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## EDUCATION

- 2012 **PhD, Mathematics**, *Colorado State University*, Fort Collins, CO.  
Dissertation Title: Mean Variants on Matrix Manifolds  
Advisors: Michael Kirby and Chris Peterson
- 2009 **MS, Mathematics**, *Colorado State University*, Fort Collins, CO.  
Thesis Title: Discriminative Canonical Correlations  
Advisors: Michael Kirby and Chris Peterson
- 2006 **BA, Mathematics**, *Westmont College*, Santa Barbara, CA.  
*magna cum laude, major honors (title: Gödel, advisor: Russell Howell)*

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## RESEARCH INTERESTS

Geometric data analysis, matrix analysis and applications, computational linear algebra, hyperspectral imagery, frame theory, compressed sensing

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## EMPLOYMENT

- Aug 2019 - Present **Associate Professor of Mathematics**, *Biola University*, La Mirada, CA.  
Taught various courses. Designed course content including syllabi, lectures, quizzes, exams, labs, handouts, slides, and web-based materials. Served on committees. Developed research collaborations. Advised undergraduate research.
- Aug 2016 - May 2019 **Assistant Professor of Mathematics**, *Gonzaga University*, Spokane, WA.  
Taught various courses. Designed course content including syllabi, lectures, quizzes, exams, labs, handouts, slides, and web-based materials. Served on committees. Developed research collaborations. Advised undergraduate research. Taught at the Gonzaga-in-Florence campus during Spring 2018.
- Sept 2015 - June 2016 **Visiting Assistant Professor of Mathematics**, *Wesleyan University*, Middletown, CT.  
Taught 4 courses. Designed course content including syllabi, lectures, exams, labs, handouts, slides, and web-based materials. Launched a math & computer science teaching seminar. Contributed to interdepartmental project-based teaching initiatives. Developed research collaborations.
- Aug 2013 - June 2015 **Postdoctoral Fellow of Mathematics**, *Bowdoin College*, Brunswick, ME.  
Taught 6 courses. Designed course content including syllabi, lectures, exams, labs, handouts, and web-based materials. Maintained research collaborations outside of Bowdoin. Received pedagogical training from Bowdoin math faculty. Applied for and received internal research and teaching grants. Advised independent study in geometric data analysis. Wrote letters of reference for students applying for internships and employment.
- Sept 2012 - Aug 2013 **Postdoctoral Researcher**, *Air Force Institute of Technology*, Wright Patterson Air Force Base, OH, Advisor: Matthew Fickus.  
Wrote a frame theory paper regarding optimal frame completions. Explored mathematical foundations for compressed sensing hyperspectral imagery. Collaborated actively with department colleagues.
- Nov 2011 - June 2012 **Graduate Research Assistant**, *MIT Lincoln Laboratory*, Lexington, MA, Advisor: Dimitris Manolakis.  
Investigated nonlinear manifold methods for analysis of hyperspectral chem-bio interferometer data. Developed knowledge of statistics and regression analysis. Pursued novel classification schemes. Implemented algorithms in Matlab and presented findings to lab colleagues.

- Aug 2006 - **Graduate Teaching Assistant**, *Colorado State University*, Fort Collins, CO.  
Dec 2011 Taught 10 classes. Lectured 4 days per week, wrote homeworks, study guides, quizzes and exams, graded assignments, provided one-on-one help in office hours and during lab sessions. Worked closely with other instructors to plan lessons and create assessments.
- 2009 - 2012 **Graduate Research Assistant**, *Colorado State University*, Fort Collins, CO,  
Advisors: Michael Kirby and Chris Peterson.  
Researched geometric data analysis, with focus on the meta-problem of subspace comparisons, parameterizations of subspaces, algorithm development, data management. Implemented algorithms in Matlab.
- Aug 2010 - **Graduate Teaching Assistant Mentor**, *Colorado State University*, Fort Collins,  
May 2011 CO.  
Introduced new Graduate Teaching Assistants to mathematics teaching fundamentals. Evaluated teaching performance based on classroom observation.
- Jan 2008 - **Pattern Analysis Lab Coordinator**, *Colorado State University*, Fort Collins,  
March 2008 CO.  
Partnered with faculty to develop efficient collection methods and useful data formats. Trained undergraduate students to collect videos of faces under a sequence of protocols.

