

# Kyle M. Claassen – Curriculum Vitae

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CONTACT INFORMATION	Department of Mathematics Rose-Hulman Institute of Technology 5500 Wabash Avenue Terre Haute, IN 47803 USA	claassen@rose-hulman.edu <a href="https://www.rose-hulman.edu/~claassen/">https://www.rose-hulman.edu/~claassen/</a>
EMPLOYMENT AND EDUCATION	<b>Rose-Hulman Institute of Technology</b> , Terre Haute, IN Assistant Professor of Mathematics	<b>2018 to Present</b>
	<b>University of Kansas</b> , Lawrence, KS Ph.D, Mathematics Advisor: Dr. Mathew Johnson Dissertation: <i>Stability of Periodic Waves in Nonlocal Dispersive Equations</i>	<b>May 2018</b>
	M.A., Mathematics	<b>May 2014</b>
	<b>Bethel College</b> , North Newton, KS B.A., Mathematics w/ concentration in physics, minor in computer science	<b>May 2010</b>
RESEARCH	<b>Research Interests</b> I am interested in the existence and stability of nonlinear waves in nonlocal dispersive equations, in particular the Fractional Nonlinear Schrodinger Equation (fNLS). I also use numerical methods to compute bifurcations and spectra, with the goal of motivating and verifying theoretical results. <b>Publications</b> <ul style="list-style-type: none"><li>• K. M. Claassen and Mathew A. Johnson, <i>Nondegeneracy and Stability of Antiperiodic Bound States for Fractional Nonlinear Schrödinger Equations</i>, Journal of Differential Equations, 266: 5664-5712 (2019).</li><li>• K. M. Claassen, Mats Ehronström, Mathew A. Johnson, <i>Existence of a highest wave in a fully dispersive two-way shallow water model</i>, Archive for Rational Mechanics and Analysis, 231: 1635-1673 (2019).</li><li>• K. M. Claassen and Mathew A. Johnson, <i>Numerical Bifurcation and Spectral Stability of Wave-trains in Bidirectional Whitham Models</i>. Studies in Applied Mathematics, 141 no. 2: 205-246 (2018).</li></ul>	
TEACHING EXPERIENCE, PROFESSIONAL DEVELOPMENT, & SERVICE	<b>Rose-Hulman Institute of Technology</b> , Terre Haute, IN <i>Instructor:</i> <ul style="list-style-type: none"><li>• MA112 – Calculus II</li><li>• MA113 – Calculus III</li><li>• MA211 – Differential Equations</li><li>• MA336 – Boundary Value Problems</li></ul> <i>MAA Project NExT:</i> <ul style="list-style-type: none"><li>• Indiana MAA Project NExT Fellow, 2018</li><li>• Peach 2018 Inductee</li></ul> <i>Academic Advising:</i> Served as the academic advisor for a group of AY 2019-2020 freshman computer science students	<b>August 2018 to Present</b>

*Outreach:*

- Maintained the online registration process and record-keeping and assisted with logistics for the Fall 2019 Rose-Hulman High School Math Contest
- Implemented a high-school outreach activity for the 2020 Sonia Math Day for Girls

**University of Kansas, Lawrence, KS**

*Graduate Teaching Assistant*

**August 2012 to May 2018**

- Instructor of Record:
  - MATH 126 – Calculus II (Fall 2015)
  - MATH 121/197 – Calculus I Enhanced (Fall 2014)
  - MATH 115 – Applied Calculus I (Fall 2012, Spring 2013, Fall 2013)
- Recitation Instructor
  - MATH 126 – Calculus II (Spring 2016, Spring 2018)
  - MATH 125 – Calculus I (Fall 2017)
  - MATH 127 – Calculus III (Fall 2016, Spring 2017)
  - MATH 122 – Calculus II (Spring 2015)
  - MATH 121 – Calculus I (Spring 2014)

*Officer of Graduate Student Organization*

**August 2014 to July 2017**

- Served as Secretary (AY 2014-2015, 2015-2016) and President (AY 2016-2017)
- Assisted in organizing activities and student-led seminars for the University of Kansas AMS graduate student chapter.

*Calculus Assistant*

**Summer 2016**

- Created videos for the KU Calculus III video library over vector calculus topics such as divergence, curl, and Stokes' Theorem.

*Math Awareness Month Activity Leader*

**April 2015, 2016**

- Collaborated with other graduate students to plan and implement a Math Awareness Month activity for local elementary school students.

*Complex Variables Assistant*

**December 2015**

- Refined the models of student-designed Riemann surfaces for a complex variables final project and operated a 3D printer to create physical models of the surfaces.

