** (2013). The evolution of student ideas: The case of multiplication. In S. Reeder & G. Matney (Eds.), *Proceedings of the 40<sup>th</sup> annual meeting of the Research Council on Mathematics Learning* (p. 189-196). Tulsa, OK.
- Ricca, B.** (2009). Refining models of complex systems. In N. Kellam & D. Stanley (Eds.), *Proceedings of the Fifth Complexity Sciences and Educational Research Conference*. Vancouver, British Columbia, Canada: University of British Columbia.

## INVITED ARTICLES

- Green, K. & **Ricca, B.** (2010). If Mowat & Davis are correct, then teaching is hard. *Complicity* 7(1) 63-69. Edmonton, Alberta, Canada: University of Alberta.
- Ricca, B.** (2009). The imposition of boundaries. *Complicity*. 6(1) 56-60. Edmonton, Alberta, Canada: University of Alberta.
- Ricca, B.** (2008). Enframing: The view from inside. *Complicity* 5(1) 115-120. Edmonton, Alberta, Canada: University of Alberta.
- McCann, T., Johannessen, L., & **Ricca, B.** (2004). Why do teachers leave, and what can we do to keep them? *Hot Topics*, #40. Normal, IL: Illinois Association for Supervision and Curriculum Development.

## RECENT and SELECTED PEER-REVIEWED ARTICLES

- Ricca, B.** (in preparation) Identifying phase transitions in categorical time series. To be submitted to *Northeast Journal of Complex Systems*.
- Harwell, A., Benight, C., **Ricca, B.**, Taylor, E., & Pincus, D. (in preparation). Facial affect dynamics and post-traumatic growth. Submitted to *Clinical Psychological Science*.
- Green, K., McKinzie, M., & **Ricca, B.** (in preparation). Working with unknown distributions. To be submitted to the *College Mathematics Journal*.
- Ricca, B.**, & Green, K. (under review). State space analyses and classrooms. *International Journal of Complexity and Education*.

- Ricca, B.** & Blaine, E. B. (accepted). Notes on nonparametric measures of effect size. To appear in *Journal of Experimental Education*. DOI: 10.1080/00220973.2020.1781752
- Ricca, B.** (2020). "No Child Left Behind" and the predictable failure of educational policy. *Journal of Policy and Complex Systems*, 20(1), 117-130. DOI: 10.18278/jpcs.6.1.7
- Ricca, B.**, Jordan, M., & Bowers, N. (2020). Seeking emergence through temporal analysis of collaborative group discourse. *Special Issue on Complex Dynamic Systems Approaches to Educational Research, Journal of Experimental Education*, 88(3), 431-447. DOI: 10.1080/00220973.2019.1628691
- Green, K. & **Ricca, B.** (2015). Understanding students' difficulties with integration through a card sort task. *Investigations in Mathematics Learning* 8(1), 1-22. DOI: 10.1080/24727466.2015.11790345
- Ricca, B.** & Green, K. (2015). Graph theoretic methods for the analysis of data in developing systems. *Quality and Quantity* 49(5), 2037-2060. DOI: 10.1007/s11135-014-0089-5
- Juba, K. & **Ricca, B.** (2014). Design of a problem based learning pain and palliative care elective course. *Currents in Pharmacy Teaching and Learning* 6(3), 421-428.
- Ricca, B.** (2012). Beyond teaching methods: A complexity approach. *Complicity: An International Journal of Education and Complexity*. 9 (2), 31-51.
- Kang, L., Brian, S., & **Ricca, B.** (2010). Constructivism in pharmacy education. *Currents in Pharmacy Teaching and Learning* 2, 126-130.

## EDITORIALS

- Ricca, B.** (2015). Why complexity? *Complicity: An International Journal of Education and Complexity* 12(2), 1-4.
- Ricca, B.** (2014). Expanding the gene pool. *Complicity: An International Journal of Education and Complexity* 11(2), 1-8.
- Ricca, B.** (2014). Milestones, touchstones, and just plain stones. *Complicity: An International Journal of Education and Complexity* 11(1), 1-4.
- Ricca, B.** (2012). Introduction to English language contributions: Meta-metaphysics (Guest editorial). *Complicity: An International Journal of Education and Complexity* 9(1) 3-6.