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## PUBLICATIONS

Matthew Fickus, **Justin Marks**, Miriam J. Poteet. A Generalized Schur-Horn Theorem for Frame Completions. *Applied and Computational Harmonic Analysis*, 2015. <http://authors.elsevier.com/sd/article/S1063520315000433>

Daniel Bates, Brent Davis, Michael Kirby, **Justin Marks**, Chris Peterson. The Max-Length-Vector Line of Best Fit to a Set of Vector Subspaces and an Optimization Problem Over a Set of Hyperellipsoids. *Numerical Linear Algebra with Applications*, 2015. <http://onlinelibrary.wiley.com/doi/10.1002/nla.1965/abstract>

**Justin Marks**. Kingdom Mindfulness: A Mind Full of What? *Agathos Journal*, Volume 1, Number 1, Lessons from Creation, May, 2015. <https://agathosjournal.wordpress.com/2015/05/21/kingdom-mindfulness-a-mind-full-of-what/>

Avishai Ben-David, **Justin Marks**. Geodesic Paths for Time Dependent Covariance Matrices in a Riemannian Manifold. *IEEE Geoscience and Remote Sensing Letters*, Sept 2014. <http://ieeexplore.ieee.org/stamp/stamp.jsp?tp=&arnumber=6727392>

Bruce Draper, Michael Kirby, **Justin Marks**, Tim Marrinan, Chris Peterson. A Flag Representation for Finite Collections of Subspaces of Mixed Dimensions. *Linear Algebra and its Applications*, June 2014. <http://www.sciencedirect.com/science/article/pii/S0024379514001669>

Michael Kirby, **Justin Marks**, Chris Peterson. Two Tangent Bundle Algorithms for Averaging Point Clouds on Grassmann and Stiefel Manifolds. In preparation for submission.

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## TEACHING EXPERIENCE

### COURSE INSTRUCTOR

- (Fall 2022) **Business Statistics**, *Biola University*, La Mirada, CA.  
(Fall 2022) **Linear Algebra I (2 sections)**, *Biola University*, La Mirada, CA.

- (Fall 2022) **Numerical Analysis**, *Biola University*, La Mirada, CA.
- Spring 2022 **Complex Analysis**, *Biola University*, La Mirada, CA.
- Spring 2022 **Business Statistics (online section)**, *Biola University*, La Mirada, CA.
- Spring 2022 **Business Statistics (2 sections)**, *Biola University*, La Mirada, CA.
- Fall 2021 **Business Statistics (2 sections)**, *Biola University*, La Mirada, CA.
- Fall 2021 **Linear Algebra I (2 sections)**, *Biola University*, La Mirada, CA.
- Summer 2021 **Business Statistics (online section)**, *Biola University*, La Mirada, CA.
- Spring 2021 **Business Statistics (online section)**, *Biola University*, La Mirada, CA.
- Spring 2021 **Business Statistics (2 sections)**, *Biola University*, La Mirada, CA.
- Spring 2021 **Biostatistics**, *Biola University*, La Mirada, CA.
- Fall 2020 **Business Statistics (2 sections)**, *Biola University*, La Mirada, CA.
- Fall 2020 **Biostatistics**, *Biola University*, La Mirada, CA.
- Fall 2020 **Linear Algebra I**, *Biola University*, La Mirada, CA.
- Spring 2020 **Business Statistics (2 sections)**, *Biola University*, La Mirada, CA.
- Spring 2020 **Biostatistics**, *Biola University*, La Mirada, CA.
- Fall 2019 **Quantitative Reasoning**, *Biola University*, La Mirada, CA.
- Fall 2019 **Biostatistics**, *Biola University*, La Mirada, CA.
- Fall 2019 **Number Theory/Math History**, *Biola University*, La Mirada, CA.
- Spring 2019 **Math 258: Calculus - Analytic Geometry II**, *Gonzaga University*, Spokane, WA.
- Spring 2019 **Math 321: Statistics for the Experimentalist**, *Gonzaga University*, Spokane, WA.
- Fall 2018 **Math 157: Calculus - Analytic Geometry I (2 sections)**, *Gonzaga University*, Spokane, WA.
- Fall 2018 **Math 321: Statistics for the Experimentalist**, *Gonzaga University*, Spokane, WA.
- Spring 2018 **Math 260: Ordinary Differential Equations**, *Gonzaga-In-Florence*, Florence, Italy.
- Spring 2018 **Math 321: Statistics for the Experimentalist (2 sections)**, *Gonzaga-In-Florence*, Florence, Italy.
- Fall 2017 **Math 260: Ordinary Differential Equations**, *Gonzaga University*, Spokane, WA.
- Fall 2017 **Math 321: Statistics for the Experimentalist (2 sections)**, *Gonzaga University*, Spokane, WA.
- Summer 2017 **Math 321: Statistics for the Experimentalist**, *Gonzaga University*, Spokane, WA.
- Spring 2017 **Math 321: Statistics for the Experimentalist (2 sections)**, *Gonzaga University*, Spokane, WA.
- Spring 2017 **Math 157: Calculus - Analytic Geometry I**, *Gonzaga University*, Spokane, WA.

