

# Curriculum Vitae: Edward Burkard

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Denison University  
Department of Mathematics  
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## Employment

Aug 2019 - Present	Visiting Assistant Professor Denison University
Sep 2016 - July 2019	Visiting Assistant Professor Randolph-Macon College
Aug 2012 - Jul 2016	Teaching Assistant University of Notre Dame
Jul 2010 - Aug 2010	Primary Instructor University of California Riverside
Sep 2009 - Jul 2011	Teaching Assistant University of California Riverside
Sep 2008 - Jun 2009	Supplemental Instructor University of California Riverside
Jan 2008 - Jun 2009	Reader (grading homework assignments for undergraduate courses) University of California Riverside

## Education

2011 - 2016	University of Notre Dame, Notre Dame, IN Ph.D. in Mathematics	<b>July 2016</b>
	M.S. in Mathematics,	<b>January 2013</b>
2007 - 2011	University of California, Riverside, CA M.S. in Mathematics,	<b>June 2010</b>
	B.S. in Mathematics with High Honors,	<b>June 2009</b>

## Research Area

Currently, my research focuses on symplectic geometry, in particular, studying the homotopy properties of symplectic embeddings of ellipsoids into an ellipsoid or ball in 4 dimensions.

## Research and Publications

E. Burkard, *On the Fundamental Group of Symplectic Embeddings of Ellipsoids*. Preprint. In preparation.

E. Burkard, *First Steps in Homotopy Results for Symplectic Embeddings of Ellipsoids*. PhD Thesis. July 2016.

**Awards**

Best Graduating Senior in Mathematics, 2008 - 2009, University of California Riverside.

Dean's Distinguished Fellowship Award, 2009 - 2011, University of California Riverside.

Dean's Fellowship, 2011-2016, University of Notre Dame.

Outstanding Graduate Student Teacher, University of Notre Dame.

**Service**

Undergraduate Research Poster Judge at 2020 Joint Math Meetings.

Advised a student's senior capstone project on visualizing arithmetic using stereographic projection, Fall 2018.

Advised a student's senior capstone project on the Heisenberg Uncertainty Principle, Fall 2017.

Assisted with Freshmen course registration, incoming class Fall 2017.

*President*, Mathematics Graduate Student Association at the University of Notre Dame, 2015-2016 School Year.

Judge for Elementary School Science Projects at the 2015 Northern Indiana Regional Science & Engineering Fair.

I gave introductory lectures during orientation week for graduate students at Notre Dame on Real Analysis (2012), Topology (2013 and 2014), and Complex Analysis (2015).

**Talks and Presentations**

May 28, 2009      *Introduction to Ringoids*  
Groupoid Seminar at University of California, Riverside, CA

Nov 25, 2009      *Tensors and Curvature*  
Topics in PDEs Seminar at University of California, Riverside, CA

Dec 3, 2009      *Wedderburn's Theorem for Ringoids*  
Groupoid Seminar at University of California, Riverside, CA

Jan 20, 2010      *Tensors and Curvature II*  
Topics in PDEs Seminar at University of California, Riverside, CA

Feb 10, 2010      *Tensors and Curvature III*  
Topics in PDEs Seminar at University of California, Riverside, CA

Feb 17, 2010      *Tensors and Curvature IV*  
Topics in PDEs Seminar at University of California, Riverside, CA

Apr 21, 2010      *Minkowski Space-Time*  
Topics in PDEs Seminar at University of California, Riverside, CA

Apr 28, 2010      *On the Homogeneous Laplace Equation*  
Topics in PDEs Seminar at University of California, Riverside, CA

May 23, 2011      *The DeRham Isomorphism*  
Algebraic Topology Class at University of California, Riverside, CA

