

# Roseanna Gossmann

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## EDUCATION

*PhD, Mathematics*  
Tulane University, New Orleans, Louisiana, May 2018  
Advisor: Lisa Fauci

*MS, Mathematics*  
Tulane University, New Orleans, Louisiana, December 2015

*BA, Mathematics*  
Minor: Biology, Master of Arts coursework: Education  
Mills College, Oakland, California, May 2012  
Summa Cum Laude

## RESEARCH INTERESTS

Scientific Computation, Mathematical Biology, Computational Biofluid Dynamics, Stokes Flow, Fluid-Elastic Structure Interactions, Deformation of Collapsible Tubes, Female Reproductive Health

## RESEARCH EXPERIENCE

- Research Assistant in development of numerical models for simplified human birth model as part of Research Training Group in Biofluids at Tulane University, funded by NSF DMS 1043626. August 2013 – August 2014, May 2015 – May 2018.
- Continued work on above research August 2019 – Present.

## MANAGEMENT EXPERIENCE

*Campus Director for Art of Problem Solving. Vienna, Virginia. March 2019 – Present.*

*Assistant Campus Director for Art of Problem Solving. Vienna, Virginia. June 2018 – March 2019.*

- In charge of all staff and on-the-ground administrative duties at after-school enrichment program for advanced math and language arts students with over 750 students in over 60 classes weekly.
- Manage team of two other full time staff members and more than twenty part time staff to ensure effective organization, teaching, and customer service.
- Oversee campus inventory, orders, and organization.
- Respond promptly and professionally to all customer and potential customer concerns and questions via email, phone, and in-person meetings.
- Delegate responsibility for administrative, outreach, and educational tasks to other staff members and offer necessary support for their success.
- Organize weekly meetings with full time staff and quarterly professional development sessions with all staff.

## TALKS AND COLLOQUIA

- Title: *The elastohydrodynamics of a simplified human birth model.* Joint Mathematics Meeting. Denver, Colorado. January 2020.
- Title: *A simplified human birth model: translation of a rigid cylinder through a passive elastic tube.* Enhancing Diversity in Graduate Education (EDGE). Oakland, California. June 2017.

- Title: *A simplified human birth model: translation of a rigid cylinder through a passive elastic tube.* Scientific Computing Around Louisiana (SCALA) Workshop. New Orleans, Louisiana. February 2017.
- Title: *A simplified human birth model: translation of a rigid cylinder through a passive elastic tube.* The 69th Annual Meeting of the APS Division of Fluid Dynamics. Portland, Oregon. November 2016.
- Title: *A simplified human birth model: translation of a rigid cylinder through a passive elastic tube.* International Symposium on Biomathematics and Ecology Education and Research (BEER). Charleston, South Carolina. October 2016.
- Title: *What do I do if there is no (analytical) solution???* An introduction to numerical differential equations. Given to students in Ordinary Differential Equations class at Mills College. Oakland, California. May 2016.
- Title: *A numerical investigation of a simplified human birth model.* Scientific Computing Around Louisiana (SCALA) Workshop. Baton Rouge, Louisiana. February 2016.
- Title: *A numerical investigation of a simplified human birth model.* The 68th Annual Meeting of the APS Division of Fluid Dynamics. Boston, Massachusetts. November 2015.
- Title: *A numerical investigation of a simplified human birth model.* Graduate student colloquium at Tulane University. New Orleans, Louisiana. October 2015.

## POSTER PRESENTATIONS

- Title: *A simplified human birth model.* ICMS (International Centre for Mathematical Sciences) Workshop: Growth, form and self-organisation in living systems. University of Dundee, Scotland. October 2017.
- Title: *A simplified human birth model: translation of a rigid cylinder through a passive elastic tube.* ICERM Semester Workshop: Making a Splash - Droplets, Jets and Other Singularities. The Institute for Computational and Experimental Research in Mathematics, Providence, Rhode Island. March 2017.
- Title: *A simplified human birth model: translation of a rigid cylinder through a passive elastic tube.* SIAM Conference on Computational Science and Engineering. Atlanta, Georgia. February 2017.
- Title: *A simplified human birth model: translation of a rigid cylinder through a passive elastic tube.* The Sixth Annual Winter Workshop on Neuromechanics and Dynamics of Locomotion. New Orleans, Louisiana. January 2017.
- Title: *A numerical investigation of a simplified human birth model.* Winner of best poster prize at Association for Women in Mathematics Poster Session at 2016 SIAM Annual Meeting. Boston, Massachusetts. July 2016.
- Title: *A numerical investigation of a simplified human birth model.* Scientific Computing Around Louisiana Workshop. Baton Rouge, Louisiana. February 2016.
- Title: *A numerical investigation of a simplified human birth model.* The Fifth Annual Winter Workshop on Neuromechanics and Dynamics of Locomotion. New Orleans, Louisiana. January 2016.

## WORKSHOPS ATTENDED

- *ICMS Workshop on Growth, Form and Self-organisation in Living Systems.* University of Dundee, Scotland. October 2017.
- *ICERM Semester Workshop: Making a Splash - Droplets, Jets and Other Singularities.* The Institute for Computational and Experimental Research in Mathematics, Providence, Rhode Island. March 2017.
- *The Sixth Annual Winter Workshop on Neuromechanics and Dynamics of Locomotion.* Tulane University, New Orleans, Louisiana. February 2017.