- Fall 2016 **Math 157: Calculus - Analytic Geometry I (2 sections)**, *Gonzaga University*, Spokane, WA.
- Spring 2016 **Elementary Statistics**, *Wesleyan University*, Middletown, CT.
- Spring 2016 **Vectors and Matrices**, *Wesleyan University*, Middletown, CT.
- Fall 2015 **Elementary Statistics**, *Wesleyan University*, Middletown, CT.
- Fall 2015 **Calculus I, Part II**, *Wesleyan University*, Middletown, CT.
- Spring 2015 **Integral Calculus, Advanced Section**, *Bowdoin College*, Brunswick, ME.
- Fall 2014 **Probability**, *Bowdoin College*, Brunswick, ME.
- Fall 2014 **Integral Calculus**, *Bowdoin College*, Brunswick, ME.
- Spring 2014 **Intermediate Linear Algebra**, *Bowdoin College*, Brunswick, ME.
- Spring 2014 **Multivariable Calculus**, *Bowdoin College*, Brunswick, ME.
- Fall 2013 **Complex Analysis**, *Bowdoin College*, Brunswick, ME.
- Fall 2011 **Matlab**, *Colorado State University*, Fort Collins, CO.
- Fall 2011 **Maple**, *Colorado State University*, Fort Collins, CO.
- Fall 2010 **Calculus for Biological Scientists II**, *Colorado State University*, Fort Collins, CO.  
Included calculus, linear algebra and differential equations
- Fall 2009 **Calculus for Physical Scientists III**, *Colorado State University*, Fort Collins, CO.
- Spring 2009 **Calculus for Physical Scientists II**, *Colorado State University*, Fort Collins, CO.
- Fall 2008 **Calculus for Physical Scientists II**, *Colorado State University*, Fort Collins, CO.
- Spring 2008 **Calculus for Physical Scientists I**, *Colorado State University*, Fort Collins, CO.
- Fall 2007 **Calculus for Physical Scientists I**, *Colorado State University*, Fort Collins, CO.
- Spring 2007 **Calculus for Biological Scientists I**, *Colorado State University*, Fort Collins, CO.
- Fall 2006 **Calculus for Biological Scientists I**, *Colorado State University*, Fort Collins, CO.

#### ACTIVITIES IN DEVELOPMENT OF TEACHING CRAFT

- May 2022 **Integration Seminar**, *Biola University*.  
Three day workshop to expand and deepen integration of faith and learning within my courses. Built a new module to train students in statistical wisdom.
- 2019-2021 **Science Cafe**, *Biola University*.  
Biweekly discussions about research. Formed collaborations.
- Fall 2019 **First Year First Semester Seminar**, *Biola University*.  
Weekly discussions about teaching, integration, and the institution.
- 2016-2019 **Math Teaching Circle**, *Gonzaga University*.  
Biweekly discussions regarding math pedagogy.
- 2016-2019 **Lunch and Learn**, *Gonzaga University*.  
Periodic interdepartmental panel discussions designed to support pre-tenure faculty.

