Curriculum Vitae
NANCY C. WRINKLE

Department of Mathematics
Northeastern Illinois University, Chicago, IL
N-Wrinkle@neiu.edu

EDUCATION:

Ph.D. in Mathematics **2002**
Columbia University
Thesis: *The Markov theorem for transverse knots*
Advisor: Joan S. Birman

B.A. in Mathematics **1995**
Barnard College, Columbia University
Department Honors

EMPLOYMENT:

2009-	Associate Professor (NEIU)
2014-2016	Associate Dean (College of Graduate Studies and Research, NEIU)
2012-2014	Transition Facilitator (Acting Associate Dean) (College of Graduate Studies and Research, NEIU)
2009-2010	Special Assistant to the President (NEIU)
2004-2009	Assistant Professor (NEIU)
2003-2004	Instructor (NEIU)
2001-2003	NSF-VIGRE Postdoctoral Instructor (University of Georgia, Athens)
1997-2001	Instructor (Columbia University)
1996-1999	Teaching Assistant (Columbia University)

RESEARCH INTERESTS: Low-dimensional topology and geometric topology: the geometry of the curve complex, ropelength of knots, transverse/Legendrian knot theory, contact structures, open book decompositions.

PUBLICATIONS:

Distance and intersection number in the curve graph of a surface, with Joan S. Birman and Matt Morse, submitted.
Preprint: arxiv: math/2403391

The medial axis for thin disks, with Elizabeth Denne and John Sullivan, in preparation.

Ribbonlength for knot diagrams, with Elizabeth Denne and John Sullivan, in preparation

Retention and Student Success in STEM through a Mentoring Scholarship Program at an Urban HSI, S. Srinivas, P. H. Acioli, K. Voglesonger, J. Hibdon, N. Wrinkle, and D. Rutschman, 8th Annual Mentoring Conference Proceedings: *New Perspectives in Mentoring*, (N. Dominguez and Y. Gandert, editors). University of New Mexico, Albuquerque, 1154-1157 (2015).

Criticality for the Gehring link problem, with Jason Cantarella, Joseph H.G. Fu, Rob Kusner, and John M. Sullivan. *Geometry & Topology*, **10** (2006), pp 1-61.

Some ropelength critical clasps, with John M. Sullivan, *Physical and Numerical Models in Knot Theory and Their Application to the Life Sciences,* **(**J. Calvo, K. Millett, E. Rawdon, and A. Stasiak, editors). Series on Knots and Everything, World Scientific, Volume 36, (2005).

On transversally simple knots, with Joan S. Birman, *J. Diff. Geom.*, **55** (2000), pp 325-354.

Parametrizations of holonomic and Legendrian knots with Joan S. Birman, *Journal of Knot Theory and its Ramifications,* **9** No. 3 (2000), p. 293-309.

TEACHING EXPERIENCE:

Undergraduate:

- Quantitative Reasoning
- Intermediate Algebra
- Mathematics for Elementary Teachers
- Geometry for Middle School Teachers
- Algebra for Middle School Teachers
- Precalculus
- Calculus (I, II, and III)
- *Mathematica* labs for Calculus I and II
- Linear Algebra
- History of Mathematics
- Foundations of Geometry
- Discrete Mathematics
- Abstract Algebra I
- Introduction to Real Analysis
- Computing for Mathematicians

Graduate:

- Mathematical Structures for Elementary Teachers
- Probability and Statistics for Elementary Teachers
- Modern Geometry
- Reading course on Hatcher's Algebraic Topology

GRANTS & AWARDS:

General Travel Fund Award, NEIU, Spring 2019

Travel Grant, American Mathematical Society-Association for Women in Mathematics (AMS-AWM), Fall 2017

Summer Research Stipend, NEIU, Summer 2017

United States Department of Agriculture National Institute on Food and Agriculture Hispanic Serving Institutes (USDA-NIFA HSI) Education Grant, *CREAR: Collaboration and Retention through Agricultural and Environmental Research*, Project Director, 2010-2012, $290,000. (No-cost extension through 2014.)

