

Dr. Barry Minemyer

400 E. Second St., 236 Ben Franklin Hall
Bloomsburg, PA 17815
bminemyer@bloomu.edu
(570) 389-4103
facstaff.bloomu.edu/bminemyer/

Work Experience

Bloomsburg University Assistant Professor	Aug 2017 - present
The Ohio State University Ross Visiting Assistant Professor	Aug 2014 - Aug 2017
Alfred University Assistant Professor	Aug 2013 - Aug 2014
Binghamton University Graduate Teaching Assistant	Aug 2007 - Aug 2013

Education

Doctor of Philosophy, Mathematical Sciences State University of New York at Binghamton, Binghamton NY Thesis Advisor: Dr. Pedro Ontaneda Thesis Title: Isometric Embeddings of Polyhedra	Aug 2013
Master of Arts, Mathematical Sciences State University of New York at Binghamton, Binghamton NY	May 2009
Bachelor of Science, Mathematics with application in Finance Pennsylvania State University at Altoona, Altoona PA	May 2007

Grants, Honors, and Memberships

- 2016 AMS-Simons Travel Grant	July 2016 - July 2019
- 2014 Project NExT fellow (gold14 dot)	Aug 2014 - Aug 2015
- Research supported by NSF grant of F.T. Farrell and P. Ontaneda	Jan 2013 - Aug 2013
- Member of the American Mathematical Society	
- Member of Pi Mu Epsilon	
- Member of the National College Athlete Honor Society	

List of Publications

12. *Complex hyperbolic Gromov-Thurston manifolds*, in preparation.
11. *New examples of negatively curved four-dimensional Riemannian manifolds* (joint with J.F. Lafont, J. Meyer, and B. Tshishiku), in preparation.
10. *Warped product metrics on (complex) hyperbolic manifolds*, submitted.
9. *On the isometric embedding problem for length metric spaces*, accepted to J. Topol. Anal.
8. *Negatively curved codimension one distributions*, Topology Proc., **56** (2020), 111-124.
7. *Filling triangulated surfaces* (with R Kowalick and JF Lafont), Geom. Dedicata, **202** (2019), 373-386.
6. *Real hyperbolic hyperplane complements in the complex hyperbolic plane*, Adv. Math. **338** (2018), 1038-1076.
5. *Intrinsic geometry of a Euclidean simplex*. In N. Broaddus, M. Davis, J-F. Lafont, and I. J. Ortiz (Eds.) "Topological Methods in Group Theory" (London Mathematical Society Lecture Note Series **451** 135-143 (2018)). Cambridge: Cambridge University Press. ISBN: 9781108437622.
4. *Simplicial isometric embeddings of polyhedra*, Mosc. Math. J., **17** (2017) no. 1, 79-95.
3. *Approximating continuous maps by isometries*, New York J. Math., **22** (2016), 741-753.
2. *Isometric embeddings of pro-Euclidean spaces*, Anal. Geom. Metr. Spaces, **3** (2015), 317-324.
1. *Isometric embeddings of polyhedra into Euclidean space*, J. Topol. Anal., **7** (2015), no. 4, 677-692.
0. *Isometric embeddings of polyhedra*, Ph. D. Thesis, Binghamton University.

Research Talks

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| Juniata College Undergraduate Colloquium | Sept 2019 |
| - The geometry of n -dimensional triangles via edge lengths. | |
| 2019 STDC at the University of Alabama at Birmingham | Mar 2019 |
| - Warped product metrics on complex hyperbolic manifolds. | |
| 2019 JMM's in Baltimore | Jan 2019 |
| - Real hyperbolic hyperplane complements in the complex hyperbolic plane | |
| Temple University Geometry Seminar | Dec 2018 |