- 2017-2018 **Advising Academy**, *Gonzaga University*.  
Monthly interdepartmental meetings designed to support faculty who are newly serving as advisors. Discussions of both nuts-and-bolts and nuances of advising.
- 2016-2017 **CTA New Faculty Learning Community**, *Gonzaga University*.  
Monthly interdepartmental discussions regarding pedagogy and life as a new faculty member.
- Fall 2016 **Teaching Square: Using Clickers**, *Gonzaga University*.  
Biweekly interdepartmental discussions regarding enhancing classroom teaching using clicker technology. Shared my experiences with/rationale for using clickers.
- Fall 2015 **Mathematics and Computer Science Teaching Seminar**, *Wesleyan University*.  
Weekly discussions on teaching with both junior and senior faculty.
- Fall 2013 - **Mathematics Teaching Seminar**, *Bowdoin College*.  
Spring 2015 Weekly discussions on teaching with both junior and senior faculty.
- Fall 2010 - **Graduate Teaching Assistant Mentor**, *Colorado State University*.  
Spring 2011 Trained first-time GTAs, documented classroom observations, and provided periodic feedback and coaching.
- 1998 - 2012 **Mathematics Tutoring**, *California and Colorado*.  
Mathematics tutoring for students attending high school, college, and graduate school.

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## INVITED SEMINARS

- June 2022 Pursuing Discriminative Statistics for Buried Object Detection using Ground Penetrating Radar  
*ACMS Meeting, Azusa Pacific University, Azusa, CA.*
- Feb 2020 In Pursuit of the Grassmann Manifold Projection Mean  
*Data Science and Image Analysis Conference of the Pacific Northwest, Washington State University, Pullman, WA.*
- July 2019 Matrix Manifold Means  
*SIAM Conference on Applied Algebraic Geometry, University of Bern, Bern, Switzerland.*
- March 2019 Matrix Manifold Means  
*Mathematics Colloquium, University of Idaho, Moscow, ID.*
- March 2019 Image Analysis in MATLAB  
*Mathematics Seminar Course, Gonzaga University, Spokane, WA.*
- Nov 2018 Matrix Manifold Means  
*AMS Graduate Chapter Colloquium, Washington State University, Pullman, WA.*
- Oct 2018 Matrix Manifold Means  
*Mathematics Colloquium, University of Montana, Missoula, MT.*
- July 2018 How NAG Advances Our Capabilities of Computing Matrix Manifold Means  
*SIAM Annual Meeting, Portland, OR.*
- April 2017 Manifold Methods for Averaging Subspaces  
*Mathematics Colloquium, CSU Chico, Chico, CA.*
- Dec 2016 Tangent/Normal Bundle Manifold Mean Algorithms  
*Spokane Regional Mathematics Colloquium, Gonzaga University, Spokane, WA.*

- Oct 2016 Matrix Manifold Means  
*Geometric Analysis Seminar, Washington State University, Pullman, WA.*
- Dec 2015 Image Analysis Using Matrix Manifolds  
*DaCKI Session on Image Analysis, Wesleyan University, Middletown, CT.*
- Dec 2015 Comparing Matrix Manifold Means  
*Topology et al. Seminar, Wesleyan University, Middletown, CT.*
- Feb 2015 Manifold Methods for Averaging Subspaces  
*Mathematics Department Colloquium, Houghton College, Houghton, NY.*
- Sept 2014 Flag Mean: A Geometric Subspace Average  
*Mathematics Department Colloquium, Colby College, Waterville, ME.*
- Sept 2014 Flag Mean: A Geometric Subspace Average  
*Mathematics Department Colloquium, Cedarville University, Cedarville, OH.*
- April 2014 Connecting the Dots: Geodesic Paths for Time Dependent Covariance Matrices for Hyperspectral Background Removal  
*Mathematics Department Seminar, Bowdoin College, Brunswick, ME.*
- Nov 2013 Proving the Impossibility of Proof  
*Math Lunch, Bowdoin College, Brunswick, ME.*
- Oct 2012 Flag Mean: A Geometric Variable-Dimension Subspace Average  
*Mathematics Department Seminar, Kenyon College, Gambier, OH.*
- May 2011 Matrix Manifold Means  
*Greenslopes Graduate Student Seminar, Colorado State University, Fort Collins, CO.*
- Feb 2010 Geometry Framework for Numerical Linear Algebra Algorithms  
*Greenslopes Graduate Student Seminar, Colorado State University, Fort Collins, CO.*
- Sept 2009 The Karcher Mean  
*Pattern Analysis Laboratory Seminar, Colorado State University, Fort Collins, CO.*
- Oct 2008 Discriminative Canonical Correlations: An Offspring of Linear Discriminant Analysis  
*Greenslopes Graduate Student Seminar, Colorado State University, Fort Collins, CO.*