Faculty Excellence Award for Service, 2012-2013

Hispanic Serving Institute (HSI) Initiative Grant, NEIU, *Expanding Peer-Led Team Learning Seminars at NEIU*, Spring 2009.

National Science Foundation Grant for Scholarships in Science, Technology, Engineering, and Mathematics (NSF S-STEM), co-Principal Investigator, 2008-2013, $598,000.

Dr. Ferydoon Firoozi Memorial Conference Travel Fund Award, NEIU, for travel to Banff International Research Station, May 2007.

Traveling Mentor Grant, AMS-AWM, Summer 2005.

Travel Grant, AMS-AWM, Spring 2005.

TALKS & WORKSHOPS:

November 2019, *Algorithms in complex dynamics and mapping class groups,* ICERM hot topic workshop, Brown University, Providence, RI (funded participant)

March 2019, *Studying distance in the curve graph of a surface,* AMS Spring Southeastern Sectional Meeting, Auburn, AL.

November 2018, *Distance and intersection number in the curve graph via polygonal decompositions*, Topology Seminar, University of Iowa.

November 2017, *Ribbonlength of Knot Diagrams,* NEIU Faculty Research Symposium.

September 2017, *Ribbonlength of Knot Diagrams,* AMS Eastern Sectional Meeting, Buffalo, NY, special session: Knots, 3-manifolds, and their invariants.

March 2016, *Ribbonlength of Knot Diagrams,* Columbia University Geometric Topology seminar, New York City.

November 2009, *Ribbons and Ropes in R^2 and R^3.* seminar, Smith College.

July 2009, *Ribbons and Ropes in R^2 and R^3.* The Unknot Conference, Denison University.

February 2009, *An Introduction to the Theory of Knots, Links, and Braids,* NEIU Mathematical Sciences Seminar.

April 2005, *Criticality for the Gehring ropelength problem*, Columbia University Geometric Topology seminar, New York City.

March 2005, *Introduction to contact structures* and *Introduction to knots and contact structures,* gave pre-conference workshops for graduate students and new researchers at Braids, Links, and Mapping Class Groups: a conference in honor of Joan Birman, Columbia University, New York City.

May 2004, *Team Teaching and Peer Learning in Mathematics Theory Courses: Experiments in Student-Centered Learning,* Excellence in Teaching Mathematics and Science: Research and Practice, 7th annual symposium series break-out session, University of Illinois (Chicago).

April 2004, *DNA and Knot Theory,* NEIU Mathematical Sciences Seminar.

November 2004, *On the Gehring ropelength problem*, University of Illinois (Chicago), Geometry, Topology, and Dynamics seminar.

October 2003, *An introduction to the theory of knots*, NEIU undergraduate math club.

April 2003, *The simple clasp,* University of Illinois, Champaign-Urbana, Topology Potpourri seminar.

March 2003, *Ropelength-critical clasp configurations*, Texas Tech University, Spring Topology and Dynamical Systems Conference.

Fall 2002, *An introduction to Oszvath-Szabo invariants of 3-manifolds,* University of Georgia, Topology Seminar, 5 week lecture series.

October 2002, *The ropelength of the simple clasp,* AMS Central sectional meeting, Madison, Wisconsin, special session: Optimal Geometry of Curves and Surfaces.

October 2001, *Arc presentations of knots and braids,* Emory University, Topology Seminar.

December 2000, *Transverse knot theory,* University of Pennsylvania, Topology Seminar

SERVICE & ADMINISTRATIVE EXPERIENCE:

FACULTY SERVICE:

Undergraduate Curriculum Committee Member, 2018-

University Assessment Team Member, 2011-

University Professionals of Illinois Contract Negotiating Team member, Spring 2014;

General Education Task Force Co-chair, 2010-2013

Planning board member, 2008-2011, Chicago Symposium for Excellence in Teaching Science and Mathematics: Research and Practice. http://www.math.uic.edu/chicagosymposia/

PLTL (Peer-Led Team-Learning) Program Director, 2007- 2011 http://www.pltl.org;

Advisor for the undergraduate mathematics major at NEIU, 2007-2009, 2019-present;

Master's Project Advisor for students in the MS program in Mathematics (Secondary Education track);