- Real hyperbolic hyperplane complements in the complex hyperbolic plane
- Conference of the Academy at Bloomsburg University** Aug 2018
 - Introduction to Differential Geometry
- AMS Sectional Meetings at The Ohio State University** Mar 2018
 - Real hyperbolic hyperplane complements in the complex hyperbolic plane
- Bloomsburg University MADS Seminar** Nov 2017
 - A Higher-Dimensional Analogue to Heron's Formula
- 2017 JMM's in Atlanta** Jan 2017
 - Approximating continuous maps by isometries
- Michigan State University Topology Seminar** Dec 2016
 - Real hyperbolic hyperplane complements in the complex hyperbolic plane
- Ohio State University Topology Seminar** Nov 2016
 - Real hyperbolic hyperplane complements in the complex hyperbolic plane
- University of Illinois at Urbana-Champaign Geometry Seminar** Nov 2016
 - The isometric embedding problem for length metric spaces.
- Wesleyan University Colloquium** Oct 2016
 - The isometric embedding problem for length metric spaces.
- Duquesne University Undergraduate Colloquium** Sept 2016
 - The geometry of n -dimensional triangles via edge lengths.
- Ohio State University (for the Ross Mathematics Program)** July 2016
 - The geometry of n -dimensional triangles via edge lengths.
- Binghamton University (sequence of three talks)** May 2016
 - The isometric embedding problem and Nash's C^1 solution.
 - The smooth Nash isometric embedding theorem.
 - The isometric embedding problem for length metric spaces.
- 2016 STDC at Baylor University** Mar 2016
 - On the isometric embedding problem for length metric spaces.
- University of Dayton Colloquium** Feb 2016
 - Synthetic geometry and the isometric embedding problem.
- Ohio State University Topology Seminar** Oct 2015
 - The isometric embedding problem: manifolds vs polyhedra, rigidity vs flexibility.
- The University of Pittsburgh Geometry and Topology Seminar** Oct 2015
 - The isometric embedding problem: manifolds vs polyhedra, rigidity vs flexibility.
- Fall 2015 MAA Ohio Section Meeting at Capital University** Oct 2015
 - Geometry of simplices using edge lengths.

2015 STDC at Bowling Green State University - Combinatorial systolic inequalities.	May 2015
Spring 2015 MAA Allegheny Mountain Section Meeting at W&J - Geometry of simplices using edge lengths.	Apr 2015
Penn State Altoona Topology Seminar - Combinatorial systolic inequalities.	Mar 2015
Penn State University Geometry Seminar - Combinatorial systolic inequalities.	Mar 2015
AMS Sectional Meeting at Michigan State University - Combinatorial systolic inequalities.	Mar 2015
Ohio State University Geometric Group Theory Seminar - The closed geodesic problem.	Nov 2014
University of Chicago Geometry and Topology Seminar - Isometric embeddings of polyhedra.	May 2014
Binghamton University Topology Seminar - Isometric embeddings of pro-Euclidean spaces.	Feb 2014
2014 JMM's in Baltimore - Simplicial isometric embeddings of indefinite metric polyhedra.	Jan 2014
Binghamton University Graduate Conference - Isometric embeddings of polyhedra.	Nov 2013
2013 Workshop in Geometric Topology at Calvin College - Isometric embeddings of polyhedra.	June 2013
Ohio State University Geometric Group Theory Seminar - Isometric embeddings of polyhedra.	Feb 2013
Penn State University Geometry Seminar - Isometric embeddings of polyhedra.	Dec 2012
Penn State Altoona Topology Seminar - Simplicial isometric embeddings of indefinite metric polyhedra.	Nov 2012
Binghamton University Graduate Conference - Simplicial isometric embeddings of indefinite metric polyhedra.	Nov 2012
Fall 2012 MAA Seaway Section Meeting at Elmira College - Simplicial isometric embeddings of indefinite metric polyhedra.	Oct 2012

Expository Talks

Binghamton University, for admission into candidacy	June 2011
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- The Nash isometric embedding theorems.

The Ohio State University Apr 2015

- Random groups and property (T) .

Bishop Carroll High School May 2014

- Mathematics after high school.

Alfred University Math Club Mar 2014

- Euler's equation.

Penn State Altoona Math Club Apr 2012

- Euler's equation.

Dominican College Math Club Mar 2012

- Euler's equation.