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## CONFERENCE PRESENTATIONS

- June 2017 Grassmann Manifold Means (poster)  
*Topological Data Analysis: Theory and Applications Conference, Macalester College, St. Paul, MN.*
- June 2017 Manifold Methods for Averaging Subspaces  
*ACMS Meeting, Charleston Southern University, Charleston, SC.*
- April 2017 Subspace Means  
*Data Science Day, WSU, Pullman, WA.*
- April 2017 Grassmann Manifold Means (poster)  
*AMS Sectional Meeting, WSU, Pullman, WA.*
- April 2017 Subspace Video Fingerprinting (poster, with Ethan Mahintorabi)  
*AMS Sectional Meeting, WSU, Pullman, WA.*

- Jan 2017 Tangent Bundle Algorithms for Averaging Point Clouds on Grassmann and Stiefel Manifolds  
*Joint Math Meeting, Atlanta, GA.*
- Jan 2016 Comparative Analysis of Matrix Manifold Means  
*Joint Math Meeting, Seattle, WA.*
- July 2015 Improved Time-Dependent Background Covariance Matrix Estimation Using Geodesic Paths (Poster)  
*DTRA/NSF/NGA Algorithm Workshop, National Science Foundation, Arlington, VA*
- April 2015 When Matrix Manifold Means Need a Numerical Linear Algebra Lifeline  
*MAA Rocky Mountain Section Meeting, Colorado College, Colorado Springs, CO.*
- Jan 2014 Constructing Optimal Finite Frames with a Given Set of Lengths  
*Joint Math Meeting, Baltimore, MD.*
- Jan 2013 Flag Mean of Generalized Grassmann Manifold Points  
*Joint Math Meeting, San Diego, CA.*
- Nov 2012 Manifold Analysis for Hyperspectral Imagery: A Collaboration with MIT Lincoln Lab  
*DTRA/NSF/NGA Algorithm Workshop, San Diego, CA.*
- July 2011 Mean Variants on Special Manifolds  
*International Council for Industrial and Applied Mathematics, Vancouver, BC.*
- June 2011 Means on Grassmann and Stiefel Manifolds for Characterization of Hyper-Spectral Chem-Bio Data (poster also)  
*DTRA/NSF Algorithm Workshop, Boston, MA.*
- August 2010 Modeling Data Cubes on Grassmann and Stiefel Manifolds  
*CSU/PSI Workshop, Colorado State University, Fort Collins, CO.*
- June 2010 Manifold Comparison and Karcher Mean on Fabry-Perot Interferometer Sensor Data Set  
*DTRA/NSF Algorithm Workshop, Chapel Hill, NC.*
- April 2009 Discriminative Canonical Correlations: An Offspring of Linear Discriminant Analysis  
*MAA Rocky Mountain Section Meeting, Colorado School of Mines, Golden, CO.*

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## CONFERENCE ATTENDANCE

- Nov 2017 AAC&U Transforming STEM Higher Education, San Francisco, CA.
- Jan 2015 Joint Math Meeting, San Antonio, TX.
- March 2014 DTRA/NSF/NGA Algorithms for Threat Detection Program Review, NCAR, Boulder, CO.
- April 2012 Quantitative Methods in Defense and National Security, George Mason University, Fairfax, VA.
- Jan 2012 Joint Math Meeting, Boston, MA.
- April 2011 SIAM International Conference on Data Mining, Mesa, AZ.
- April 2011 Western Algebraic Geometry Seminar, Stanford University, Palo Alto, CA.
- Nov 2010 Western Algebraic Geometry Seminar, University of Arizona, Tucson, AZ.



