Skyler C. Simmons

Curriculum Vitae

Contact

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Academic Preparation

- Ph. D. Mathematics, Brigham Young University. August 2015. Dissertation: *Analysis of Multiple Collision-Based Periodic Orbits in Dimension Higher than One*, Advisor: Lennard Bakker
- M.S. Mathematics, Brigham Young University, December 2011. Thesis: *Topological Properties of Invariant Sets for Anosov Maps with Holes,* Advisor: Todd Fisher
- B.S. Mathematics, Brigham Young University, April 2009. Minors in Economics and Computer Science.

Employment History

- Assistant Professor, Utah Valley University (September 2018 – present)
- Visiting Assistant Professor, Southern Utah University (August 2016 – July 2018)
- Visiting Assistant Professor, Brigham Young University (September 2015-August 2016)

Courses Developed

- UVU Math 4250 – Introduction to Dynamical systems
  - Determined curriculum and textbook
  - Submitted documentation for entry into course catalog
  - Course began Spring 2020
- BYU Math 116 – Essentials of Calculus (Business School prerequisite course)
  - Co-Authored and edited textbook
  - Revised curriculum
  - Produced video presentations for Independent Study course
  - Coordinated course with instructors at satellite campus (BYU Salt Lake Center)
  - Advised subsequent course instructors and course coordinators
  - Course began Fall 2011

Courses Taught / Scheduled

At Utah Valley University

- Math 4250 – Intro to Dynamical Systems, Spring 2020 (as Math 490R – Topics in Math), Fall 2021
- Math 3250 – Intro to Advanced Calculus, Spring 2022
- Math 2280 – Ordinary Differential Equations, Summer 2020, Fall 2021, Spring 2022
- Math 2210 – Calculus III, Fall 2019 (included Honors 221H section), Spring 2021
- Math 1220 – Calculus II, Fall 2020
- Math 1210 – Calculus I, Fall 2019
- Math 1090 – Business Algebra, Spring 2019
- Math 1060 – Trigonometry, Summer 2019, Fall 2020, Summer 2021, Spring 2022
- Math 1055 – College Algebra with Prerequisites, Spring 2021
- Math 1050 – College Algebra, Fall 2018, Spring 2019, Spring 2020
- Math 100R – Math Leap, Spring 2020

At Southern Utah University

- Math 3990 – Undergraduate Research, Spring 2017
- Math 1210 – Calculus I, Spring 2017, Fall 2017
- Math 1060 – Trigonometry, Fall 2016
- Math 1050 – College Algebra, Spring 2017, Fall 2017, Spring 2018
- Math 1040 – Statistics, Spring 2018, Summer 2018
- Math 1010 – Intermediate Algebra, Fall 2016, Fall 2017

At Brigham Young University:

- Math 334 – Ordinary Differential Equations: Summer 2013
- Math 314 – Multi-variable Calculus: Winter 2013, Winter 2015
- Math 303 – Engineering Mathematics 2: Winter 2015
- Math 290 – Essentials of Mathematics: Fall 2015, Winter 2016
- Math 118 – Finite Mathematics: Summer 2014
- Math 116 – Essentials of Calculus: Fall 2011, Winter 2012, Spring 2012, Summer 2012
- Math 113 – Calculus II: Fall 2013, Spring 2011, Spring 2015
- Math 112 – Calculus I: Winter 2016
- Math 102 – Quantitative Reasoning: Spring 2010

Teaching Seminars/Programs Attended

- UVU Learning Circles: Mathematics for Human Flourishing, Spring 2021
- UVU Online Teaching Academy, Summer 2019
- UVU Learning Circles: Teaching the Large College Class, Spring 2019
- UVU All Aboard series, Fall 2018-Spring 2019

TA and Grader Assignments

- BYU Math 634 – Theory of Ordinary Differential Equations: Fall 2014
- BYU Math 487 – Introduction to Number Theory: Spring 2010
- BYU Math 411 – Numerical Methods II: Winter 2011
- BYU Math 355 – Graph Theory: Winter 2009
- BYU Math 341 – Theory of Analysis I: Winter 2014
- BYU Math 113 – Calculus II: Winter 2011
- BYU Math 112 – Calculus I: Fall 2014, Fall 2012, Fall 2010, Winter 2010, Fall 2009, Fall 2006