## INVITED RESEARCH PRESENTATIONS

- Ricca, B.** (2012, October). *The NSF Robert Noyce Scholarship program: An opportunity to increase content depth*. Paper presented at the Northeast Regional Meeting of the American Chemical Society. Rochester.
- McCann, T., Johannessen, L., & **Ricca, B.** (2006, November). *Supporting beginning English teachers: Navigating the critical junctures*. Invited paper presented at the National Conference of Teachers of English Annual Convention. Nashville, TN.

## INVITED TALKS

- Ricca, B.** (2020, December). *The Death of Chaos*. Webinar presented to the Complexity and Chaos Theories Special Interest Group of the American Educational Research Association. (Talk originally scheduled as the CCT SIG Keynote talk for the AERA 2020 Annual Meeting; conference cancelled in response to the Covid-19 pandemic.)

## RECENT PEER REVIEWED PRESENTATIONS

- Ricca, B.** (2021, October). *Identifying Phase Transitions in Categorical Time-Series Data*. Paper accepted to the Conference on Complex Systems, Lyon, France.

- Ricca, B.** & Jordan, M. (2021, October). Novel measures of small collaborative group functioning. Paper accepted to the 2021 Scholarly Consortium of Innovation in Psychology in Education conference. Virtual meeting
- Pincus, D., **Ricca, B.**, Jenkins, B., Frederick, D., Boehm, J., Berardi, V., & Moors, A. (2021, July). Emotional balance and resilience at the start of the Covid-19 pandemic. Paper presented at the Society for Chaos Theory in Psychology and the Life Sciences Annual Conference. Online.
- Ricca, B.** (2020, July). *On the Meanings of "Phase" in Collaborative Group Research*. Paper presented at the Society for Chaos Theory in Psychology and the Life Sciences Annual Conference. Toronto, ONT, Canada. (Paper delivered online; conference was moved to online format in response to the Covid-19 pandemic.)
- Ricca, B.** (2020, May). "No Child Left Behind" and the predictable failure of educational policy. Poster accepted to the Complexity and Policy Studies Conference, Washington, DC. (Poster not delivered; conference cancelled in response to the Covid-19 pandemic.)
- Ricca, B.** & Jordan, M. (2020, April). *Identifying Emergence in Collaborative Group Discourse*. Paper accepted for presentation at the American Educational Research Association Annual Meeting. San Francisco, CA. (Paper not delivered; conference cancelled in response to the Covid-19 pandemic.)
- Ricca, B.** & Bowers, N. (2020, April). *Knowledge Building as an Evolutionary Process: Towards a Method of Analysis*. Paper accepted for presentation at the American Educational Research Association Annual Meeting. San Francisco, CA. (Paper not delivered; conference cancelled in response to the Covid-19 pandemic.)
- Ricca, B.**, Blaine, B. E., Donovan, K., & Geraci, A. (2019, May). *Changing Paradigms: Faculty Moving to Data Science from Other Disciplines*. Poster presented at the United States Conference on Teaching Statistics, State College, PA.
- Ricca, B.**, Green, K., & McKinzie, M. (2019, April). *Working with unknown distributions*. Paper presented at the Eighth Annual Conference of the Upstate Chapters of the American Statistical Association, Rochester, NY.
- Jordan, M., **Ricca, B.**, Bruchok, C., Bowers, N., & Wakefield, W. (2018, June). *Garnering social support in a diverse cohort to manage uncertainty during a summer engineering research program*. Poster presented at the 13<sup>th</sup> Annual International Conference on the Learning Sciences. London, UK.
- Ricca, B.** (2018, April). *Tying it all together: Data science program culminating experience*. Paper presented at the Seventh Annual Conference of the Upstate Chapters of the American Statistical Association symposium on Undergraduate Data Science Curricula. Rochester, NY.
- Ricca, B.**, & Blaine, B. E. (2018, April). Investigations of a nonparametric effect size. Paper presented at the Seventh Annual Conference of the Upstate Chapters of the American Statistical Association conference. Rochester, NY.
- Lentine, J., & **Ricca, B.** (2018, April). Detecting phase transitions in small group conversations through entropy methods. Paper presented at the Seventh Annual Conference of the Upstate Chapters of the American Statistical Association conference. Rochester, NY.
- Ricca, B.** & Gilstrap, D. (2018, April). *Pedagogical content knowledge and coordinated components*. Paper presented at the American Educational Research Association Annual Meeting. New York, NY.
- Gilstrap, D., & **Ricca, B.** (2018, April). *The Roles of Variability in Quantitative Analysis of Complex Adaptive Systems*. Paper presented at the American Educational Research Association Annual Meeting. New York, NY.
- Ricca, B.** & Green, K. (2016, September). *State space analysis and its connection to the classroom*. Paper presented at the Conference on Complex Systems. Amsterdam, The Netherlands.
- Ricca, B.** & Jordan, M. (2016, September). *Temporal network analysis of small group discourse*. Paper presented at the Conference on Complex Systems. Amsterdam, The Netherlands.