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## SERVICE

- Fall 2021-Present **STH Curriculum Committee, member**, *Biola University*, La Mirada, CA.  
Read, commented, and voted upon proposals for new courses and programs within STH.
- Fall 2021-Present **STH Research and Scholarship Committee, member**, *Biola University*, La Mirada, CA.  
Research and Scholarship Strategic Plan development.
- Fall 2021 **Quick Start Guide**, *Biola University*, La Mirada, CA.  
Met with and provided guidance for new Talbot Faculty Member Dominick Hernandez.
- 2020 **Data Analysis Task Force, member**, *Biola University*, La Mirada, CA.  
Partnered to develop new Data Science program. Met periodically with the committee.
- Summer 2020 **Research Mentor**, *Biola University*, La Mirada, CA.  
Advised Colin Van Meter in a research project pertaining to subspace means. We examined zebrafish neuron images.
- Feb 2020 **Data Science & Image Analysis Conference of the Pacific Northwest, co-PI**, *Washington State University*, Pullman, WA.  
Collaborated with other co-PIs, pursued and received NSF conference grant, compiled information on Spokane attractions, invited, coordinated with, and introduced speakers.
- Spring 2019 **Research Mentor**, *Gonzaga University*, Spokane, WA.  
Advised Ewan Atkins in a research project pertaining to subspace means.
- Spring 2019 **Undergraduate Research Committee, member**, *Gonzaga University*, Spokane, WA.  
Designed metrics for assessing undergraduate research.
- 2018-2019 **Liaison to Career Services**, *Gonzaga University*, Spokane, WA.  
Communicated with Ray Angle about the upcoming Applied Math Major and Career Trek to Silicon Valley. Will help connect math students to Career Services.
- 2017-2019 **Applied Math Major Committee, member**, *Gonzaga University*, Spokane, WA.  
Partnered to develop new applied math major. Met weekly with the committee. Wrote mission statement and data-driven rationale for the applied math major. Contributed to and edited the applied math major proposal document.
- 2017-2019 **Advisor**, *Gonzaga University*, Spokane, WA.  
Advised multiple students in course selection and other decisions. Met with advisees periodically.
- 2016-2019 **Spokane Regional Mathematics Colloquium, co-organizer**, *Gonzaga University*, Spokane, WA.  
Developed website, organized logistics for guests, prepared venue, and introduced speakers.
- 2016-2019 **Math Club, co-organizer**, *Gonzaga University*, Spokane, WA.  
Attended Math Club meetings. Led a Fall 2018 meeting with focus on logic puzzles, reasoning, and theory, including Kurt G del's Incompleteness Theorems.



- Jan 2019 **Special Session on Statistical, Variational, and Learning Techniques in Image Analysis and their Applications to Biomedical, Hyperspectral, and Other Imaging, co-organizer**, *Joint Math Meeting*, Baltimore, MD.  
Collaborated with other co-organizers, invited speakers, introduced speakers, orchestrated question and answer periods, ensured program was on schedule.
- Jan 2019 **MAA Undergraduate Student Poster Session, judge**, *JMM 2019*, Baltimore, MD.  
Evaluated undergraduate student research posters. Asked questions and proposed research enhancements.
- 2016-2017 **Majors Committee, member**, *Gonzaga University*, Spokane, WA.  
Developed questions for investigation into the statistics of current major and minor offerings. Proposed restructuring of Math-Computer Science cross-department offerings.
- 2016-Dec 2017 **Research Mentor**, *Gonzaga University*, Spokane, WA.  
Advised Ethan Mahintorabi in a research project pertaining to subspaces, video piracy, and vectorizing of images. Ethan presented a poster at the AMS Sectional Meeting at WSU, Pullman in April 2017.
- Spring 2017 **Self-nominated for the Athletics Committee**, *Gonzaga University*, Spokane, WA.  
Expressed interest in being involved in developing the connection between athletics and academics at Gonzaga.
- March 2017 **Interviewed for KHQ TV**, *Gonzaga University*, Spokane, WA.  
Interviewed by local Spokane TV station regarding the probability of the Zags winning the 2017 NCAA Basketball National Championship.
- Jan 2017 **MAA Undergraduate Student Poster Session, judge**, *JMM 2017*, Atlanta, GA.  
Evaluated undergraduate student research posters. Asked questions and proposed research enhancements.
- Fall 2016 **Calculus I Assessment Committee, member**, *Gonzaga University*, Spokane, WA.  
Developed exam question for use by all Calculus I instructors. Determined grading rubric. Reported student performance.
- May 2016 **Career + Job Search Panel, panelist**, *Wesleyan University*, Middletown, CT.  
Shared math job search experience with graduate students.
- Dec 2015 **Quantitative Analysis Center Poster Session, judge**, *Wesleyan University*, Middletown, CT.  
Evaluated end-of-semester student posters. Discussed conclusions and future work.
- Oct 2015 **Math/CS Teaching Seminar, founder and organizer**, *Wesleyan University*, Middletown, CT.  
Advertised and launched seminar for faculty and graduate students to foster growth in teaching craft. Shared vision and pedagogical insights at first meeting.
- Aug 2015 **Preparing a Successful Tenure Portfolio Panel, moderator and session organizer**, *MathFest*, Washington D.C.  
Selected and invited panelists, designed structure of session, moderated the panel, managed question and answer discourse.
- 2014-2015 **Research Mentor**, *Bowdoin College*, Brunswick, ME.  
Advised Christian Boulanger in a research project pertaining to geometric data analysis. Developed Christian's ability to comprehend and implement algorithms.

