

# Benjamin J. Ellison

UW-Richland  
1200 Highway 14 West  
Richland Center, WI 53581-1399  
(608)647-6186 ext. 266  
<http://richland.uwc.edu/depts/math/ben.ellison/>

1004 Nicole Ct.  
Black Earth, WI 53515  
(724)372-3590  
[benjamin.ellison@uwc.edu](mailto:benjamin.ellison@uwc.edu)  
U.S. Citizen

## Education

---

### University of Wisconsin-Madison

Ph.D in Mathematics, Summer 2009  
*Boolean Indexed Models and Wheeler's Conjecture*  
Advisors: Wim Ruitenburg, Marquette University, honorary fellow at UW-Madison;  
Steffen Lempp, UW-Madison  
Minor: Philosophy

### Case Western Reserve University

B.S. in Mathematics, May 2002  
Minor: Religion  
Honors: Summa Cum Laude

## Employment History

---

- Assistant Professor, UW-Richland, Fall 2010-Present
- Associate Lecturer, UW-Richland, Fall 2009, Spring 2010
- Instructor, UW-Madison, Spring 2007, Spring 2008, Fall 2008, Spring 2009
- Teaching Assistant, UW-Madison, Fall 2003 through Fall 2005, Summer 2007, Fall 2007
- Tutorial Instructor, UW-Madison, Fall 2008, Spring 2009
- Supplemental Instructor, Case Western Reserve University, Spring 2001 through Spring 2002
- Proofreading/Editorial Work, Spring 2009, Winter 2010

## Employment Description

---

### • Assistant Professor/Associate Lecturer, UW-Richland

I am currently an assistant professor at UW-Richland, which describes itself as a “freshman-sophomore campus” in the UW system. The majority of students attend UW-Richland for the smaller class sizes and more affordable tuition and then transfer to one of the four-year UW campuses. I am solely responsible for designing and teaching three courses per semester, such as Calculus I and II, Elementary Statistics, Pre-Calculus, Mathematics for Elementary Teachers, Quantitative Reasoning, College Algebra, and Trigonometry. This includes writing the syllabi, designing lectures, assigning homework, writing and grading quizzes and exams, holding office hours, and determining final grades. During the Spring 2010 semester I held individual teaching sessions with a student who could not attend the normal Calculus lecture due to a scheduling conflict with another course; this enabled the student to stay current in the class. I have further engaged students by introducing select students to math research and by creating a campus-wide monthly math contest. Finally, I am serving the campus and department by working on committees, bringing speakers to campus, and have given a campus-wide talk.

- **Instructor, UW-Madison, Problem Solving in Algebra, Probability and Statistics (formerly Mathematical Models), Spring 2008, Fall 2008, Spring 2009**

I lectured classes of approximately twenty students, all majoring in or planning to major in elementary education or special education, on the topics of probability, algebra, and data analysis. I designed lectures, led group discussions, and created worksheets for small group work in order to cultivate a deeper understanding of the material. I was also responsible for writing and grading homework and exams, holding office hours, and assigning final grades.

- **Instructor, UW-Madison, Geometrical Inference and Reasoning, Spring 2007**

I lectured classes of approximately twenty students, all majoring in or planning to major in elementary education or special education, on the topics of geometry and measurement. I designed lectures and used worksheets and activities for small group discussions, including some activities of my own design. I was also responsible for writing and grading homework and exams, holding office hours, and assigning final grades.

- **Teaching Assistant Coordinator, UW-Madison, Fall 2007**

I trained new teaching assistants and supervised their teaching. This included advising them and observing their teaching.

- **Teaching Assistant, UW-Madison**

Calculus and Analytic Geometry (second semester), Spring 2004, Fall 2007

Calculus and Analytic Geometry (first semester), Fall 2003, Summer 2007

Discrete Mathematics, Spring 2005

Calculus – Functions of Several Variables, Fall 2005

Algebra and Trigonometry, Fall 2004

I led discussion sections reviewing topics from lecture. I also created and graded homework and quizzes, held office hours and review sessions, and assigned final grades.

- **Math Tutorial Program Tutor, UW-Madison, Fall 2008, Spring 2009**

I met with small groups of business calculus students twice a week to provide extra help. The students applied to the tutorial program and were only accepted if they were in danger of not passing the course. I discussed important concepts from the material and worked with them individually as they solved additional problems. Further, I held office hours to which students from algebra, trigonometry, and calculus came for help.

- **Supplemental Instructor, Case Western Reserve University, Spring 2001, Fall 2001, Spring 2002**

I attended the lectures of a calculus course and held office hours during which students in the course could get help. I also led review sessions to cover the material before exams. Finally, during the week of final exams, I took part in a large, day-long tutorial session, in which students from all calculus courses were able to get help as they prepared for their respective finals. I also led review sessions during this tutorial session.

- **Proofreading/Editorial Work, Spring 2009, Winter 2010**

I, along with a partner, updated the books *Elementary Mathematics for Teachers* and *Elementary Geometry for Teachers* by finding all references to material and problems in the U.S. Edition of *Primary Mathematics* and locating the corresponding material and problems in the Standards Edition of *Primary Mathematics*.

## Research Interests

---

Classical model theory; intuitionistic model theory; model complete theories; universal Horn theories; quantifier elimination; mathematical logic.