- Dec 2, 2011      *Blueprints for a Building*  
Intermediate Topology Class at University of Notre Dame, Notre Dame, IN
- Mar 5, 2012      *Morse Inequalities via Supersymmetry*  
Baby Topology Seminar at University of Notre Dame, Notre Dame, IN
- Mar 19-23, 2012    *Introduction to Category Theory (3 part lecture)*  
Topics in Differential Geometry Class at University of Notre Dame, Notre Dame, IN
- Apr 22, 2013      *Pseudoholomorphic Curves and Applications*  
Basic Complex Analysis II Class at University of Notre Dame, Notre Dame, IN
- May 24, 2013      *An Elementary Proof of the Gauss-Bonnet Theorem*  
Undergraduate Math Club at University of California, Riverside, CA
- Nov 5, 2013      *From Classical Mechanics to Symplectic Geometry*  
Graduate Student Seminar at University of Notre Dame, Notre Dame, IN
- May 19, 2014      *A Primer on Pseudoholomorphic Curves*  
Graduate Student Seminar at University of California, Riverside, CA
- May 20, 2014      *From Classical Mechanics to Symplectic Geometry*  
Undergraduate Math Club at University of California, Riverside, CA
- Oct 6, 2014      *A Primer on Pseudoholomorphic Curves*  
Graduate Student Seminar at University of Notre Dame, Notre Dame, IN
- Oct 21, 2015      *An Elementary Proof of the Gauss-Bonnet Theorem*  
Math Club at University of North Georgia, Dahlonega, GA
- Jan 6, 2016      *Non-triviality of the Fundamental Group of Symplectic Embeddings of 2 Ellipsoids.*  
2016 Joint Mathematics Meetings, Seattle, WA [Abstract](#)
- Oct 7, 2016      *An Elementary Proof of the Gauss-Bonnet Theorem*  
Senior Seminar at Randolph-Macon College, Ashland, VA
- Sep 29, 2017      *From Classical Mechanics to Symplectic Geometry*  
Senior Seminar at Randolph-Macon College, Ashland, VA
- Apr 6, 2018      *From Classical Mechanics to Symplectic Geometry*  
Math Club at University of North Georgia, Dahlonega, GA
- Jan 19, 2019      *On the Fundamental Group of Symplectic Embeddings of 4-dimensional Ellipsoids.*  
2019 Joint Mathematics Meetings, Baltimore, MD [Abstract](#)

## Conferences and Workshops

### **Organizer**

I was an organizer of the 2013 Graduate Student Geometry and Topology Conference at the University of Notre Dame (see below).

### **Attended**

- Nov 22 - 23, 2008    Groupoidfest 2008  
University of California, Riverside, CA  
[Conference Webpage](#)

- Oct 9 - 11, 2009      AMS 2009 Fall Western Section Meeting  
University of California, Riverside, CA  
[Conference Webpage](#)
- May 9 - 13, 2012      2012 Georgia Topology Conference  
University of Georgia, Athens, GA  
[Conference Webpage](#)
- Dec 8 - 9, 2012      Workshop on High Dimensional Topology  
University of Notre Dame, Notre Dame, IN  
[Conference Webpage](#)
- Apr 6 - 7, 2013      Graduate Student Topology and Geometry Conference 2013  
University of Notre Dame, Notre Dame, IN  
[Conference Webpage](#)
- Jul 8 - 12, 2013      2013 Georgia Topology Conference  
University of Georgia, Athens, GA  
[Conference Webpage](#)
- Apr 5, 2014          2nd Annual Midwest Women in Mathematics Symposium  
University of Notre Dame, Notre Dame, IN  
[Conference Webpage](#)
- Apr 26 - 27, 2014    Great Lakes Geometry 2014  
University of Notre Dame, Notre Dame, IN  
[Conference Webpage](#)
- Jun 9 - 13, 2014      Thematic Program on Nonlinear PDEs in Geometry and Physics  
Graduate and Postdoc Summer School  
University of Notre Dame, Notre Dame, IN  
[Conference Webpage](#)
- Jun 16 - 20, 2014    Thematic Program on Nonlinear PDEs in Geometry and Physics  
University of Notre Dame, Notre Dame, IN  
[Conference Webpage](#)
- Jun 10 - 14, 2015    2015 Georgia Topology Conference  
University of Georgia, Athens, GA  
[Conference Webpage](#)
- Jan 6 - 9, 2016      2016 Joint Mathematics Meetings  
Washington State Convention Center, Seattle, WA  
[Conference Webpage](#)
- Sep 17 - 18, 2016    Generalized Geometry Workshop  
Swarthmore College, Swarthmore, PA  
[Conference Webpage](#)
- Jan 4 - 5, 2017      2017 Joint Mathematics Meetings  
Hyatt Regency Atlanta and Marriott Atlanta Marquis, Atlanta, GA  
[Conference Webpage](#)
- Apr 28 - 29, 2017    Conference on Sangaku and Wasan at Randolph-Macon  
Randolph-Macon College, Ashland, VA  
[Conference Webpage](#)