Examination committee member for the MS program in Mathematics (Applied and Secondary Education tracks);

Hiring committee member for searches for the Dean of the College of Arts and Sciences, Coordinator of the Student Center for Science Engagement, Assistant Professors of Mathematics;

EDGE (Enhancing Diversity in Graduate Education) faculty mentor at the University of Georgia 2001-2003: http://www.edgeforwomen.org

Georgia Topology Conference Organizer, 2003: http://www.math.uga.edu/~topology/2003 ;

Referee for *Journal of Knot Theory and its Ramifications, Algebraic & Geometric Topology*, *Geometry & Topology*, and *Pacific Journal of Mathematics.*

ASSOCIATE DEAN EXPERIENCE:

Handling graduate student issues

Developing and implementing processes for addressing graduate student issues

Developing, revising, guiding through governance, and implementing Graduate Grade Appeal Policy, Master's Thesis Policy, Graduate Academic Standing Policy, Graduate Leave of Absence Policy, Graduate Transfer Policy, Research Misconduct Policy;

Implementing electronic thesis submission for Master's theses;

Assisting development of the Master's in Public Health and MAT for Secondary Education, and assisting with significant revisions of the Master's in Business Administration;

Coordinating and leading reviews for awards and grant proposals: Dean's Research Assistantships, NEH Summer Stipends, Diversifying Faculty in Illinois (DFI) Fellowships, McNair Graduate Fellowships, Midwestern Association of Graduate Schools Distinguished Master's Thesis Awards (2016);

Coordinating and writing an institutional grant proposal;

Providing support and guidance to faculty seeking private funding for campus programs;

Rebuilding Office of Research and Sponsored Projects, including organizing and running staff searches (Administrative and Civil Service);

Working to improve fiscal management of grants, including specific processes and projects;

Assisting PI's on grants management.

SPECIAL ASSISTANT TO THE PRESIDENT EXPERIENCE:

Developing the progress report for the Higher Learning Commission's accreditation review, to present NEIU's progress on implementing a holistically integrated strategic plan;

Collaborating with the Provost, the Director of Institutional Research, the Dean of Academic Development, and the Coordinator of Math Development on a project to determine outcome predictors and consider strategies for success in NEIU's remedial mathematics program;

Developing and leading events programming for the Presidential Scholars program;

Coordinating with Finance and Administration leadership and staff from Information Technology to create and lead a University Policy Working Group out of the President's Office;

Organizing and planning with faculty and staff a two-day campus symposium on campus climate and free speech;

Participating in ongoing budget councils to make strategic recommendations on the University budget;

Attending annual legislative hearings of the State Higher Education Appropriations House and Senate committees in Springfield, IL.

PROFESSIONAL DEVELOPMENT (NON-MATH):

October 2015, *Illinois Association of Graduate Schools (IAGS) Fall 2015 Summit,* Loyola University

April 2015, *Midwest Association of Graduate Schools annual meeting,* St. Louis, MO

April 2015, *National Council of University Research Administrators annual meeting,* Chicago IL

March 2015, *Higher Learning Commission annual meeting,* Chicago, IL

November 2014, *Midwest Research and Graduate Administrators Forum,* Ball State University

July 2014, *HHS Office of Human Research Protections Quality Assessment Workshop: Focus on Informed Consent,* Madison, WI

December 2013, *Council of Graduate Schools 2013 Annual Meeting,* San Diego, CA

November 2013, *Midwest Research and Graduate Administrators Forum,* Ball State University

October 2013, *Illinois Association of Graduate Schools Fall 2013 Summit,* Northern Illinois University

October 2012, *Illinois Association of Graduate Schools Fall 2012 Summit,* Lewis University

March 2011, *AAC&U General Education and Assessment 3.0: Next Level Practices,* Chicago, IL

June 2010, *AAC&U Institute on General Education,* University of Vermont.

January 2010, *AAC&U Annual Meeting, THE WIT, THE WILL ... AND THE WALLET: Supporting Educational Innovation, Shaping Our Global Futures,* Washington, D.C.

PROFESSIONAL MEMBERSHIPS:

American Mathematics Society
Association for Women in Mathematics