

Department of Mathematics & CS
St. Mary's College of Maryland
18952 E. Fisher Rd.
St. Mary's City, MD 20686-3001
USA

Phone: 240.895.4369
cjdouglas@smcm.edu
<http://faculty.smcm.edu/cjdouglas>

Education

- Ph.D. in Mathematics, Rice University, *Perturbed, Genus-One Scherk Surfaces and Their Geometric Limits* (thesis title), May 2009.
- M.A. in Mathematics, Rice University, May 2007.
- B.A. in Mathematics and English, Summa Cum Laude, Southwestern University, May 2003.

Areas of Research Interest

- Minimal Surfaces, Differential Geometry, Teichmüller Theory, Complex Analysis.

Publications

- *Genus One Scherk Surfaces and Their Limits* (62 pages), Journal of Differential Geometry (to appear).
- *Block-Isoperimetric Problems*, with A. Jamieson (3 pages). Handbook of Open & Applied Problems in Mathematics (to appear).
- *Triply Periodic Costa Surfaces*, with A. Weyhaupt (in preparation).
- *Gaussian Lines and Circles*, with J. Kaminsky (in preparation).
- *Block Party: Where the Isoperimetric, Number Theoretic, and Extremely Average Come to Mingle*, with E. Daring, I. Guadarrama, S. Sprague, and C. Winterer (submitted)

Positions

- **Assistant Professor**, Saint Mary's College of Maryland, August 2009 - Present.
- **Visiting Researcher**, University of Granada, June 2009.
- **Graduate Student**, Rice University, 2003-2009. Dr. Mike Wolf, advisor.

Undergraduate Research Projects

- **Block Isoperimetric Problems** (St. Mary's college of Maryland), Summer 2012. Oversaw research done by four undergraduate students as part of an ESP-REU (continuation of work from two years ago).
- **Self-Similar Solutions to the Mean Curvature Flow** (St. Mary's College of Maryland), 2011-2012 Academic Year. Oversaw research done by three math majors at St. Mary's. Research involved open and classical questions concerning self-shrinking and self-expanding solutions to the mean curvature flow.
- **Minimal Surfaces with Density** (St. Mary's College of Maryland), 2010-2011 Academic Year. Oversaw research done by three math majors at St. Mary's. Research involved open questions in the differential geometry of manifolds with density. Presentations at the 2011 spring CURM conference in Provo, UT were made by all participants.
- **A Lego Isoperimetric Problem** (St. Mary's College of Maryland), Summer 2010. Oversaw research done by five St. Mary's undergraduates as part of an NREUP. Research involved a

discrete version of the classical isoperimetric problem.

- **Calculus of Variations and Energy Minimizing Vector Fields** (Rice University), Spring 2005-Fall 2006; Assisted undergraduates with research projects, presentations, and independent studies as part of Rice University's VIGRE program.

Teaching

Assistant Professor (St. Mary's College of Maryland)

- Abstract Algebra II, Spring 2011, Spring 2012.
- Abstract Algebra, Fall 2010, Fall 2011.
- Calculus II, Spring 2010, Spring 2011.
- Complex Analysis, Spring 2010, Spring 2012.
- Calculus, Fall 2009, Fall 2010.
- Multivariable Calculus, Fall 2009, Fall 2011.

Instructor (Rice University)

- Single Variable Calculus, Spring 2006;
- Multivariable Calculus, Summer 2009.
- Linear Algebra, Summer 2008.
- Linear Algebra, Summer 2007.
- Ordinary Differential Equations and Linear Algebra, Summer 2005.

Sole instructor, organized course schedule and syllabus, maintained course website, wrote and graded assignments and exams, kept regular office hours, and provided practice exams as well as additional study sessions.

