Curriculum Vitae

Alan R. Parry

CONTACT INFORMATION

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EDUCATION

PhD	Mathematics	Duke University Advisor: Hubert L. Bray	2013
MA	Mathematics	Duke University	2008
MS	Mathematics	Utah State University Advisor: Ian M. Anderson	2007
BS	Mathematics	Utah State University Magna Cum Laude	2006

PROFESSIONAL APPOINTMENTS/EMPLOYMENT

Utah Valley University - Mathematics	Associate Chair	2018 - present
Utah Valley University - Mathematics	Assistant Professor	2016 - present
University of Connecticut - Mathematics	Visiting Assistant Professor	2013 - 2016

RESEARCH INTERESTS

Differential Geometry, General Relativity, Mathematical Physics, Mathematics Education

PUBLICATIONS

Refereed Journal Articles

2018 Alan R. Parry, *A Useful Observation about the Unit Circle*, Utah Mathematics Teacher, **11**, 31-33, Fall/Winter 2018-2019, available at `http://www.utahctm.org/uploads/2/6/4/7/26475011/uctm_journal.pdf`.

Alan R. Parry, *Graph Transformations by Variable Replacement*, Utah Mathematics Teacher, **11**, 34-48, Fall/Winter 2018-2019, available at `http://www.utahctm.org/uploads/2/6/4/7/26475011/uctm_journal.pdf`.

2015 Hubert L. Bray and Alan R. Parry, *Modeling Wave Dark Matter in Dwarf Spheroidal Galaxies*, Journal of Physics: Conference Series, **615**, no. 1, 012001, (2015), available at `http://dx.doi.org/10.1088/1742-6596/615/1/012001`.

2014 Alan R. Parry, *A Survey of Spherically Symmetric Spacetimes*, Analysis and Mathematical Physics, **4**, no. 4, 333-375, (2014), available at `http://dx.doi.org/10.1007/s13324-014-0085-x`.

Submitted Manuscripts and Preprints

2020 Alan R. Parry, *Parametrizations of the Poisson-Schrödinger Equations*, (2015, updated 2020), submitted, preprint available at `http://arxiv.org/abs/1510.04644`.

Alan R. Parry, *Normal Vectors and Space Curves*, (2020), submitted.

Alan R. Parry and Bob Palais, *Given Any Two Statements, One of Them Implies the Other*, (2020), submitted

Theses

2013 Alan R. Parry, *Wave Dark Matter and Dwarf Spheroidal Galaxies*, PhD Thesis, Duke University, Durham, NC, (2013), available at `http://arxiv.org/abs/1311.6087`.

2007 Alan R. Parry, *A Classification of Real Indecomposable Solvable Lie Algebras of Small Dimension with Codimension One Nilradicals*, Master's Thesis, Utah State University, Logan, UT, (2007), available at `http://arxiv.org/abs/1311.6069`.

ArXiv

2012 Alan R. Parry, *Spherically Symmetric Static States of Wave Dark Matter*, (2012, updated 2015), available at `http://arxiv.org/abs/1212.6426`.

Undergraduate Research Papers in Preparation

Franklin Maxfield and Alan R. Parry, *Viviani's n Vertices*, in preparation

Daniel Havens and Alan R. Parry, *TBD*, in preparation

AWARDS, HONORS, DISTINCTIONS

2019 Faculty Excellence Award
Utah Valley University, April 2019

2018 Fellow of the Higher Education Academy
Higher Education Academy, June 2018

2010 L.P. and Barbara Smith Award for Teaching Excellence
Duke University Mathematics Department, September 2010

2009 L.P. and Barbara Smith Award for Beginning Teachers
Duke University Mathematics Department, February 2009

2007 Math and Stat Graduate Research Award
Utah State University Mathematics and Statistics Department, April 2007

Math and Stat Graduate Teaching Award
Utah State University Mathematics and Statistics Department, April 2007

2006 Senior Academic Achievement Award
Utah State University Mathematics and Statistics Department, April 2006

2001 University Club Scholarship
Utah State University, 2001

Robert C. Byrd Scholarship
Utah State Board of Education, 2001

GRANTS

2019 Alan R. Parry, Presenting at the Joint Mathematics Meeting 2020, Faculty Senate
Faculty Development Committee Travel Grant Award, October 31, 2019, Travel to:
Joint Mathematics Meetings, Denver, CO, January 15-18, 2020, Amount: $600.