## Publications

---

- *A Theory of Boolean Products*, submitted.
- *Quantifier elimination for a class of intuitionistic theories*, with Jonathan Fleischmann, Dan McGinn, and Wim Ruitenburg, *Notre Dame Journal of Formal Logic*, 49 (2008), no. 3, 281–293.
- *Kripke submodels and universal sentences*, with Jonathan Fleischmann, Dan McGinn, and Wim Ruitenburg, *Mathematical Logic Quarterly* 53 (2007), no. 3, 311–320.

## Student Research

---

During the spring 2010 and spring 2011 semesters I worked with very strong students in conducting math research. I gave each student a difficult freshman level math problem, instructed her on how to do research on her own, and guided her toward a solution. The first problem introduced the student to mathematical induction which she then used to solve this problem. The second problem required the student to learn basic combinatorics and probability. In both cases the students successfully solved the problem.

## Course Development

---

### Problem Solving in Algebra, Probability, and Statistics

The mathematics department at UW-Madison has a series of three courses for teaching math to students majoring in or plan to major in elementary education or special education. The first two courses cover the topics and strategies involved in arithmetic and geometry, while the third course covers algebra, probability, and statistics. Although the first two courses traditionally have designated textbooks and supporting materials, until 2008 the third course had only used an unorganized assortment of suggested worksheets.

In the spring of 2008 I helped develop a course guide and course pack for Problem Solving in Algebra, Probability and Statistics (previously called Mathematical Models), the last of those three courses. I was employed by both the mathematics department and School of Education, and worked with two fellow mathematics graduate students and a mathematics education graduate student. This involved creating lesson plans, developing worksheets, and building a course pack from these materials. Further, we organized all this information and uploaded it to a departmental website for future use in the instruction of the course. I used this course pack when I taught the course in the the Fall 2008 and Spring 2009 semesters. In both semesters, I evaluated its effectiveness and made additions and corrections. In the Fall 2008 semester I held weekly meetings with the other instructor of the course to get her opinion on the course materials.

## Honors, Awards, and Nominations

---

UW-Madison Innovation in Teaching Award. I was awarded this campus-wide teaching assistant award in March 2009, along with my co-developers, for my work in creating the course pack for Problem Solving in Algebra, Probability and Statistics. The math department and the School of Education nominated us based on the creativity and innovation we brought to developing this course pack.

Superior ranking on teaching evaluations for Problem Solving in Algebra, Probability, and Statistics, Fall 2008, Spring 2009. It is very rare to get the highest ranking for courses in the teacher education sequence.

National Science Foundation VIGRE Fellowship, Fall 2002 through Summer 2003, Spring 2006 through Fall 2006.

Association of Symbolic Logic Student Travel Award, Spring 2004, Spring 2005, Spring 2009.

Travel Grant, UW-Madison Math Department, Spring 2005.

## **Undergraduate Research Experience**

---

REU Participant, Trinity University, Summer 2001. I worked with a partner on a research project in number theory. This research was conducted under the supervision of a faculty member at Trinity and involved familiarizing myself with the relevant literature, developing and proving results, and writing the results in professional format. Our results were presented at the 2002 Joint Mathematical Meetings.

## **Professional Presentations**

---

Bi-State Math Colloquium, Loras College, September 15, 2010

Brown Bag Seminar, UW-Richland, April 22, 2010

Association of Symbolic Logic North American Annual Meeting, University of Notre Dame, May 20, 2009

Graduate Student Conference in Logic, University of Illinois at Urbana-Champaign, April 18, 2009

Marquette University Mathematics Departmental Colloquium, February 27, 2009

Southern Wisconsin Logic Colloquium, UW-Madison, multiple occasions

Graduate Participation Seminar in Logic, UW-Madison, multiple occasions

## **Collegial Service**

---

Created and ran the UW-Richland Math Question of the Month, UW-Richland, Fall 2011-Present

Served on the Math Department Library Committee, UW Colleges, Fall 2011-Present

Served on the Curriculum and Diversity Committees, UW-Richland, Fall 2010-Present

Organized the Graduate Participation Seminar in Logic, UW-Madison, Fall 2006-Spring 2007

## **Conferences Attended**

---

MAA-Wisconsin Sectional Meeting, Spring 2011

Project NExT-Wisconsin 2010 Fall Workshop

Graduate Student Conference in Logic, Spring 2005, Spring 2006, Spring 2007, Spring 2009

Association of Symbolic Logic North American Meeting, Spring 2004, Spring 2005, Spring 2009

Joint Mathematical Meetings, Winter 2009

Midwest Model Theory Meeting, Fall 2008

AMS Sectional Meeting, Spring 2006

## **Professional Memberships**

---

Project NExT-Wisconsin

Mathematical Association of America

American Mathematics Society

Association of Symbolic Logic

## References

---

Wim Ruitenburg (research)  
Department of Mathematics, Statistics, and Computer Science  
Marquette University  
P.O. Box 1881  
Milwaukee, WI 53201  
414-288-5384/wimr@mscs.mu.edu

Steffen Lempp (research/teaching)  
Department of Mathematics  
University of Wisconsin-Madison  
480 Lincoln Drive  
Madison, WI 53706  
608-263-1975/lempp@math.wisc.edu

Bob Wilson (teaching)  
Department of Mathematics  
University of Wisconsin-Madison  
480 Lincoln Drive  
Madison, WI 53706  
608-263-5944/wilson@math.wisc.edu

Amanuel Teweldemedhin (teaching/professional conduct)  
UW-Richland  
1200 Highway 14 West  
Richland Center, WI 53581-1399  
608-647-6186 ext. 229/amanuel.teweldemedhi@uwc.edu