## HONORS & AWARDS

<b>Outstanding Faculty Mentor</b> , Seventh Annual UPSTAT Conference	2018
<b>Nominee, Excellence in Teaching Award</b> , St. John Fisher College	2016
<b>Richard A. Meade Award</b> , Conference of English Education	2006
Awarded for research on teacher development as presented in the book <i>Supporting Beginning English Teachers</i> (With Thomas McCann and Larry Johannessen)	
<b>Winn Research Award</b> , Illinois Association of Supervision and Curriculum Development	2003
Awarded for <i>What Makes Novice Teachers Cry?</i> (With Thomas McCann and Larry Johannessen)	
<b>Finalist, Oak Cliff Chamber of Commerce “Golden Oak Award”</b> for teaching excellence	1999
<b>Tandy Technology Scholar</b> , Honorable Mention	1998
<b>Teacher of the Year, Bishop Dunne Catholic School</b>	1997
<b>Rice Pride Award for Teaching Excellence, Brother Rice High School</b>	1987

## PROFESSIONAL ACTIVITIES

### EDITING and REVIEWING

#### Editorial Board

*Northeast (US) Journal of Complex Systems* 2021-present

#### Reviewer

*Journal of Statistics Education* 2019-present

*Northeast (US) Journal of Complex Systems* 2019-present

*Investigations in Mathematics Learning* 2013-2016

*School Science and Mathematics Journal* 2012-2015

*Journal of Curriculum Studies* 2009-2015

*Complicity: An International Journal of Complexity and Education* 2004-2012

#### Editor-in-Chief

*Complicity: An International Journal of Complexity and Education* 2013-2019

#### Proposal Reviewer

2006-2012, 2014-2015, 2017

Chaos and Complexity Theories Special Interest Group, American Educational Research Association

#### International Advisory Board member

2008-2013

*Complicity: An International Journal of Complexity and Education*

## PROFESSIONAL OFFICES

#### Coordinator

2020-present

#### Executive Committee

2019-present

Northeast (United States) Regional Chapter, Complex Systems Society

#### Secretary/Treasurer

2013-2016

#### Chair

2007-2011

Chaos and Complexity Theories Special Interest Group, American Educational Research Association

#### Chair

2012-2013

#### Program Chair

2011-2012

#### Program Co-Chair

2009-2011

Science Teaching and Learning Special Interest Group, American Educational Research Association

## OTHER PROFESSIONAL SERVICE

- Publications Co-Chair** 2018-present
- Conference Program Committee** 2017-present  
 Northeast Regional Conference on Complex Systems (NERCCS). Responsible for co-editing 2019 conference proceedings as a special issue of the *Northeast Journal of Complex Systems*. Conferences held in Binghamton, NY and online.
- Doctoral Student Consultant** 2013-present  
 Informal consultation on complexity theory with doctoral students at other institutions (including University of Colorado at Denver, Tennessee State University, National Louis University, and University of Idaho).
- Feasibility Study Consultant** 2020  
 Led the feasibility study for the development of a data science program. Onondaga Community College, Syracuse, NY.
- Chapter Secretary/Treasurer** 2020  
 St. John Fisher College chapter of the American Association of University Professionals.
- Conference Planning Committee** 2017-2020  
 Complexity and Policy Studies (CAPS) 2018, 2019, and 2020 conferences. Conferences held in the Washington, DC area. (*No conference held in 2020 in response to the Covid-19 pandemic.*)
- Mathematics Curriculum Evaluator** 2015-2016  
 Brighton Central School District, Brighton, NY
- External Evaluator** 2012-2015  
 TUES grant *Collaborative Research: Analytical Method Transfer - Development of Case Studies*. St. John Fisher College. NSF Award number: DUE-1141021.

