
Lee Roberson

Curriculum Vitae

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Department of Mathematics
University of Colorado
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Education

- Ph.D. in Mathematics Education, University of Northern Colorado 2014
Advisor: Bill Blubaugh
Dissertation: *Building bridges: Connecting collegiate athletic and mathematics cultures.*
- M.A. in Mathematics, University of Kentucky 2007
Advisor: Edgar Enochs
- B.S. in Mathematics, University of Kentucky 2005
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Current Position

- Instructor of Mathematics, University of Colorado-Boulder 2016-present
Department of Mathematics
MATH 1300, Calculus 1 Course Coordinator (Spring 2017, Fall 2017, Fall 2018, Spring 2019)
MATH 2300, Calculus 2 Course Coordinator (Fall 2016, Spring 2018, Fall 2020, Spring 2021)
Instructor of Record
- MATH 1112, Business Analysis
 - MATH 1300, Calculus 1
 - MATH 2001, Discrete Mathematics
 - MATH 2300, Calculus 2
 - MATH 2400, Calculus 3
 - MATH 3120, Functions and Modeling
 - MATH 3210, Euclidean and Non-Euclidean Geometry
 - MATH 3850, Seminar in Guided Mathematics Instruction
 - MATH 5905, Mathematics Teacher Training
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Research Interests

- Developing understanding of the culture of mathematics, and then taking this understanding to inform teaching practices that help share the culture of mathematics and bring students deeper into the culture of mathematics.
 - Designing and implementing inquiry-based pedagogical practices within a mathematics classroom
 - Examining graduate teaching assistants' questioning techniques
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Curriculum Development

Revision of MATH 2300 - Calculus 2 Curriculum	2019-2020
<ul style="list-style-type: none">• Development of course learning objectives• Redesign of curriculum to accommodate for remote environment• Revised course schedule• Development of active learning projects and activities• Creation of novel written homework assessments focusing on students' conceptual understanding and metacognition skills	
Incorporating and Refining of Video Case Analysis of Student Thinking (VCAST) Modules into MATH 3120 - Functions and Modeling	2019-2020
Revision of MATH 1300 - Calculus 1 Course Materials	2018-2019
<ul style="list-style-type: none">• Development of course learning objectives• Development of active learning projects and activities• Development of instructor notes for implementing active learning projects• Creation of novel written homework assessments focusing on students' conceptual understanding and metacognition skills	
Revision of MATH 2400 – Calculus 3 Curriculum	2016
<ul style="list-style-type: none">• Redesign of curriculum to accommodate transition from 4 to 5 credit hours• Revised course schedule• Development of active learning projects and activities• Development of instructor notes for implementing active learning projects and activities	

Professional Teaching Experience

Instructor of Mathematics, Laramie County Community College School of Mathematics and Science Instructor of Record	2013-2016
<ul style="list-style-type: none">• MATH 2800, Mathematics Major Seminar• MATH 2210, Calculus III• MATH 2205 Calculus II• MATH 2200 Calculus I• MATH 2120, Geometry & Measurement for Elementary Teachers• MATH 1105, Data, Probability & Algebra for Elementary Teachers• MATH 1100, Numbers & Operations for Elementary Teachers• MATH 1000, Problem Solving• MATH 930, Intermediate Algebra• MATH 920, Elementary Algebra• MATH 900, Pre-Algebra• EDEL 2410, Elementary School Mathematics Seminar II• EDEL 1410, Elementary School Mathematics Seminar I	

<p>Graduate Teaching Assistant in Mathematics, Univ. of Northern Colorado School of Mathematical Sciences Instructor of Record (through Spring 2013):</p> <ul style="list-style-type: none"> • MATH 341, Modern Geometry • MATH 233, Calculus III • MATH 182, Fundamentals of Mathematics II: Algebra, Probability, & Data Analysis • MATH 181, Fundamentals of Mathematics I: Numbers & Operations • MATH 176, Topics in Calculus • MATH 124, College Algebra <p>Assisted with Classes (through Spring 2013)</p> <ul style="list-style-type: none"> • MATH 528, Discrete Mathematics • MATH 342, Modern Geometry II 	2008-2013
<p>Graduate Teaching Assistant in Mathematics, University of Kentucky Instructor of Record:</p> <ul style="list-style-type: none"> • College Algebra • Intermediate Algebra • Calculus III (recitation) • Calculus I (recitation) 	2005-2007
<p>Undergraduate Teaching Assisting in Mathematics, University of Kentucky Classes Assisted With:</p> <ul style="list-style-type: none"> • Calculus II • Elementary Calculus • Analytical Geometry 	2003-2005