- Jan 2014 **Session on Lattices, Polynomials, and Linear Algebra, moderator and chair**, *Joint Math Meeting*, Baltimore, MD.  
Introduced speakers, orchestrated question and answer periods, ensured program was on schedule.
- Oct 2011 **Matlab Workshop Courses with SIAM Student Chapter, instructor**, *Colorado State University*, Fort Collins, CO.  
Led Matlab Crash Course and Digital Photography Processing Course. Demonstrated Matlab fundamentals, supervised student coding, and corrected bugs.
- July 2011 **Math Circles, instructor**, *Colorado State University*, Fort Collins, CO.  
Taught an interactive lesson on logic to 7th, 8th, 9th, and 10th grade students involving truth tables, the Mastermind game, and an introduction to Gödel. Assisted with other lessons, logistical details, and ultimate Frisbee.
- Fall 2008, Fall 2009, Fall 2010 **Math Day, volunteer**, *Colorado State University*, Fort Collins, CO.  
Read problems, evaluated solutions, and kept time for high school team competition rounds.
- Dec 2010 - August 2011 **SIAM Student Chapter, co-founder and treasurer**, *Colorado State University*, Fort Collins, CO.  
Founded and promoted Chapter, partnering with the President. Maintained budget, completed and filed financial documents, organized guest speaker visits and Chapter receptions, wrote article for and edited Chapter newsletter.

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## Awards and Honors

- Dec 2019 Applied for Internal Faculty Research and Development Grant (to support the formation of the *Geometric Data Analysis Hub*), Biola University
- 2019-2020 NSF Conference Grant (to support Spring 2020 Data Science and Image Analysis Conference at Washington State University)
- Fall 2017 McDonald Work Award (to support undergraduate research), Gonzaga University
- 2014 - 2015 Project NExT Fellow
- Spring 2014 Faculty Development Council Teaching Development Award, Bowdoin College
- Fall 2013 Faculty Development Council Research Development Award, Bowdoin College
- Fall 2010 - Spring 2011 Selected as Graduate Teaching Assistant Mentor for new GTAs, Colorado State University
- June 2010 Granted Scholarship to attend Gene Golub SIAM Summer School in Italy
- May 2010 Inducted into Phi Kappa Phi
- Summer 2009 Graduate Research Fellowship, Mathematics Department, Colorado State University
- May 2006 Inducted into Omicron Delta Kappa Leadership Society

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## PROGRAMMING SKILLS

Matlab, Latex, Mathematica, Maple, Java, C++, R, Blackboard, Moodle, WeBWork

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## PROFESSIONAL MEMBERSHIPS

MAA, SIAM, YMN, ACMS

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## REFERENCES

**William Barker (Teaching)**

Department of Mathematics  
Bowdoin College  
Brunswick, ME 04011  
✉ barker@bowdoin.edu  
☎ (207) 725-3571

**Matthew Fickus (Research)**

Department of Mathematics & Statistics  
Air Force Institute of Technology  
WPAFB, OH 45433  
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**Chris Peterson (Research and Teaching)**

Department of Mathematics  
Colorado State University  
Fort Collins, CO 80526  
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**Michael Kirby (Research and Teaching)**

Department of Mathematics  
Colorado State University  
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**Dimitris Manolakis (Research)**

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MIT Lincoln Laboratory  
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**Russell Howell (Undergraduate Advisor)**

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