## RECENT and SELECTED PROFESSIONAL DEVELOPMENT PRESENTATIONS

- Introduction to Topological Data Analysis** 2020  
 Workshop presented at the Society for Chaos Theory in Psychology and the Life Sciences Annual Conference. Toronto, ONT, Canada. (*Conference moved to online format in response to the Covid-19 pandemic.*)
- Complexity Approaches to Analyzing Time Series Data** 2019  
 Workshop presented at the Scholarly Consortium for Innovative Psychology In Education (SCIPIE) conference, Savannah, GA.
- Statistics: Pre-AP Summer Institute** 2018  
 Four-day Pre-AP Summer Institute workshop for middle school mathematics teachers, Rochester, NY.
- Surprising Probabilities** 2018  
 Workshop presented at Association of Mathematics Teachers of the Rochester Area Spring Conference, Rochester, NY.
- Comparing Groups via Simulation** 2018  
 Workshop presented at Association of Mathematics Teachers of the Rochester Area Spring Conference, Rochester, NY.
- Teacher Quality Leadership Program** 2017  
 Facilitator/presenter of monthly robotics workshops for middle school mathematics teachers, Rochester, NY.
- Math via Games: Pre-AP Summer Institute** 2017  
 Four-day Pre-AP Summer Institute workshop for middle school mathematics teachers, Rochester, NY.



## ACTIVITIES RELATED TO TEACHING

- Course Development** 2001-2021  
 Partial list of courses developed at St. John Fisher College:  
Undergraduate courses: DIGC 240 – The Networked World; DIGC 258 – Physical Computing; DIGC 267 – Agent-Based Modeling; ENGL 1138 – Computers Reading Science Fiction; HNRS 290 – Complexity; MATH 400 – Special Topics: Network Theory; STAT 355 – Social Network Analysis; STAT 375 – Data Analytics and Statistical Computing; STAT 405 – Statistical Inference; STAT 1134 – Healthcare Analytics; SUST 210 – Systems Thinking.  
Graduate courses: GDAT 502 – Mathematical Foundations of Data Science; GDAT 622 – Network Analysis; GDAT 626 – Time Series Analysis; GMST 503 – Ecologies of Teaching; GMST 505 – Developing Reasoning; GMST 526 – Designing Math Curricula.
- Development team for Sustainability Major** 2017-2018  
 Part of the core team that developed a bachelor's degree in Sustainability. St. John Fisher College.
- Led development of Graduate Applied Data Science master's degree program** 2013-2018  
 Graduate program for students from all levels of quantitative backgrounds. Program especially intended for working professionals who need to develop data science skills. St. John Fisher College.
- Led development of *Elementary Math Specialist* program** 2011-2013  
 Graduate program to allow teachers certified in childhood education to deepen their understanding of mathematics content and pedagogy, enabling them to take roles as building mathematics leaders or coaches. St. John Fisher College.

