

Danielle O'Donnol

PERSONAL INFORMATION:

Current Address: Department of Mathematics - MS 136
Rice University
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EDUCATION AND EMPLOYMENT:

- 8/2008- G.C. Evans Instructor,
Rice University, Houston, TX.
- 6/2008 Ph.D. Mathematics,
University of California, Los Angeles.
Thesis title: Intrinsically n -linked spatial graphs
Advisors: Erica Flapan and Robert Brown
- 12/2003 Masters in Mathematics,
University of California, Los Angeles.
- 12/2001 B.S. in Mathematics and a B.S. in Biochemistry,
Indiana University, Bloomington.

RESEARCH INTERESTS:

Spatial Graphs, Knot Theory, and Low Dimensional Topology.

PUBLICATIONS:

Research:

- *Intrinsically n -linked complete graphs*, G.C. Drummond-Cole and D. O'Donnol, Tokyo J. Math., **32** (2009), 113-125.
- *Intrinsically n -linked complete bipartite graphs*, D. O'Donnol, J. of Knot Theory Ramifications **17**(2) (2008), 133-139.
- *Mutations in DivL and CckA Rescue a divJ Null Mutant of Caulobacter crescentus by Reducing the Activity of CtrA*, Deanne L. Pierce, Danielle S. O'Donnol, Rebecca C. Allen, June W. Javens, Ellen M. Quardokus, and Yves V. Brun, J. Bacteriol., (2006) **188**: 2473-2482.
- *The conserved flaF gene has a critical role in coupling flagellin translation and assembly in Caulobacter crescentus*, Midge Llewellyn, Rachel J. Dutton, Jesse Easter, Danielle O'Donnol and James W. Gober, Molecular Microbiology, **57**:4, 1127-1142 (August 2005).

- *Regulation of stalk elongation by phosphate in Caulobacter crescentus*, Madeleine Gonin, Ellen M. Quardokus, Danielle O'Donnol, Janine Maddock, and Yves V. Brun, *J. Bacteriol.*, 182: (2) (January 2000).

Expository:

- *A survey of intrinsically n-linked complete graphs*, D. O'Donnol, Proceedings of 'Intelligence of Low Dimensional Topology'(2007) 41-44.
- *Intrinsically n-linking and complete bipartite graphs*, D. O'Donnol, Proceedings of the workshop 'Topology of Knots IX'(2007) 234-238.

AWARDS, HONORS:

- Dissertation Year Fellowship, University of California, Los Angeles, Graduate Division, 2007-2008 academic year
- Vertical integration of research and education in mathematical sciences (VI-GRE) Fellowship, University of California, Los Angeles Mathematics Department, 2002 (four years of support by TAship or fellowship)
- National Science Foundation, Graduate Fellowship Honorable Mention 2001

TEACHING EXPERIENCE:

Instructor, Rice University:

- 2009: Math 111, The Fundamental Theorem of Calculus. {Fall}
 Math 368, Topics in Combinatorics. {Fall}
 Rice University, Mathematical Institute for Young Women. {Summer}
 Math 112, Calculus and its Applications. {Spring}
- 2008: Math 102, Single Variable Calculus II. {Fall}
 Math 368, Topics in Combinatorics. {Fall}

Teaching Assistant, IAS/PCMI (Park City) Low Dimensional Topology, Undergraduate Summer Program.

- 2006: *An intuitive introduction to spaces, knots, and molecules.*

Teaching Assistant University of California, Los Angeles:

- 2007 Math 3B (Calculus for Life Sciences). {Spring}
 Math 225B (Graduate Algebraic Topology). {Winter}
- 2006 Math 113 (Combinatorics). {Fall}
- 2005 Math 115A (Linear Algebra). {Summer}
 Math 32A (Multi-variable Calculus). {Spring}
 Math 32B (Multi-variable Calculus). {Spring}
 Math 33A (Linear Algebra). {Winter}
 Math 32A (Multi-variable Calculus). {Winter}
- 2004 Math 115A (Linear Algebra). {Fall}
 Math 31B (Calculus). {Fall}
 Math 115A (Linear Algebra). {Spring}
 Math 32A (Multi-variable Calculus). {Spring}
 Math 120 (Differential Geometry). {Winter}
 Math 31B (Calculus). {Winter}
- 2003 Math 115A (Linear Algebra). {Fall}
 Math 31A (Calculus). {Fall}

SERVICE:

- Teaching Seminar committee, Rice University, Fall 2009.
- Chair, Colloquium committee, Rice University, Spring 2009.
- co-Presenter of Workshop: *All Tied up in Knots*, Sally Ride Science Festival at Rice University, October 18, 2008.
- Colloquium committee, Rice University, Fall 2008.
- Keynote speaker, Connecting Communities to UCLA, First annual Girls in Math and Science Day, May, 31, 2008.