2018 Alan R. Parry, *Contributing to the Differential Geometry Package in Maple - Yang
Mills Solutions*, UVU Grants for Engaged Learning Quick Grant, August 16, 2018,
Amount: $1,318.24.

Alan R. Parry, *Contributing to the Differential Geometry Software and Databases in Maple*, UVU Grants for Engaged Learning Quick Grant, June 5, 2018, Amount: $1,320.

Alan R. Parry, *Contributing to the Differential Geometry Software and Databases in Maple*, UVU College of Science Scholarly Activities Committee Scholarly Activities Grant, April 18, 2018, Amount: $1,200.

Alan R. Parry, *Contributing to the Differential Geometry Software and Databases in Maple*, UVU College of Science Scholarly Activities Committee Summer Stipend Award, April 11, 2018, Amount: $3,590.

GRANTS AWARDED TO SUPERVISED STUDENTS

2019 Eli Atkin (supervised by Alan R. Parry), *Creating a Database of Yang-Mills Solutions for the Differential Geometry Package in Maple*, UVU College of Science Scholarly Activities Travel Grant, April 2, 2019, Travel to: American Physical Society April Meeting, April 13-16, 2019, Amount: $922

2018 Eli Atkin, Ryan Bevan (supervised by Alan R. Parry), *Creating a Database of Yang-Mills Solutions for the Differential Geometry Package in Maple*, UVU College of Science Scholarly Activities Committee Travel Grant, November 26, 2018, Travel to: Joint Mathematics Meetings, Baltimore, MD, January 16-19, 2019, Amount: $1,780.

Eli Atkin, Ryan Bevan, (supervised by Alan R. Parry), *Contributing to the Differential Geometry Software and Databases in Maple - Training REU*, UVU College of Science Activities Committee Travel Grant, May 3, 2018, Travel to Dixie State University, May 11-12, 2018, Amount: $454.

TALKS

2020 *Normal Vectors and Space Curves*, 2020 Joint Mathematics Meetings, Denver, CO, January 17, 2020.

2019 *The Day Gravity and Curvature Met*, Roots of Knowledge Lecture Series, Utah Valley University, November 14, 2019.

Wibbly-Wobbly Timey-Wimey Geometry, 2019 UMATYC Conference, Utah Valley University, November 2,2019

Skiing Deeper into Slope, with Jennifer Hooper, NCTM 2019 Regional Conference, Salt Lake City, UT, October 18, 2019.

The Generalized Stokes Theorem, Mathematics Colloquium, Utah Valley University, April 19, 2019

2018 *A Useful Observation of the Unit Circle*, UCTM 2018 Annual Conference, Draper Park Middle School, October 12-13, 2018

2017 *The Cat in the Hat is a Little Abstract*, Mathematics Colloquium, Utah Valley University, November 10, 2017, entire talk available on youtube at `https://www.youtube.com/watch?v=lg99onjzbNI`

Classifying Solvable Lie Algebras, 2$^{\text{nd}}$ Annual Idaho/Utah Geometry Rendezvous, Idaho State University, October 28, 2017

Who Has the Power?, Mathematics Colloquium, Utah Valley University, March 31, 2017, entire talk available on youtube at `https://www.youtube.com/watch?v=dNxqdIGaWIw`

The Courtship of Freedom and Manipulation: An Immutable Union, Mathematics Colloquium, Utah Valley University, March 17, 2017, entire talk availabe on youtube at `https://www.youtube.com/watch?v=jWIEdSJqASk`