Binghamton University, for Toeholds in Topology

- Stalks and morphisms of sheaves. Mar 2012
- Morse theory and geodesic flow. Feb 2011
- Introduction to trees. Feb 2009
- Introduction to homology. Oct 2008

Teaching Experience

Instructor of Undergraduates Aug 2007 - present

Bloomsburg University

- Linear Algebra (Math 314) fall 2018
- Calculus III (Math 225) fall 2019
- Calculus II (Math 126) spg 2019
- Calculus I (Math 125) fall 2018
- Essentials of Calculus (Math 123) fall 2019, spg 2018
- College Algebra (Math 109) fall 2017 - fall 2019 (8 sections)
- Mathematical Thinking (Math 101) fall 2018, spg 2018, fall 2017

The Ohio State University

- Curves and Surfaces in \mathbb{R}^3 spg 2016
- Advanced Geometry fall 2016
- Seminar for future careers for math majors spg 2017, fall 2016
- Calculus II spg 2016, fall 2015
- Calculus I spg 2015, fall 2014

Alfred University

- Introduction to proof writing spg 2014
- Calculus III fall 2013
- Calculus II spg 2014
- General Education Mathematics fall 2013

Binghamton University

- Introduction to proof writing fall 2012
- Linear algebra spg 2011, fall 2010
- Differential equations sum 2012
- Calculus III sum 2011, sum 2010
- Calculus II spg 2010
- Calculus I fall 2009, spg 2009, fall 2008
- Business Calculus spg 2012, fall 2011
- Introductory statistics spg 2008, fall 2007
- Precalculus (through 'Educational Opportunity Program' (EOP)) sum 2009
- Introductory algebra (with 'Student Support Services' and EOP) sum 2010, sum 2008

Use of Technology within Pedagogy

Bloomsburg University win 2018

- Taught College Algebra (Math 109) online. I developed videos for lectures and example, integrated the videos into D2L, and developed the graded assignments in ALEKS.

The Ohio State University spg 2015, fall 2014

- Was the instructor for the "Flipped and Flexible" Calculus 1 during the spring 2015 semester. Ohio State's Flipped and Flexible Calculus 1 is essentially a flipped classroom model, where the students watch lecture videos online and participate in recitations in person. One major difference is that students can attend recitation online in extreme situations, so technology has also been incorporated into recitation classes in order to deal with this. Duties included all aspects of maintaining the infrastructure of the course.
- Was a recitation instructor for two sections of the Flipped and Flexible Calculus 1 during both the spring 2015 and fall 2014 semester.

Binghamton University (with Student Support Services) sum 2010

- Taught one online introductory mathematics course during the summer of 2010. Developed own curriculum and created lecture videos which were uploaded onto blackboard via Youtube.

Mathematics Tutor Sept 2005 - May 2009

Binghamton University, Penn State University, and Penn State Altoona

- Was a tutor for the Educational Opportunity Program at Binghamton University, the Morgan Academic Support Center for Student Athletes at Penn State University, and the Learning Resources Center at Penn State Altoona. Was both an individual and group tutor.

Service to the Mathematical Community

Judge for the EPaDel Student Paper Competition July 2018

- Judged the papers submitted to the EPaDel student paper competition.

Co-organizing an AMS Special Session Mar 2018

- Co-organizing (with Samuel Lin and Benjamin Schmidt) the *Special Session on Symmetry in Differential Geometry* at the 2018 AMS Spring Central Sectional Meetings at The

Ohio State University.

Co-organizing the geometric topology session at the 2017 STDC Mar 2017
- Co-organized (with Jeffrey Meyer and Kevin Schreve) the geometric topology session at the 2017 Spring Topology and Dynamics Conference at New Jersey City University.

Moderating Contributed Paper Sessions at the JMM's Jan 2014 and Jan 2017
- Moderated talks in the *Convex and Discrete Geometry* Session at the 2017 JMM's.
- Moderated talks during the *Geometry and General Topology* Session at the 2014 JMM's.

Reviewer/Referee for journal articles Aug 2013 - present
- Reviewer for Mathscinet and referee for *Michigan Mathematics Journal* and *Symmetry*.

Moderator for talks at MAA Sectional Meetings Apr 2015 - Oct 2015
- moderated talks at the Ohio Section Meeting at Capital University.
- moderated talks at the Allegheny Mountain Section at W&J University.