- *The Fifth Annual Winter Workshop on Neuromechanics and Dynamics of Locomotion*. Tulane University, New Orleans, Louisiana. January 2016.
- *MSRI Summer Graduate School: Incompressible Fluid Flows at High Reynolds Number*. Mathematical Sciences Research Institute, Berkeley, California. July – August 2015.

## TEACHING EXPERIENCE

### *Instructor*

- As Assistant Campus Director and then Campus Director of Art of Problem Solving Academy campus, taught math classes to advanced grade school students in second grade, third grade, fifth grade, Prealgebra, Algebra 1, Geometry, Algebra 2, and Middle School Contest Math. Vienna, Virginia. June 2018 – Present.

### *Instructor*

- *Introduction to Applied Math (Ordinary Differential Equations, Theory and Applications)* at Tulane University. New Orleans, Louisiana. Fall 2016.

### *Teaching Assistant*

- *Statistics for Business* at Tulane University. New Orleans, Louisiana. Fall 2014 – Spring 2015.
- *Calculus I and Calculus II* at Mills College. Oakland, California. Fall 2011 – Spring 2012.

### *Mentoring*

- *EDGE (Enhancing Diversity in Graduate Education)*: Served as a mentor for the *EDGE 2017* program at Mills College, for women about to begin PhD programs in mathematics. Ran problem sessions, assisted with homework, and helped with organizational details. Oakland, California. June 2017.

### *Secondary Education*

- *Substitute Teacher*: Taught high school math, biology, theatre, and physical education. Made and implemented lesson plans for high school pre-algebra, geometry, and algebra II courses. Willits Unified School District, Willits, California. May 2011 – June 2013.
- *Guest Teacher*: Created and implemented lichens and bryophytes lessons in high school biology classes, Willits Unified School District, Willits, California. 2008 – 2012.
- *Classroom Researcher*: Observed and studied pedagogical practice in middle school math and life science classrooms as part of graduate level education coursework at Mills College. Oakland, California. August 2011 – May 2012.

### *Math Circles*

- *Berkeley Math Circle*: Led math circle for fifth and sixth grade students for beginners level of Berkeley Math Circle in multiple subjects. Assisted other instructors at all other sessions. Berkeley, California. August 2011 – May 2013, January 2014, April 2015, April – May 2016, June 2017.
- *Olive Children Math Circle*: Ran math circle sessions for first and second grade students in weekly after school program. Fremont, California. January – May 2013.
- *Marin Math Circle*: Visiting instructor for middle school students in weekly math circle. San Rafael, California. Periodically August 2011 – May 2013.

### Grading

- University Coursework: Graded homework and exams for Real Analysis I, Real Analysis II, Mathematics for Teachers, Topics in Problem Solving, and Calculus at Mills College. Oakland, California. August 2011 – May 2013.
- Bay Area Math Olympiad: Graded BAMO exams. February 2012, February 2013.

### Education Masters Coursework

- Courses taken as part of study for Masters of Arts in Education program, Mills College, Oakland, California. August 2010 - May 2012.
- English Language Development and Content Instruction Methods, Teaching Reading and Writing in Secondary Schools, Social Foundations of Education, Curriculum and Instruction for Secondary Math and Science Teachers, Development and Learning in Adolescents, Teaching Methods for Integrated Secondary Science and Math Instruction.

## SERVICE

### Outreach

- *GiST (Girls in STEM at Tulane)*: ran math activity workshops and welcome tables for one day program for middle school girls interested in STEM fields, Tulane University. March 2016, March 2017, November 2017.
- *BATS (Boys At Tulane in STEM)*: ran math activity workshops and welcome tables for one day program for middle school boys interested in STEM fields, Tulane University. October 2016, February 2017.
- YMCA Literacy for Youth: volunteer math and science tutor for high school students at Fremont High School as part of youth empowerment program. Oakland, California. January 2011 – May 2011.

### Scholarly organizations

- *Mathematics Student Chapter Web Developer*: built website for for SIAM, AWM, and AMS Student Chapter events, Tulane University. September 2017. <http://math.tulane.edu/~graduatemath>
- *SIAM (Society for Industrial and Applied Mathematics) Student Chapter Treasurer*: handled funding and reimbursement requests and paperwork for graduate student colloquium, Tulane University. November 2015 – May 2018.
- *SIAM (Society for Industrial and Applied Mathematics) Student Chapter Secretary*: took meeting minutes and attendance, Tulane University. November 2015 – May 2017.
- *AWM (Association for Women in Mathematics) Student Chapter Secretary*: took meeting minutes for AWM and AMS (American Mathematical Society) student chapter meetings and kept up-to-date the web page for AWM, AMS, and SIAM student chapter events, Tulane University. May 2017 – May 2018.
- *GSSA (Graduate Studies Student Association)* representative for Mathematics Department at Tulane University. September 2015 - November 2017.

### Other

- *Tulane Math Department Tea Time*: organize and run weekly social hour for students, postdoctoral researchers, faculty, and staff of the Tulane University Math Department. August 2016 – May 2018.

## **AWARDS**

- *Three Minute Thesis Grand Prize Winner at Tulane University Three Minute Thesis Competition. Title: Math Babies. New Orleans, Louisiana. November 2017.*
- *AWM Workshop Best Poster Prize at Association for Women in Mathematics Poster Session at 2016 SIAM Annual Meeting. Title: A numerical investigation of a simplified human birth model. Boston, Massachusetts. July 2016.*

## **SKILLS**

*Computer skills: C++, Matlab, L<sup>A</sup>T<sub>E</sub>X, Gnuplot, R, Microsoft Office.*

*Language Knowledge: English (native), Spanish (heritage), Russian (elementary).*