May 22 - Jun 2, 2017 2017 Georgia International Topology Conference  
 University of Georgia, Athens, GA  
[Conference Webpage](#)

Jan 10 - 13, 2018 2018 Joint Mathematics Meetings  
 San Diego Convention Center, San Diego, CA  
[Conference Webpage](#)

Jan 16 - 19, 2019 2019 Joint Mathematics Meetings  
 Baltimore Convention Center, Baltimore, MD  
[Conference Webpage](#)

Jan 15 - 18, 2020 2020 Joint Mathematics Meetings  
 Colorado Convention Center, Denver, CO  
[Conference Webpage](#)

### **Professional Memberships**

American Mathematical Society (AMS), member since 2011

### **Certificates**

*Teaching Well Using Technology*, Kaneb Center for Teaching and Learning, University of Notre Dame, Aug 2014.

*Striving for Excellence in College and University Teaching*, Kaneb Center for Teaching and Learning, University of Notre Dame, Oct 2014.

### **Teaching Experience**

Denison University, Granville, OH (Semester System)

Fall 2019: Single Variable Calculus  
 Essentials of Calculus

Spring 2020: Multi-variable Calculus  
 Single Variable Calculus

Fall 2020: Multi-variable Calculus  
 Essentials of Calculus

Spring 2021: Single Variable Calculus  
 Essentials of Calculus

Randolph-Macon College, Ashland, VA (Semester System with a January Term)

Fall 2016: Discrete Mathematics  
 Finite Mathematics

January 2017: Finite Mathematics

Spring 2017: Differential Equations  
 Finite Mathematics

Fall 2017: Multivariable Calculus  
 Calculus with *Mathematica* I  
 Mathematica Modeling

Spring 2018: Differential Geometry  
 Multivariable Calculus  
 Calculus with *Mathematica* II

Fall 2018: Discrete Mathematics  
 Finite Mathematics

January 2019: Finite Mathematics

Spring 2019: Calculus with *Mathematica* II  
 Finite Mathematics

University of Notre Dame, Notre Dame, IN (Semester System)

### **Primary Instructor**

Fall 2013: Multivariable Calculus

Summer 2014: Multivariable Calculus

Spring 2015: Calculus of a Single Variable II

Spring 2016: Honors Mathematics II

Summer 2016: Multivariable Calculus

### **Undergraduate Reading Group Instructor**

Fall 2011: Projective Geometry

### **Teaching Assistant**

Fall 2012: Multivariable Calculus

Spring 2013: Multivariable Calculus (Head TA)

Fall 2014: Multivariable Calculus (Head TA)

Fall 2015: Multivariable Calculus (Head TA)

(The Head TA assists the course instructors and the course chair with any organizational matters and keeps the other course TAs up to date with the course as well as assisting new TAs of the course.)

University of California, Riverside, CA (Quarter System)

### **Primary Instructor**

Summer 2010: Ordinary Differential Equations

### **Teaching Assistant**

Fall 2009: Introduction to College Mathematics  
 First-Year Calculus III  
 Introduction to Set Theory

Winter 2010: First-Year Calculus II  
 Calculus of Several Variables II  
 Introduction to Differential Geometry

Spring 2010: Introduction to College Mathematics for Science

Linear Algebra II  
Ordinary and Partial Differential Equations III

Fall 2010: Calculus of Several Variables I  
Introduction to Set Theory  
Advanced Calculus I

Winter 2011: Calculus of Several Variables I  
Calculus of Several Variables II  
Complex Variables I

Spring 2011: Calculus of Several Variables II  
Introduction to Topology II  
Ordinary and Partial Differential Equations III

Summer 2011: First-Year Calculus II