

AMS Standard Cover Sheet

Last Name: Gustafson Middle Name: _____

First Name: Paul

Complete mailing address:

Home Phone _____

2709 Rustling Oaks Dr

Bryan, TX 77802

e-mail address

paul.gustafson@gmail.com

Current Institutional Affiliation:

Skype Name _____

Graduate Student, May 2013-Present

Work Phone _____

Texas A&M University

Cell Phone _____

Mathematics

Highest Degree held or expected PhD

Granting Institution Texas A&M University

Date (optional) 05/2018 expected

Ph.D. Advisor: Eric Rowell

Thesis Title (optional) On the Property F Conjecture

Primary Interest (MSC# only) 18

Secondary Interests (optional) 16, 20

Give a very brief synopsis of your current research interests in the box below (e.g. finite group actions on four-manifolds).

Topological quantum computation, 3-manifold and link invariants, topological quantum field theories, fusion categories, mapping class groups, quantum groups, univalent dependent type theories
<http://www.math.tamu.edu/~pgustafs/>

Most recent position held, if any, post Ph.D.

University or Company _____

Position Title _____

Dates _____

Indicate the position for which you are applying and position posting code, if applicable

University of Southern California

Eligible for positions which requires U.S. citizenship or U.S. permanent residency: ☒ Yes ☐ No

If unsuccessful for this position, would you like to be considered for a temporary position?

☒ Yes ☐ No If yes, please check the appropriate boxes.

☒ Postdoctoral Position ☒ 2+ Year Position ☒ 1 Year Position

List the names and affiliations of individuals who will provide letters of recommendation if asked.

1. Eric Rowell, Texas A&M University, rowell@math.tamu.edu

2. Peter Howard, Texas A&M University, phoward@math.tamu.edu (teaching)

3. Richard Ng, Louisiana State University, rng@math.lsu.edu

4. Sarah Witherspoon, Texas A&M University, sjw@math.tamu.edu

5. Zhenghan Wang, University of California, Santa Barbara, zhenghwa@math.ucsb.edu

6. Peter Kuchment, Texas A&M University, kuchment@math.tamu.edu (teaching)

7. Thomas Kerler, The Ohio State University, kerler.2@osu.edu

Paul Gustafson

pgustafs@math.tamu.edu

<https://github.com/PaulGustafson>

(979)774-9184

Work Experience

| | |
|--|--------------------------|
| Texas A&M University | 2013 – Present |
| PhD Candidate, Department of Mathematics | |
| Knowledge Based Systems, Inc. | 2011 – 2012 |
| Programmer Analyst | Summer 2008, Summer 2010 |

Education

| | |
|-------------------------------------|---------------------|
| Texas A&M University | 2013 – Present |
| Doctor of Philosophy in Mathematics | May 2018 (Expected) |
| Advisor: Eric Rowell | |
| Texas A&M University | 2012–2013 |
| Bachelor of Science in Mathematics | 2013 |
| Princeton University | 2007 – 2011 |

Research Interests

Topological quantum computation, 3-manifold and link invariants, topological quantum field theories, fusion categories, mapping class groups, quantum groups, univalent dependent type theories

Publications and Preprints

P. Bruillard, P. Gustafson, J. Plavnik, E. C. Rowell, Categorical Dimension as a Quantum Statistic and Applications, arXiv:1710.10284, submitted.

P. Gustafson, Finiteness for Mapping Class Group Representations from Twisted Dijkgraaf-Witten Theory, arXiv:1610.06069, submitted.

R. Fernandes, B. Li, K. Vadakkeveedu, A. Verma, P. Gustafson, et al., Agent-based analysis of trustworthiness in wireless sensor networks, *Proc. SPIE* **8407**, Multisensor, Multisource Information Fusion: Architectures, Algorithms, and Applications 2012, 84070W (May 1, 2012); doi:10.1117/12.920781.

P. Gustafson, N. Savir, E. Spears, A Characterization of Refinable Rational Functions, *Am. J. Undergrad. Res.* **5** (3): 11-20 (Nov. 11, 2006).

Conference Presentations

AMS Special Session on Quantum Symmetries, The Ohio State University, Columbus, OH, March 2018.

AMS Special Session on Tensor Categories: Bridging Algebra, Topology, and Physics, U. C. Riverside, CA, November 2017.

AMS Special Session on Invariants of Links and 3-Manifolds, U. North Texas, Denton, TX, September 2017.

AMS Special Session on Fusion Categories and Applications, Indiana University, Bloomington, IN, April 2017.

AMS Special Session on Fusion Categories and Topological Phases of Matter, University of Utah, Salt Lake City, UT, April 2016.

Teaching Experience (Texas A&M University)

Mentor

REU on Mathematics of Topological Quantum Computation Summer 2017

Instructor of Record

Mathematical Concepts – Calculus (M131) Spring 2017

Teaching Assistant

Engineering Mathematics II (M152) Fall 2015, Spring 2018

Engineering Mathematics I (M151) Spring 2016, Fall 2017

Grader

Algebraic Topology I (M643) Fall 2016

Counselor

SMaRT High School Math Camp Summer 2009, Summer 2010

Code Repository

stringnet

<https://github.com/PaulGustafson/stringnet>

A Haskell library for calculating with quantum mapping class group representations

Workshop Participation

School and Workshop on Univalent Mathematics, University of Birmingham, UK, December 2017.

AMS Mathematical Research Community on Homotopy Type Theory, Snowbird, UT, June 2017.

Agda Implementors' Meeting XXV, Gothenburg, Sweden, May 2017.

Graduate Workshop on Topological Quantum Field Theory, Simons Center for Geometry and Physics, Stony Brook, NY, August 2015.

Oregon Programming Languages Summer School, University of Oregon, July 2013.

Programming Languages

Haskell, Agda, Coq, Python, C, Java, MATLAB, NetLogo