Manipulation, Lies, and Elections, Mathematics Colloquium, Utah Valley University, March 10, 2017, entire talk available on youtube at `https://www.youtube.com/watch?v=oSaCubC1U1U`

2016 *Wave Dark Matter and Galactic Dynamics*, Mathematics Colloquium, Utah Valley University, November 18, 2016

A Pictorial Introduction to General Relativity, Mathematics Colloquium, Utah Valley University, November 11, 2016

Classifying Low-Dimensional Solvable Lie Algebras, DG Rendezvous 2016, Utah State University, November 5, 2016

Wibbly-Wobbly Timey-Wimey Geometry, Mathematics Colloquium, Utah Valley University, November 4, 2016

Black Holes Suck!, UConn Physics Club, University of Connecticut, April 8, 2016

Parametrizations of the Poisson-Schrödinger Equations in Spherical Symmetry, AMS Sectional Meeting: Special Session on Mathematical General Relativity, SUNY Stony Brook, March 19-20, 2016

Geometric Flows in General Relativity, AMS Sectional Meeting: Special Session on PDE Methods in Geometric Flows, SUNY Stony Brook, March 19-20, 2016

The Einstein-Klein-Gordon Equations and Wave Dark Matter, California State University - Sacramento, February, 23, 2016

Wibbly-Wobbly Timey-Wimey Geometry, Undergraduate Talk, Texas Christian University, February 18, 2016

A Light in the Darkness: What Curvature has to do with Dark Matter, Mathematics Colloquium, Brigham Young University, January 28, 2016

2015 *Shedding Light on Dark Matters*, PDE and Differential Geometry Seminar, University of Connecticut, December 7, 2015

Wibbly-Wobbly Timey-Wimey Geometry, UConn Math Club, University of Connecticut, September 16, 2015

Wave Dark Matter and Galactic Dynamics, RIT Astrophysics Group Lunch Seminars, Rochester Institute of Technology, March 18, 2015

2014 *Gravitational Monsters in the Dark*, UConn Astronomy Association, University of Connecticut, November 18, 2014

Black Holes Suck!, S.I.G.M.A. Seminar, University of Connecticut, November 14, 2014

Modeling Wave Dark Matter in Dwarf Spheroidal Galaxies, IARD 2014, University of Connecticut, June 9-13, 2014

Wibbly-Wobbly (and Perhaps Timey-Wimey) Geometry, Early College Experience Recertification Workshop, University of Connecticut, May 19, 2014

2013 *A Pictorial Introduction to General Relativity*, UConn Math Club, University of Connecticut, October 23, 2013

Understanding the Gravity of the Situation, S.I.G.M.A. Seminar, University of Connecticut, September 27, 2013

Mathematics Meets Astrophysics: An Overview of General Relativity and Dark Matter in Galaxies, PDE Seminar, Vanderbilt University, April 12, 2013

Modeling Wave Dark Matter in Dwarf Spheroidal Galaxies, High-Energy Theory and Cosmology Seminar, Vanderbilt University, April 12, 2013

Mathematics Meets Astrophysics: An Overview of General Relativity and Dark Matter in Galaxies, PDE and Differential Geometry Seminar, University of Connecticut, April 1, 2013

Mathematics Meets Astrophysics: An Overview of General Relativity and Dark Matter in Galaxies, Mathematics Colloquium, Brigham Young University, February 7, 2013

2012 *Modeling Wave Dark Matter in Dwarf Spheroidal Galaxies*, Miami 2012, Sponsored by the Physics Department at the University of Miami, December 13-20, 2012

Modeling Wave Dark Matter in Dwarf Spheroidal Galaxies, Math-Physics Colloquium, Lafayette College, October 3, 2012

A Pictorial Introduction to General Relativity, Mathematical Adventures and Diversions Talk, Lafayette College, October 3, 2012

Modeling Wave Dark Matter in Dwarf Spheroidal Galaxies, Geometry and Physics Seminar, University of Miami, September 26, 2012