Refereed Journal Publications

- Stability of Broucke's Isosceles Orbit. Discrete and Continuous Dynamical Systems A, Vol. 41 (2021) No. 8
- L. Bakker and S. Simmons. A separating surface for Sitnikov-like *n+1*-body problems. Journal of Differential Equations, Vol. 258 (2015) No. 9.
- L. Bakker and S. Simmons. Stability of the rhomboidal symmetric-mass orbit. Discrete and Continuous Dynamical Systems A, Vol. 35 (2015) No. 1.
- T. Fisher and S. Simmons. Topological properties of invariant sets for two-dimensional hyperbolic toral automorphisms. Dynamical Systems, Vol. 30 (2015) No. 1.
- T. Ouyang, S. Simmons, and D. Yan. Periodic solutions with singularities in two dimensions in the *n*-body problem, Rocky Mountain Journal of Mathematics, Vol. 42 (2012) No. 5.
- L. Bakker, S. Mancuso, and S. Simmons. Linear stability analysis of symmetric periodic simultaneous binary collision orbits in the planar pairwise symmetric four-body problem, Journal of Mathematical Analysis and Applications, Vol 392 (2012) No. 2.
- L. Bakker, T. Ouyang, S. Simmons, and D. Yan. Existence and stability of symmetric periodic simultaneous binary collision orbits in the planar pairwise symmetric four-body problem. Celestial Mechanics and Dynamical Astronomy, Vol. 110 (2011) No. 3.
- L. Bakker, T. Ouyang, G. Roberts, S. Simmons, and D. Yan. Linear stability for some symmetric periodic simultaneous binary collision orbits in the four-body problem. Celestial Mechanics and Dynamical Astronomy, Vol. 108 (2010) No. 2.

Pre-Publication Work

- The Eight-Body Three-Dimensional Collision-Based Periodic Orbit. Submitted.
- Periodic Orbits in the Co-Sitnikov Problem. (Tentative title.) Nearing completion. (Research done with undergraduate student Daniel Havens)

Presentations Given

- Spring Topology and Dynamical Systems Conference, Virtual (hosted by Murray State), May 2021
- MAA Intermountain Sectional Meeting, Virtual, March 2021
- UVU Math Department Colloquium, Jan 2021
- AIMS Conference on Dynamical Systems, Differential Equations, and Applications, Atlanta GA, June 2020 (Invited talk, cancelled due to COVID-19 pandemic)
- UVU Math Department Colloquium, March 2020
- UVU Physics Club / Department, October 2019
- UVU Math Department Colloquium, April 2019
- UVU Math Department Colloquium, October 2018
- SUU Festival of Excellence, April 2018
- SIAM Dynamical Systems Conference, Snowbird UT, May 2017 (Invited talk)
- SUU College of Science and Engineering Research Symposium, November 2016
- AMS / MAA Joint Meetings, Seattle WA, January 2016
- Rocky Mountain Dynamical Systems Conference, Provo UT, June 2015 (Invited talk)
- AMS / MAA Joint Meetings, San Antonio TX, January 2015 (Co-organized)
- MAA Intermountain Section Meeting, Orem UT, March 2014
- Brigham Young University Graduate Expo, March 2014
- MAA Intermountain Section Meeting, Salt Lake City UT, March 2012
- AMS / MAA Joint Meetings, Boston MA, January 2012 (Invited talk)
- AMS Fall Sectional Meeting, Salt Lake City UT, October 2011 (Invited talk)
- AMS / MAA Joint Meetings, Washington DC, January 2009
- BYU Spring Research Conference, 2007 – 2014 (annually)

Professional Service

- UVU Faculty Senate Policy Liaison, July 2021-Present
- UVU Minors on Campus Policy Drafting Committee, August 2020-Present
- UVU Faculty Senator, April 2020-Present
- UVU College Algebra Coordinator, September 2018-Present
- Reviewer for Mathematical Reviews, April 2015-Present
- BYU Math 116/118 course coordinator (September 2015-August 2016)
- Referee for *Journal of Inequalities and Applications*, 2015
- Co-organized AMS Special Session on Current Trends in Classical Dynamical Systems, AMS/MAA Joint Meetings, San Antonio TX, January 2015
- Taught BYU Analysis Qualifier Review: Summer 2015, Summer 2014, Summer 2013
- Taught GRE Prep Seminar, BYU REU, Summer 2011

Community Service

- UVU Math Week Math Challenge Coordinator, March 2021
- UVU Math Department Pi vs Tau debate moderator, October 2020
- BYU Math Circle presenter, Feb 2022, March 2020 (Cancelled due to COVID-19), October 2019, November 2018, March 2014
- UVU Student Showcase Judge, October 2019
- Mount Jordan Middle School Career Fair Presenter, April 2019
- FIRST Lego League volunteer judge, Southern Utah University, January 2018
- BYU Math Circle organizer, September 2014 – April 2015
- "Mathematics Research" guest presenter – Roy Jr. High, February 2014

- Volunteer Math/Science Olympiad Coach, Washington Terrace Elementary, February-May 2012
- Mathematics Tutor, Provo High School, January-April 2006

Honors, Awards, Certifications

- UVU Online Teaching Certification, Summer 2019
- BYU Math Department Outstanding Teaching Award (2012 and 2015 – two awards given each year)
- Selected as one of two graduate students to represent BYU Mathematics Department in MAA study on Successful Programs in College Calculus (2012)
- BYU Teaching Excellence Fellowship (2012)
- BYU Spring/Summer term Scholarship Recipient (2007 and 2008)
- BYU Heritage Scholarship recipient (8 semesters, full tuition)

Miscellanea

Computer Skills

- LaTeX, Java, C++, MATLAB
- Windows and Linux operating systems
- MyLab Math, Moodle, Blackboard, and Canvas course delivery systems

Languages

- Mandarin Chinese (Spoken)
- Spanish