## STUDENT ADVISING

- Undergraduate research supervision** 2013-present  
 Supervising undergraduate student research in mathematics, statistics, computer science, and mathematics education. Includes summer research experiences, senior Capstone projects, and student statistics projects presented at regional conferences. Science Scholars Program and Department of Mathematics, Computer Science, and Statistics, St John Fisher College.
- Student Advising** 2008-present  
 Advising GMST students (2008-2018), graduate Applied Data Science students (2018-2021), and undergraduate Mathematics Education (2008-2016) and Statistics Majors (2015-present). St. John Fisher College.
- Adviser, St. John Fisher College American Statistical Association Student Chapter** 2018-2020  
 Working with Chapter officers to organize and advertise meetings. Providing support and for Chapter students working with St. John Fisher College intercollegiate sports teams as data analysts.
- Doctoral Dissertation Advising** 2010-2019  
 Served on the committees of three students in the Executive Leadership program, one with a qualitative dissertation and two with a quantitative dissertation. School of Education, St. John Fisher College.
- William Lowell Putnam Exam Preparation** 2013-2017  
 Helped to prepare students to take the annual Putnam exam, which is taken by approximately 7000 undergraduates each year in North America. St. John Fisher College.
- Master's thesis supervision** 2010-2014  
 Supervised approximately 40 master's theses, mostly involving action research. Graduate Program in Math, Science, and Technology Education, St. John Fisher College.

## UNIVERSITY SERVICE

### SELECTED COMMITTEE WORK

<b>Academic Resource Committee</b>	2019-present
St. John Fisher College. ( <i>On sabbatical, fall semester, 2020.</i> )	
<b>Chair, Physics Task Force</b>	2019-2020
Led curricular and programmatic revisions in response to the external review of the Physics Department. St. John Fisher College.	
<b>Faculty Statutes Part 13 <i>ad hoc</i> Hearing Committee</b>	2018-2019
St. John Fisher College ( <i>This committee was convened to hear formal academic due process proceedings related to the dismissal of a tenured faculty member. Elected as a faculty representative.</i> )	
<b>Rank and Tenure Committee</b>	2016-2017
St. John Fisher College ( <i>Elected to fill the position of a member on medical leave.</i> )	
<b>Co-Chair, Middle States Commission on Higher Education Self-Study</b>	2013-2016
Led successful decennial re-accreditation effort. St. John Fisher College.	
<b>Graduate Program Council</b>	2010-2016
St. John Fisher College (Chair, 2011-2012)	

### RECENT COMMUNITY SERVICE

<b>Volunteer, Catchafire</b>	2021-present
Short-term volunteer consulting with various non-profits regarding data collection, databases, and data analysis.	
<b>Data Advisory Team</b>	2019-2021
ROC the Future, Rochester, NY. ( <i>ROC the Future is a community collaboration focusing on improving academic achievement in the Rochester Central School District.</i> )	
<b>Presenter, Sports Analytics and Player Interactions</b>	2019
Presented to the Honeyoye Falls-Lima High School Stem Club	
<b>Host and Co-Organizer, Rochester Area Physics Teacher Organization (RAPTOR)</b>	2015-2019
RAPTOR met monthly during the school year to provide professional development for area physics teachers. Hosted at St. John Fisher College.	
<b>Host, Finger Lakes FIRST Tech Challenge (FTC) Qualifying Tournament</b>	2013-2018
FTC is a robotics challenge for middle and high school students. Hosted at St. John Fisher College.	
<b>County Meet Coordinator, Monroe County Math League (MCML)</b>	2013-2018
MCML organizes competitions for area middle and high school math students throughout the school year. The County Meet is a day-long final event for the year. Hosted at St. John Fisher College.	
<b>Co-Organizer, Rochester R Users Group (RocRUG)</b>	2016-2017
Hosted RocRUG, a monthly meeting of Rochester, NY area data scientists who use the R statistical environment, at St. John Fisher College.	

### RECENT MEDIA APPEARANCES

<b>Guest, <i>Connections</i> (WXXI Radio)</b>	2020
Participated as an invited guest for a discussion on the connections between science education and public policy, April 29, 2020.	

## PROFESSIONAL MEMBERSHIPS

American Statistical Association (ASA)  
Complex Systems Society (CSS)  
Society for Chaos Theory in Psychology and the Life Sciences (SCTPLS)

## ADDITIONAL SKILLS

Statistical analysis software (expert in *R*, moderate skill in *SPSS* and *SAS*)  
Computer programming (fluent in *C++*; moderate skill in *Java*, *Swift*, and *Python*)  
Geographic Information Systems (*ArcGIS*, *QGIS*)  
Modeling software programming (*Vensim*, *NetLogo*)  
Digital and analog circuit design and construction  
Machine shop skills (mill, lathe, etc.)  
Piano Technology (tuning, regulation, repair)