Modeling Wave Dark Matter in Dwarf Spheroidal Galaxies, Geometry/Topology Seminar, Duke University, September 4, 2012

Crazy Cosmological Correlations and How General Relativity Has and Might Continue to Explain Them, Graduate/Faculty Seminar, Duke University, April 20, 2012

Dark Matter Matters, First Annual Math Slam, Duke University, March 23, 2012

ACADEMIC CONFERENCES

Organizer

2018 Learning to Use Maple Research Experience for Undergraduates, Dixie State University, May 11-12, 2018, Role: Co-organizer with Dr. Jesse Hicks and Presenter

Speaker

2020 2020 Joint Mathematics Meetings, Denver, CO, January 15-18, 2020, Role: Speaker, Session Moderator, and Undergraduate Poster Judge

2019 2019 UMATYC Conference, Utah Valley University, November 2,2019, Role: Speaker

NCTM 2019 Regional Conference, Salt Lake City, UT, October 18, 2019, Role: Speaker

2018 UCTM 2018 Annual Conference, Draper Park Middle School, October 12-13, 2018, Role: Speaker

2017 2nd Annual Idaho/Utah Geometry Rendezvous, Idaho State University, October 27-28, 2017, Role: Speaker

2016 DG Rendezvous 2016, Utah State University, November 4-5, 2016, Role: Speaker

AMS Sectional Meeting, SUNY Stony Brook, March 19-20, 2016, Role: Speaker at Special Sessions on Mathematical General Relativity and on PDE Methods in Geometric Flows

2014 IARD 2014 - The 9th Biennial Conference on Classical and Quantum Relativistic Dynamics of Particles and Fields, University of Connecticut, June 9-13, 2014, Role: Speaker

2012 Miami 2012 - A Topical Conference on Elementary Particles, Astrophysics, and Cosmology, Sponsored by the Physics Department at the University of Miami, December 13-20, 2012, Role: Speaker

Staff

2012 MSRI Summer Graduate Workshop on Mathematical General Relativity, MSRI, July 9-20, 2012, Role: Teaching Assistant

27th Annual Geometry Festival, Duke University, April 27-29, 2012, Role: Attendee/ Technology Liaison

Panel Member

2015 *Preparing for Math Graduate School Panel Discussion*, UConn Math Club, University of Connecticut, April 22, 2015, Role: Panel Member

Attendee

2019 MAA Intermountain Section Meeting, Southern Utah University, April 12-13, 2019, Role: Attendee

CUR: Broadening Participation Institute, Whitworth University, March 22-24, 2019, Role: Attendee

UCUR 2019, 13th Annual Utah Conference on Undergraduate Research, Weber State University, February 22, 2019, Role: Attendee/Faculty Mentor to Student Presenters

2019 Joint Mathematics Meetings, Baltimore, MD, January 17-19, 2019, Role: Attendee and Undergraduate Poster Judge

2018 MAA Intermountain Section Meeting, Utah State University, March 23-24, 2018, Role: Attendee

2nd Annual Intermountain Teaching for Learning Conference, Nevada State College, March 15-16, 2018, Role: Attendee

2017 ALEKS Symposium, Denver, CO, April 7, 2017, Role: Attendee

2016 2016 Joint Mathematics Meetings, Seattle, WA, January 6-9, 2016, Role: Attendee

2013 PCMI Graduate Summer School 2013, PCMI, June 30 - July 20, 2013, Role: Attendee/Student

43rd Barrett Memorial Lectures on the Proof of the Willmore Conjecture, University of Tennessee, Knoxville, May 4-5, 2013, Role: Attendee

2013 Joint Mathematics Meetings, San Diego, CA, January 9-12, 2013, Role: Attendee

2012 Southeastern Geometry Seminar XXI, University of Tennessee, Knoxville, December 9, 2012, Role: Attendee

2011 41st Barrett Memorial Lectures in Mathematical Relativity, University of Tennessee, Knoxville, May 11-14, 2011, Role: Attendee