Related Experience

<p>Mentorship in Inquiry-Based Instruction Under direction of N. Miller (Educational Advancement Foundation funded)</p> <ul style="list-style-type: none"> • Observe and assist N. Miller inquiry-based teaching practices • Implement inquiry-based practices in my own instruction 	2011-2012
<p>Summer Graduate Research Assistant, University of Northern Colorado Under direction of H. Soto-Johnson and M. Oehrtman</p> <ul style="list-style-type: none"> • Qualitative data analysis of interview data • Present preliminary findings at Mathfest 2011 	2011
<p>Graduate Research Assistant Mathematics Teacher Leadership Center (NSF-funded)</p> <ul style="list-style-type: none"> • Compile methods and initial findings of research • Initial qualitative analysis of on-line classroom data 	2010-2011
<p>Summer Graduate Research Assistant Mathematics Teacher Leadership Center (NSF-funded)</p> <ul style="list-style-type: none"> • Quantitative analysis of interview and observation data 	2010

Summer Graduate Research Assistant Mathematics Teacher Leadership Center (NSF-funded)	2009
<ul style="list-style-type: none"> • Analysis of survey data • Produce a written synthesis of analysis of survey data 	
Explorer Program, University of Kentucky Appalachian Mathematics and Science Partnership (NSF-funded)	2003-2005
<ul style="list-style-type: none"> • Assist professors in their teaching • Hold regular hours in study room for math students • Meet with mathematics faculty to discuss teaching mathematics 	
Mathematics Tutor, University of Kentucky Center for Academic Tutoring and Services	2004-2005
<ul style="list-style-type: none"> • Private mathematics and statistics tutor for student-athletes 	

Peer-Reviewed Publications

- Roach, K., Roberson, L., Tsay, J.-J., & Hauk, S. (2013) *College mathematics and question strategies*. In: Hauk, S., Speer, N.M., Kung, D., Tsay, J.-J., & Hsu, E. (Eds) *Video cases for college mathematics instructor professional development*. Retrieved from <http://collegemathvideocases.org/essays/index.php>
- Soto-Johnson, H., Oehrtman, M., Noblet, K., Roberson, L., & Rozner, S. (2012). Experts' reification of complex variables concepts: The role of metaphor. *Proceedings of the 15th Annual Conference on Research in Undergraduate Mathematics Education*, pp. 433-447. Retrieved from http://pzacad.pitzer.edu/~sbrown/RUME/RUME_XV_Volume_1.pdf
- Roach, K., Roberson, L., Tsay, J.J., & Hauk, S. (2010) *Mathematics graduate teaching assistants' question strategies*. Paper presented at Thirteenth SIGMAA on Research in Undergraduate Mathematics Education Conference, Raleigh, NC.

Selected Presentations

Designing and Implementing Active Learning Reform for Calculus 3 Presentation with F.T.Liu & C. Ng National Inquiry-Based Learning and Teaching Conference Denver, CO	June, 2019
Defining Definitions Presentation University of Colorado Math Club Talk Boulder, CO	Nov, 2018
Incorporating Active Learning Strategies Through a Problem Based Calculus Course Presentation Wyoming Mathematical Association of Two-Year Colleges Annual Articulation Conference, Torrington, WY.	April, 2016