Co-organizing panel session for the 2015 Mathfest Aug 2015
- Session titled *Sending Off Students: Advising Students for Post-Graduation*, and its purpose is to help young faculty members become better advisor's for their students. This is in affiliation with Project NExT.

Textbook Review Mar 2015
- Reviewed the textbook *A first course in linear algebra* for the University of Minnesota Open Textbook Library.

Ams.org User Experience Focus Group Jan 2013
- Participated in a focus group at the 2013 JMM's, whose purpose was to help the AMS format their website in a way which is more efficient for graduate students.

Service to the University

Faculty Professional Development Committee Aug 2019 - present

Library Advisory Committee Aug 2019 - present

Faculty Student Liaison Committee Aug 2019 - present

MADS Department Seminar Aug 2018 - present
- Organized the seminar for the MADS Department at Bloomsburg University.

ROTC Strategic Enrollment Scholarship Committee Nov 2017 - present
- Served on a committee to award scholarships to cadets in the ROTC program.

Mathematics Curriculum Committee Sept 2017 - present
- Served on the Mathematics Curriculum Committee at Bloomsburg University.

Math Adjunct Search and Screen Committee Sept 2017 - present
- Member of the Math Adjunct Search and Screen Committee at Bloomsburg University.

Calculus II Curriculum Committee Jan 2016 - May 2016
- Served on a committee during the spring 2016 semester at Ohio State which developed and implemented changes to the Calculus II course.

MooCulus Textbook Jan 2015 - Aug 2015
- Contributed to the creation of the new Mooculus textbook, which will be open source and available beginning the fall 2015 semester.

Calculus Handouts at Ohio State Jan 2015 - Dec 2015
- Converted both the Calculus I and Calculus II recitation handouts into latex, which spanned over 250 total pages. These handouts will be used in all Calculus I recitation sessions at Ohio State beginning the fall 2016 semester.

Piloting New Group Tutoring Program at Alfred University Jan 2014 - May 2014
- Recruited tutors, aided in training, and mentored them throughout the spring 2014 semester.

Binghamton University Graduate Conference May 2008 - Nov 2011
- Chair for the 2011 conference. Responsibility was to oversee everything involved with the conference and make sure that the conference continued to grow. Also responsible for the accommodations of one keynote speaker, Dr. Robert Ghrist, from the University of Pennsylvania.
- Member of the organizing committee for both the 2009 and 2010 conferences. Some accomplishments were improving the organization of the talks and making a template for the conference schedule. Responsibilities included handling speakers, taking care of technology for the speakers, and miscellaneous duties the weekend of the conference.

Binghamton University Math Diagnostic Exam Jan 2008 - May 2012
- Leader of a three person committee in charge of organizing and administering the Binghamton University Math Diagnostic Exam. Two major accomplishments were negotiating a pay raise for the graduate students who proctor the exams, and optimizing the exam scheduling process. Other duties included organizing dates and times for the exams, reserving rooms, negotiating the budget, and making the schedule for which graduate students proctor which exams.

Training

Attended the following research conferences

- 2019 STDC at the University of Alabama at Birmingham Mar 2019
- 2019 Joint Mathematics Meetings in Baltimore Jan 2019
- AMS Central Spring Sectional Meeting at Ohio State University Mar 2018
- 2017 STDC at New Jersey City University Mar 2017
- 2017 Joint Mathematics Meetings in Atlanta Jan 2017
- Reflections on Global Riemannian Geometry Aug 2016
- 2016 STDC at Baylor University Mar 2016
- Tech Topology Conference Dec 2015