SERVICE

Professional Service

Chair of the USHE Faculty Mathematics Major Committee, February 2020 - present

Reviewer for Classical and Quantum Gravity, 2019

UVU Faculty Senate Policy Liason, April 2019 - present

UVU Mathematics Department Transfer Articulation, August 2017

UVU Faculty Senate, April 2017 - April 2020

Organizer for the PDE and Differential Geometry Seminar in the University of Connecticut Mathematics Department, January 2014 - May 2016

Reviewer for the Canadian Journal of Physics, 2013

Committee Service

UVU Search Committee - Associate Vice President of Academic and Student Digital Services, June 2020 - present

UVU Mathematics Department Hiring Committee - Non Tenure Track Lecturer, June 2020 - present

UVU Policy Coordinator Committee, February 2020 - present

UVU College of Science Faculty Excellence Awards Selection Committee, January 2020 - February 2020

UVU Mathematics Department Hiring Committee - Tenure Track Mathematics Faculty, January 2020 - April 2020

UVU University Governance Committees Policy Drafting Committee, December 2019 - April 2020

UVU Faculty Separation Task Force, December 2019 - present

UVU Search Committee - College of Science Dean, October 2019 - March 2020

UVU Enrollment Management Policy Review Committee, October 2019 - present

UVU Faculty Web Resources Task Force, October 2019 - present

UVU GE Transfer Credit Task Force, August 2019 - September 2019

UVU Academic Scheduling Committee, July 2019 - present

UVU Faculty Senate Executive Committee, April 2019 - present

UVU Faculty Sabbatical Leave Policy Drafting Committee, Chair, April 2019 - present

UVU Faculty Evaluation of Administrators Policy Drafting Committee, Chair, April 2019 - present

UVU Policy Subcommittee, April 2019 - present

UVU SCULPT, February 2019 - present

UVU Mathematics Department Hiring Committee - Course Manager, Chair, January 2019 - May 2019

UVU Mathematics Department Hiring Committee - Tenure Track Actuarial Science Emphasis, January 2019 - May 2019

UVU Data Science Program Committee, January 2019 - present

UVU Faculty Workload Task Force, Chair, December 2018 - April 2019

UVU College of Science Curriculum Committee, August 2018 - September 2019

UVU Mathematics Department Curriculum Committee, Chair, August 2018 - September 2019

UVU Mathematics Department Graduate Committee, August 2018 - present

UVU Mathematics Department Executive Committee, August 2018 - present

UVU Shared Governance Committee, April 2018 - April 2019; Chair, January 2019 - April 2019

UVU College of Science Faculty Excellence Awards Selection Committee, January 2018 - February 2018

UVU Mathematics Department Math 2000 Committee, May 2017 - April 2019; Chair, May 2017 - August 2018

UVU Academic Technology Steering Committee, April 2017 - April 2019

UVU Math Club Committee, April 2017 - August 2018

UVU Mathematics Department Math 1055 Committee, April 2017 - August 2018

UVU Mathematics Department Building a Bridge Between Two Departments Committee, February 2017 - August 2018

UVU Mathematics Department Undergraduate Research Committee, August 2016 - August 2018

UVU Mathematics Department Outreach Committee, August 2016 - August 2018

Duke Mathematics Department Calculus Textbook Selection Committee, February 2013 - March 2013

Duke Mathematics Department Calculus Committee, January 2010 - June 2013

OUTREACH

UVU Mathematics Alumni Association Coordinator, August 2016 - August 2018

UVU Math Club Election of π vs. τ, Represented π in the debate and election, Utah Valley University, September 2016 - November 2016

University of Connecticut Physics Department Special Awards Judge for Connecticut Science & Engineering Fair, Quinnipiac University, March 15-19, 2016

Event Organizer for 1$^{\text{st}}$ Annual UConn Multi-Department STEM-fest High School Outreach, University of Connecticut, May 14, 2015