RESEARCH TALKS:

- Intrinsically 3-linked graphs, Special Seminar, Waseda University (Tokyo), August 6, 2009
- Intrinsically n -linked spatial graphs, Conference on Knot Theory and its Applications to Physics and Biology, International Centre for Theoretical Physics, May 26, 2009
- Intrinsically n -linked spatial graphs, Rice University, Topology Seminar, September 22, 2008
- Intrinsically n -linked spatial graphs and minor minimality, AMS 2008 Spring Western Section Meeting, May 4, 2008
- Minor minimal intrinsically 3-linked spatial graphs, Knots in Washington XXVI, April 20, 2008
- Minor minimal intrinsically 3-linked spatial graphs, Graduate Student Topology Conference, University of Illinois Urbana-Champaign, March 29, 2008
- Intrinsically n -linked spatial graphs, AMS Session on Geometry and Topology, III, AMS MAA Joint Mathematics Meetings in San Diego, January 8, 2008
- Intrinsically n -linked spatial graphs, Knots in Washington XXV, George Washington University, December 7, 2007
- Intrinsically n -linked complete graphs, Topology Seminar, California, Institute of Technology, October 26, 2007
- Intrinsically n -linked complete graphs, Intelligence of Low Dimensional Topology, Osaka City University, August 29, 2007
- Intrinsically n -linked complete graphs, Claremont Topology Seminar, Claremont Colleges, May 1, 2007
- Intrinsically n -linked spatial graphs, Graduate Student Topology Conference, University of Chicago, April 21, 2007
- Intrinsically n -linked complete bipartite graphs, Topology of Knots IX, Nihon University (Tokyo), December 20, 2006
- Intrinsically n -linking and complete bipartite graphs, Topology Seminar, Waseda University (Tokyo), December 16, 2006
- Intrinsically n -linking and complete bipartite graphs, Seminar, Indiana University, April 3, 2006
- Intrinsically n -linked complete bipartite graphs, Graduate Student Topology Conference, Indiana University, April 2, 2006
- Survey of preliminary results on, intrinsically n -linking and complete bipartite graphs, Topology Seminar, University of California, Los Angeles, March 2, 2005

EXPOSITORY TALKS:

Working Seminar in Topology, Rice University:

- *Knotted hamiltonian cycles in spatial embeddings of complete graphs and Corrigendum* by Joel Foisy, January 27, 2009
- *Primitive spatial graphs and graph minors* by Makoto Ozawa and Yukihiro Tsutsumi, November 11, 2008
- Multiplicity of a space over another space, (on work by Kouki Taniyama), Claremont Topology Seminar, Claremont Colleges, October 30, 2007

Participating Seminar in Topology, University of California, Los Angeles:

- Diagrams, section 4 of *A categorification of the Jones polynomial* by Mikhail Khovanov (2 talks) {Winter 2008}
- Multiplicity of a space over another space, (on work by Kouki Taniyama) {Fall 2007}
- Knot projections, (*On a partial ordering of knots* by Taniyama) {Fall 2006}
- More on intrinsically knotted graphs, (The relationship between linking in D_4 and a_2 of the Hamiltonian cycles) {Winter 2006}
- A survey of the history of spatial graphs (Advancement to Candidacy Presentation) {Fall 2005}
- A relationship between the Jones polynomial and the Tutte polynomial {Spring 2005}
- Intrinsic knotting of complete graphs, {Winter 2005}
- Intrinsic linking of complete graphs, (2 talks) {Fall 2005}
- The Jones polynomial, a knot invariant, (3 talks) {Spring 2004}
- Chirality and knots, (*Rigid and non-rigid achirality* by Flapan) {Winter 2004}

CONFERENCES AND WORKSHOPS ATTENDED:

- Advanced School and Conference on Knot Theory and its Applications to Physics and Biology, International Centre for Theoretical Physics, May 11-29, 2009
- Knots in Washington XXVII (3rd Japan-USA Workshop in Knot Theory), George Washington University, January 9-11, 2009
- Women in Mathematics Workshop, Knots, surfaces, the curve complex, foliations, and all that..., IAS, May 12-23, 2008
- AMS 2008 Spring Western Section Meeting, Claremont McKenna College, May 4, 2008
- Knots in Washington XXVI, George Washington University, April 18-20, 2008
- Graduate Student Topology Conference, University of Illinois Urbana-Champaign, March 29-30, 2008
- AMS and MAA Joint Mathematics Meetings in San Diego, January 6-9, 2008
- Knots in Washington XXV, George Washington University, December 7-9, 2007
- Intelligence of Low dimensional Topology, Osaka City University, August 29 to September 1, 2007
- KOOK, Graduate Student Workshop on Mathematics, Osaka City University, August 27-28, 2007
- Graduate Student Topology Conference, University of Chicago, April 21-22, 2007
- Topology of Knots IX, Nihon University (Tokyo), December, 2006

- Low Dimensional Topology, Graduate Summer School, Institute for Advanced Study / Park City Mathematics Institute, June 25-July 15, 2006
- Graduate Student Topology Conference, Indiana University, April 1-2, 2006
- 3-Manifolds and Knot Theory Conference (Gordonfest), University of Texas at Austin, May 23-25, 2005
- The N+2nd Southern California Topology Conference, California, Institute of Technology, April 30, 2005
- Knots in Vancouver, Workshop in Knot Theory and 3-manifolds, University of British Columbia, July 19-23, 2004
- Mathematical Sciences Research Institute-Pacific Institute for the Mathematical Sciences, Summer Graduate Programme: Knots and 3-Manifolds, University of British Columbia, July 7-20, 2004