Panel Discussion on a Mentoring Program for Using IBL Methods in Teaching College Geometry Presentation with N. Miller, S. Rozner Haley, & B.A. Dibbs 17 th Annual Legacy of R.L. Moore – Inquiry-Based Learning Conference, Denver, CO.	June, 2014
Sharing Our Mathematics Culture Research Presentation Mathematical Association of America Rocky Mountain Section Meeting, Laramie, WY.	March, 2014
Geometric Interpretations of Complex Variables and Complex-Valued Functions Research Presentation with H. Soto-Johnson, S. Rozner, K. Noblet, & M. Oehrtman MathFest, Lexington, KY.	August, 2011
An Inquiry into the Influences of Pedagogical Content Knowledge and Epistemological Stance on Teachers' Approach to Teaching Fundamental Theorem of Calculus Research Presentation with V. Blasjo & T. Dalgamoni UNC Research Day, University of Northern Colorado	April, 2010
Why Did I Ask That? The Questions Graduate Teaching Assistants Ask Their Students Research Presentations with K. Roach & K. Noblet UNC Research Day, University of Northern Colorado	April, 2009

Workshops and Minicourses attended

Arts & Science Support of Education Through Technology (ASSETT) Summer Course Design Workshop, University of Colorado-Boulder	2020
Mastery Grading Virtual Conference	2020
VCAST UTeach Virtual Workshop	2020
VCAST UTeach Workshop Austin, TX	2019
Arts & Science Support of Education Through Technology (ASSETT) Faculty Fellowship, University of Colorado-Boulder	2019
College Mathematics Instructor Development Source Workshop Orono, ME	2017
Inquiry-Based Learning Workshop Academy of Inquiry Based Learning, Boulder, CO	2016

Designing and Implementing a Problem Based Mathematics Course MAA Minicourse Joint Mathematics Meetings, Seattle, WA	2016
Increasing Student Engagement and Understanding through Active Learning Strategies in Calculus MAA Minicourse Joint Mathematics Meetings, Seattle, WA	2016

Service

Initiated Calculus Faculty Learning Committee with Joseph Timmer, University of Colorado-Boulder	2019-2020
Observation of Lecturers, Mathematics department, University of Colorado-Boulder	2019-2020
Undergraduate Committee Member, Mathematics department, University of Colorado-Boulder	2019-2020
Coordination Committee Member, Mathematics department, University of Colorado-Boulder	2017-2018
Undergraduate Committee Member, Mathematics department, University of Colorado-Boulder	2017-2018
Outreach Committee Member, Mathematics department, University of Colorado-Boulder	2016-present
Observation of Graduate Teaching Assistants' teaching and follow-up debrief, Mathematics department, University of Colorado-Boulder	2016-present
Assist in Learning Assistant Interviews, Mathematics department, University of Colorado-Boulder	2015-2016
School of Math and Science Faculty Senate Representative, Laramie County Community College	2015
Mathematics Department Institutional Assessment Goals Committee, Laramie County Community College	2014-2015
Advising Committee for Developmental Mathematics Curriculum Reform, Laramie County Community College	2013-2014
Mathematics Faculty Representative, Laramie County Community College, Search committee for mathematics faculty position	2013-2014
Host Committee Member, University of Northern Colorado, Research in Undergraduate Mathematics Education Conference	2012-2013
Graduate Mathematics Student Representative, University of Northern Colorado, Search committee for a tenure-track mathematics position	2012

Freshmen Summer Advising, University of Northern Colorado	2011
Conference Proceedings Reviewer, Research in Undergraduate Mathematics Education	2011
Mathematics Tutor, University of Northern Colorado	2008-2012

Recognition

Arts & Science Support of Education Through Technology (ASSETT) Faculty Fellow	2019
Nominee for CU Boulder Libraries' and Student Government Open Educator Award	2019
Nominee for Marinus Smith Award	2013
Nominee for Speaker at 8 th Annual Student Research Celebration Banquet, University of Northern Colorado	2011
Award for Outstanding Teaching by a Graduate Student, University of Northern Colorado	2010
Nominee for Outstanding Teaching by a Graduate Student, University of Northern Colorado	2010
Dean's Scholarship, University of Northern Colorado	2008

Professional Skills

Qualitative Research and Statistics
 Proficient in NVivo and SPSS

Teaching and Learning
 Proficient in Microsoft Office, GeoGebra, Spherical Easel, nonEuclid: Interactive Constructions in Hyperbolic Geometry, TI calculators, Blackboard, WebWork, Elluminate Live!, Desire2Learn, Tegrity Recordings, ALEKS, MyMathLab, WebAssign, Mathematica, LaTeX, Canvas, Slack, Zoom, Kaltura, Desmos, and Excel, Google Jamboard, Microsoft OneNote