UNDERGRADUATE RESEARCH PROJECTS MENTORED

2020-present Franklin Maxfield, *Viviani's n Vertices*, Utah Valley University

2019-present Daniel Havens, *Evolutes of Curves*, Utah Valley University

2018-present Eli Atkin and Ryan Bevan, *Creating a Database of Solutions to the Yang-Mills Equations for the Differential Geometry Package in Maple*, Utah Valley University

SENIOR THESES SUPERVISED

2015 Zachary Cohen, *Schwarzschild Spacetime and Friedmann-Lemaître-Robertson-Walker Cosmology*, University of Connecticut, Completed June 2015

CURRICULUM DEVELOPMENT

Utah Valley University - Assistant Professor
Courses Created

MATH 6330	Advanced Linear Algebra	
	Created with Bob Palais (in development; 2020)	
MATH 489R	Undergraduate Research in Mathematics	
	Minor addition to course offerings (2019)	
MATH 1080	Precalculus QL	
	Created at request by USHE (2018)	
MATH 290R	Topics in Mathematics	
	Minor addition to course offerings (2018)	
MATH 3250	Introduction to Advanced Calculus	
	Created with David Fearnley, Christine Merrin, and Bob Palais (2018)	
MATH 4100	Differential Geometry of Curves and Surfaces	
	Created with Bob Palais (2018)	
MATH 2000	Algebraic Reasoning with Modeling QL	
	Chaired development committee (2017)	

Utah Valley University - Assistant Professor
Programs Created

Master of Science	Mathematics Education
	Created with Bob Palais, Christine Walker, and the
	Mathematics Department Graduate Committee
	(in development; 2020)
Certificate	Data Science
	Created by the Data Science Program Committee
	(in development; 2020)

TEACHING EXPERIENCE

Utah Valley University - Assistant Professor
Courses Taught

Theory of Linear Algebra	Spring 2019, Spring 2020
Introduction to Modern Algebra I	Fall 2018
Diff. Geom. of Curves and Surfaces	Fall 2019
Discrete Mathematics	Spring 2018
Foundations of Analysis	Spring 2017
Foundations of Geometry	Fall 2017, Spring 2018, Spring 2019, Fall 2019, Spring 2020, Fall 2020

Differential Equations and Linear Algebra	Summer 2020, Fall 2020
Calculus III	Fall 2018, Spring 2019
Calculus II	Spring 2017, Spring 2018, Summer 2020
Calculus I	Fall 2016, Summer 2017, Fall 2017, Summer 2018, Summer 2019
Introduction to Calculus	Fall 2016
Trigonometry	Fall 2016, Summer 2017
College Algebra	Spring 2017, Summer 2019
Math Leap (MATH 100R or workshop)	Summer 2020 (2 sections), Summer 2017, Fall 2017 (5 sections), Spring 2018, Summer 2018 (5 sections), Fall 2018 (3 sections)

University of Connecticut - Visiting Assistant Professor
Courses Taught

Elements of Topology	Spring 2016
Mathematical Writing Seminar	Fall 2015, Spring 2016
Transitions to Advanced Mathematics	Fall 2014
Geometry	Spring 2014, Spring 2015, Fall 2015
Applied Linear Algebra	Fall 2013, Spring 2015, Summer 2015
Honors Multivariable Calculus	Fall 2014
Honors Calculus II	Spring 2014
Honors Calculus I	Fall 2013
Calculus I	Summer 2014, Summer 2016
Calculus for Business and Economics	Winter Intersession 2016
Precalculus	Winter Intersession 2014, Winter Intersession 2015

Duke University - Graduate Student Instructor
Courses Taught

Laboratory Calculus I	Spring 2011
One Variable Calculus	Fall 2010
Laboratory Calculus and Functions I	Fall 2008, Summer 2009, Fall 2009, Spring 2010, Summer 2010

Lab TA

Laboratory Calculus II	Fall 2007

Utah State University - Graduate Student Instructor
Courses Taught

Single Variable Calculus I	Summer 2007
College Algebra	Fall 2006, Spring 2007
Intermediate Algebra	Spring 2006, Summer 2006