*Analysis Qualifying Exam Seminar Leader*

**Fall 2013/Spring 2014**

- Organized and presented biweekly seminars to help prepare graduate students for the the Ph.D. qualifying exam in analysis.

**AWARDS & HONORS University of Kansas, Lawrence, KS**

- Received the Florence Black Graduate Teaching Award (Spring 2017)
- Granted a Joan Kirkham Opportunity Graduate Summer Scholarship (Spring 2017)
- Awarded a Paul F. Conrad Graduate Scholarship (Spring 2016)
- Received a Graduate Summer Research Scholarship (Summer 2014, 2015, 2016)

**PRESENTATIONS**

Upcoming: **SIAM Conference on Nonlinear Waves and Coherent Structures** **July 2020**

- Invited minisymposium talk: *Numerical bifurcation and spectral stability of wavetrains in bidirectional Whitham models*

**SIAM Conference on Analysis of Partial Differential Equations (PD19)** **December 2019**

- Invited minisymposium talk: *Numerical bifurcation and spectral stability of wavetrains in bidirectional Whitham models*

- Miami University Forty-Seventy Annual Mathematics Conference** **September 2019**
- Invited talk: *Numerical bifurcation and spectral stability of wavetrains in bidirectional Whitham models*
- Creighton Department of Mathematics Conference for Undergraduates** **October 2017**
- Presentation: *Numerically Approximating Periodic Waves in a Full-Dispersion Shallow Water Model*
- SIAM Conference on Applications of Dynamical Systems (Snowbird)** **May 2017**
- Minisymposium presentation: *Nondegeneracy of Antiperiodic Standing Waves for Fractional Nonlinear Schrödinger Equations*
- Rocky Mountain Conference on Partial Differential Equations** **May 2017**
- Presentation: *Nondegeneracy of Antiperiodic Standing Waves for Fractional Nonlinear Schrödinger Equations*
  - Poster: *Numerical Bifurcation and Spectral Stability of Wavetrains in Bidirectional Whitham Models*
- KUMUNU Conference on PDE, Dynamical Systems, and Applications** **April 2017**
- Poster: *Numerical Bifurcation and Spectral Stability of Wavetrains in Bidirectional Whitham Models*
- Annual Meeting of SIAM Central States Section** **October 2016**
- Contributed presentation: *Antiperiodic Ground State Theory for Fractional Schrödinger Operators*
- SIAM Conference on Nonlinear Waves and Coherent Structures (NWCS16)** **August 2016**
- Minisymposium presentation: *Nondegeneracy of Antiperiodic Standing Waves for Fractional Nonlinear Schrödinger Equations*
- KU Computational and Applied Mathematics Seminar**
- Presentation: *Existence and Orbital Stability of Spatially Periodic Bound States for the Fractional Nonlinear Schrödinger Equation* (April 2015)
  - Presentation: *Nondegeneracy of Antiperiodic Bound States for Fractional Nonlinear Schrödinger Equations* (April 2016)
- KUMU PDE, Dynamical Systems, and Applications Conference** **April 2015**
- Poster: *Existence and Orbital Stability of Spatially-Periodic Bound States for the Fractional NLS*
- KU Numerical PDE/Geometry/Topology Study Seminar** **Fall 2014**
- Presentation: *PDE Functional Framework*
- Bethel College, North Newton, KS** **Spring 2007, 2009**
- Bethel College URICA Symposium
- Wichita State University, Wichita, KS** **Spring 2007**
- KMAA Conference

OTHER  
PROFESSIONAL  
EXPERIENCE

- KU Office of Diversity in Science Training (ODST), Lawrence, KS**
- Software Developer* **June 2013 to September 2013**
- Analyzed program database in preparing to migrate to a new a system.
  - Continued work on web application to track students' accomplishments of program objectives.
- KeyCentrix, LLC, Wichita, KS**
- Software Developer* **May 2010 to February 2012**
- Developed and maintained pharmacy management software products using Microsoft C# .NET, Microsoft SQL Server, and Crystal Reports.
  - Implemented electronic prescription and purchase order interfaces.
  - Migrated data from legacy Oracle-based systems into MS-SQL Server.

*Software Developer Intern*

**June 2007 to August 2009**

- Interfaced legacy unix systems to modern web service technologies.
- Migrated large codebase from the CVS version control system to Subversion.

**SOFTWARE SKILLS**

*Computer Programming*

- Python (NumPy/SciPy/SymPy), C/C++, C# .NET, PHP, SQL, Maple, MATLAB, Mathematica

*Version Control*

- Subversion, Git, CVS

*Multimedia Content*

- GeoGebra, GIMP, Inkscape, Camtasia, Audacity