Presentations

- *What do LEGOs and Math Have in Common?* (presented by Emmanuel Daring) The Ohio State University, July 28th, 2012 (Mentor; Invited Poster Presentation).
- *An Undergraduate Approach to Mean Curvature Flow* (presented by Joshua Kaminsky) Towson University, March 31st, 2012 (Mentor; Invited Talk).
- *Weighted geodesics and self-similar curve shortening.* George Washington University, March 17, 2012 (Invited Talk).
- *WILL PROVE FOR FOOD: Career Opportunities for Mathematics Majors.* SMCM, St. Mary's City, MD July 21st, 2011 and July, 2012 (Invited Talk).
- *Measuring the Power of Jerks.* (presented by Alan Jamieson) Florida Atlantic University, FL, March 7th, 2011.
- *What Is/Was/Will be a Minimal Surface?* BYU, Provo, UT March 23rd, 2010 (Invited Talk).
- *WiSH House Tea Talk.* SMCM, St. Mary's City, MD, Spring 2010 (Invited Talk).
- *Constructing and Obstructing Minimal Surfaces.* Johns Hopkins University, Baltimore, MD March 15th, 2010 (Invited Talk).
- *Perturbed, Genus-One Scherk Surfaces and Their Limits.* University of Granada, Granada, Spain June 10, 2009 (Invited Talk).
- *Perturbed, Genus-One Scherk Surfaces and Their Limits.* AMS Sectional Meeting, Urbana, IL, March 27-29, 2009 (Invited Talk).
- *Perturbed, Genus-One Scherk Surfaces and Their Limits, and Minimal Surfaces: Past, Present, and Future.* Research Seminar and Undergraduate Colloquium, Holy Cross University, Worcester, MA, November 11, 2008.

- *Perturbed, Genus-One Scherk Surfaces*. AMS Sectional Meeting, Indiana University, Bloomington, IN, April 6, 2008.
- *Doubly-Periodic Genus-One and Genus-Zero Minimal Surfaces*. Geometry and Analysis Seminar, Rice University, March 2008.
- *Minimal Surfaces, New and Old*. Southwestern University, Georgetown, TX, November, 2006.

Additional Talks and Service

- *LaTeX Workshop*. St. Mary's College of Maryland, July 2012. Instructed students in the use of typesetting software.
- *MAA Liason*. 2011-2012 Academic Year.
- *Natural Sciences and Mathematics Colloquium Committee Member*, St. Mary's College of Maryland. 2011-2012 Academic Year.
- *Undergraduate Research Consultant*. BYU, July 2010. Assisted REU students with their research topics pertaining to Minimal Surfaces.
- *Panel Member: Graduate School*. SMCM, September 2009, 2010. Offered undergraduates advice and answered their questions concerning applications for and enrollment in graduate programs.
- *A Crash Course in Measure and Integration Theory*. Rice University, June 2008. Introductory lecture given to VIGRE undergraduates conducting summer research.
- *Calculus II and Beyond*. Rice University, April 2006. Lecture given to undergraduates considering higher level math courses.
- *Soap Bubbles and Golden Bridges*. Rice University, March 2006. Lecture and demonstration given to visiting elementary school students.

Conferences Attended

- Fifth Triennial Ahlfors-Bers Conference, Rice University, Houston, TX, March 2011.
- Mathfest 2010. Pittsburgh, PA August 2010.
- CURM Spring Conference. BYU, Provo, UT, March 2010.
- FRG Workshop on Mean Curvature Flows and Related Topics. Johns Hopkins University, Baltimore, MD, March 2010.
- JMM 2010. San Francisco, CA, January 2010.
- Mathfest 2009. Portland, OR, August 2009.
- Arbeitsgemeinschaft mit aktuellem Thema: Minimal Surfaces. Mathematisches Forschungsinstitut Oberwolfach, Oberwolfach-Walke, Germany. October 4th - 9th, 2009.
- AMS Sectional Meeting. Indiana University, Bloomington, IN, April 2008.
- International Congress on Minimal and Constant Mean Curvature Surfaces. Buzios, Brazil, August 2007.
- Workshop on Teichmüller Theory. University of Michigan, Ann Arbor, MI, April 2007.
- Texas Geometry and Topology Conference. Rice University, Houston, TX, October 2006.
- Geometry Festival 2006. University of Pennsylvania, Philadelphia, PA, April 2006.
- Singularities in Analysis, Geometry, and Topology: A Conference Honoring the Retirements of F. Reese Harvey and John C. Polking. Rice University, Houston, TX, November 2005.
- AIM Conference on Moduli Spaces of Minimal Surfaces. Palo Alto, CA, June 2005.
- Ahlfors-Bers Colloquium. University of Michigan, Ann Arbor, MI, May 2005.

Fellowships and Honors

Faculty Development Grants, St. Mary's College of Maryland, Fall 2009, Spring 2010, Fall

2010.

Project NExT Feellowship, 2009-2010.

NSF VIGRE Fellowship, Vertical Integration of Research and Education in Mathematical Sciences, Rice University, 2005-2007.

Graduate Fellowship, Rice University, 2003-Present.

Summer Research Assistantship, Rice University, Summers 2003-2008.

Phi Beta Kappa Society Membership (Southwestern University Chapter), 2003 - Present.

Professional Organizations

American Mathematical Society, 2003-Present

Mathematical Association of America, 2003-Present