- MAA Ohio Section Meeting at Capital University Oct 2015
- 2015 Mathfest in Washington D.C. Aug 2015
- 2015 STDC at Bowling Green State University May 2015
- 2015 Bloomington Geometry Workshop Apr 2015
- MAA Allegheny Mountain Section Meeting at W&J Apr 2015
- AMS Central Spring Sectional Meetings at Mich. St. Mar 2015
- 2015 Joint Mathematics Meetings in San Antonio Jan 2015
- MAA Ohio Section Meeting at Wittenberg University Nov 2014
- 2014 Mathfest in Portland Aug 2014
- What's Next? The mathematical legacy of Bill Thurston June 2014
- MAA Allegheny Mountain Section Meeting at Westminster College Mar 2014
- 2014 Joint Mathematics Meetings in Baltimore Jan 2014
- Binghamton University Graduate Conference in Algebra and Topology Nov 2013
- 2013 Workshop in Geometric Topology at Calvin College June 2013
- Graduate Student Topology & Geometry Conference at Notre Dame Apr 2013
- 2013 Joint Mathematics Meeting in San Diego Jan 2013
- Binghamton University Graduate Conference in Algebra and Topology Nov 2012
- MAA Seaway Section Meeting at Elmira College Oct 2012
- Cornell Topology Festival May 2012
- Graduate Student Topology & Geometry Conference at Indiana University Mar 2012
- Binghamton University Graduate Conference in Algebra and Topology Nov 2011
- Graduate Student Topology & Geometry Conference at Mich. St. Mar 2011
- Binghamton University Graduate Conference in Algebra and Topology Nov 2010
- Binghamton University Graduate Conference in Algebra and Topology Nov 2009
- Graduate Student Topology & Geometry Conference at Univ. Wisc. Mar 2009
- Binghamton University Graduate Conference in Algebra and Topology Nov 2008

Online Teaching Certificates

- Completed the Teaching Online Certification Course (TOCC) May 2019
- Completed the Quality Matters Certification Class (QM) May 2019

Attended the following Teaching Conferences or Seminars

- Ximera Workshop 2 July 2015
- Project Kaleidoscope Upstate NY Regional Fall Meeting Oct 2013
- One day seminar for training as a TA at Binghamton University Aug 2007
- One credit course for training as a tutor at Penn State Altoona Dec 2005

Miscellaneous Employment

EOP at Bloomsburg University Aug 2019 - present
 Helped develop the math component of the new Jump Start Program.

CollegeBoard ETS

Grader for the AP Calculus Exam June 2018 - present
 Member of the Standard Setting Panel June 2017

Cornell University

July 2017 - Aug 2017

Online co-instructor for two summer classes

SSS at Binghamton University

July 2010

Taught one summer class for Student Support Services at Binghamton University

EOP at Binghamton University

July 2008 and July 2009

Taught one class each summer for the Educational Opportunity Program at Binghamton

Miscellaneous

Four year member of the Penn State Altoona Men's Basketball Team

- Named the 2006-2007 Penn State Altoona male student athlete of the year.
- Three year co-captain.
- Four year member of the AMCC Academic All-Conference Team
- Four year member (and two year president) of the Penn State Altoona Student Athlete Advisory Committee

References

Dr. Pedro Ontaneda, Professor

Thesis Advisor

Department of Mathematical Sciences

Binghamton University, Binghamton, NY 13902

(607) 777-2411, pedro@math.binghamton.edu

Dr. Jean-François Lafont, Professor

Postdoctoral Mentor

Department of Mathematics

The Ohio State University, Columbus, OH 43210-1174

(614) 292-1849, lafont.1@osu.edu

Dr. Michael Davis, Professor

Postdoctoral Mentor

Department of Mathematics

The Ohio State University, Columbus, OH 43210-1174

(614) 292-4886, davis.12@osu.edu

Dr. Igor Belegradek, Professor

School of Mathematics

Georgia Institute of Technology, Atlanta, GA 30332-0160

(404) 385-0053, ib@math.gatech.edu

Dr. Benson Farb, Professor

Department of Mathematics

University of Chicago, Chicago, IL 60637-1514

(773) 702-3444, farb@math.uchicago.edu

Dr. Thomas Farrell, Distinguished Professor Emeritus

Department of Mathematical Sciences

Binghamton University, Binghamton, NY 13902

farrell@math.binghamton.edu

Dr. James Fowler, Assistant Professor

Department of Mathematics

The Ohio State University, Columbus, OH 43210-1174

(614) 292-4019, fowler.291@osu.edu