DAVID H. KHALIQI
6985 Monty Place
Colorado Springs, CO 80908
(719) 304-4920
dkhaliqi71@gmail.com

EDUCATION

University of Colorado Colorado Springs
Ph.D. in Educational Leadership, Research, and Policy, December 2014
Dissertation: "What Does the Nation's Report Card Say About Physics First? Using NAEP HSTS 2009 to Examine Inverted Curriculum on Student Algebra Performance"
Dissertation Advisor: Dick Carpenter, Ph.D.
Fields for qualifying exams: Curriculum studies, quantitative analysis using nationally representative data sets, multi-level modeling

M.A. in Geography and Environmental Studies, May 2005
Master's Thesis: "Habitat characteristics affecting nest site selection of the Black Swift (*Cypseloides niger)* in Colorado"

Colorado State University, Fort Collins, CO
B.S. in Biology with secondary teaching license, May 1995

TEACHING AND PROFESSIONAL EXPERIENCE

University of Colorado Colorado Springs

- **Executive Director, Pre-collegiate Support and Success Center, (Spring 2015 to present)**
  Direct a CU system-wide program designed to attract, develop, and retain first-generation students to higher education through career pathway-based concurrent enrollment courses; academic development in math and writing; leadership courses; and STEM workshops. Experience includes (a) oversight of a $490K operational budget; (b) establishing concurrent enrollment agreements with regional school districts to fund student tuition costs for concurrent enrollment courses; (c) design, plan, and teach writing-intensive curricula for academic fitness courses, (d) coordination of programmatic efforts between the CU Denver, Anschutz, and CU Boulder campuses; (e) conducting internal program evaluation and research to

study the program's effects on student matriculation to higher education; and (f) communicating these results to constituents including the CU Associate Vice President for Academic Affairs, the UCCS Chancellor, partner school district superintendents, counselors, and parents.

- **Co-Principle Investigator, National Science Foundation Louis Stokes Colorado Wyoming Alliance for Minority Participation, (Spring 2016 to present)**
  Direct the UCCS campus program in partnership with fifteen other higher education institutions, and four Native American tribes in Colorado and Wyoming. The project seeks to double the number of historically and currently underrepresented American Indian, African American, Native American, Hispanic, Pacific Islander, and Alaska Native students earning bachelor's degrees in science, technology, engineering, and mathematics (STEM). Experience includes (a) oversight of a $160K operational budget; (b) working directly with STEM undergraduate students to provide funding to support student travel to STEM conferences; (c) facilitating paid summer research opportunities for minority STEM undergraduate students; and (d) operating a summer bridge academic preparation course for minority high school students interested in a STEM major.

- **Program Director, Center for Science, Technology, Engineering, and Math (STEM) Education, (Summer 2007 – Fall 2015)**
  Directed a $2.6 million Air Force Office of Scientific Research grant to establish a campus-wide STEM outreach center to attract and retain more students in the science, technology, engineering, and math fields. Experiences included (a) writing and implementing STEM curriculum for academic year and summer STEM camps serving more than 6,000 students; (b) designing, implementing, and teaching STEM professional development workshops for 134 secondary science and math teachers; (c) conducting program evaluation and research to study the intervention effects on student and teacher attitudes toward STEM majors and careers; (d) writing grant and foundation proposals which have secured an additional $1.6 million dollars in external funding for the center to date.

- **Adjunct Instructor, Leadership, Research, and Policy in the College of Education at the University of Colorado Colorado Springs, (Summer 2013 – present)**
  Teach courses in educational research methods, quantitative analysis, technical writing, and alternative licensure teacher preparation.

  Courses Taught:

  Intermediate Quantitative Research and Statistics
  First multivariate statistics class in the PhD program in Educational Leadership, Research, and Policy. Students apply advanced methods of data analysis with an emphasis on OLS regression, structural equation modeling, logistic regression, and multi-level modeling. Students read and analyze a wide variety of quantitative educational research to understand research design and analysis principles.

Masters Research Laboratory in Leadership (hybrid)
Oversee the development, data collection, analysis, and writing of masters level capstone projects in educational research done by graduate students in the leadership, counseling, and student affairs in higher education programs prior to graduation. Redesigned the course to improve student completion rates and levels of support for the project. Innovations included videoconference-based office hours, live streaming of face-to-face class meetings using Facebook's "Live Streaming" app, and utilizing a flipped model of instruction.

Introduction to Research and Statistics (both online and face-to-face)
A mixed-method research course to graduate level students in leadership, counseling, and student affairs in higher education programs. Students apply mixed-methods research principles to conduct an original scholarly research paper.

Secondary Science Methods in the Alternative Licensure Program (hybrid)
A secondary science methods course for the alternative licensure program (ALP) students. Conducted classroom observations and provided formative instruction and feedback on effective inquiry based classroom methods. Designed online instructional materials, discussions, and assignments.

Technical Proposal Writing (co-taught)
An undergraduate course for business and engineering students in researching, writing, and obtaining external funding for project concepts. Served as the writing coach for student teams to review syntax, grammar, and writing tone before submission of proposals to outside funding organizations.

Other Teaching Positions:

Colorado Springs School District 20, Colorado Springs, CO

- **Secondary Science Teacher, The Classical Academy, Colorado Springs, CO, (Fall 1999 – Spring 2007)**
  Taught Physics and Biology, Chemistry, Anatomy and Physiology, Advanced Placement Biology, and Advanced Placement Environmental Science. Experiences included (a) coordinated the Professional Partners Program in which senior students were matched with a professional in the community for an internship experience; (b) designed and implemented curriculum and enrichment opportunities such as the first annual Bio Blitz, an on-campus biodiversity count performed by students partnered with professionals from several natural resource management agencies; (c) served as the science department chair and instructional coach.

Carachipampa International School, Cochabamba, Bolivia

- **Secondary Science Teacher, Carachipampa Middle and High Schools, (Fall 1997 – Summer 1999)**
  Taught eighth through tenth grade science including general science, biology, physics and chemistry. Experiences included: (a) staff sponsor for the service

learning class which culminated in a work project in the Chapare region of the rainforest of Bolivia; (b) coordinated student work teams in cooperation with a sustainable agriculture and alternative fuels project in the region; (c) designed and implemented an eighth grade mountain ecology and geology camp in the Andes.

West Grand School District, Kremmling, CO

- **Secondary Science Teacher, West Grand High School, (Fall 1995 – Spring 1997)**
  Taught ninth grade physical science and basic Algebra. Served on the district technology committee. Taught a remedial math class which built a climbing and traverse wall funded through a community service grant. Taught a vocational education program in natural resource management which performed water quality surveys on the Blue and Colorado Rivers through the Colorado River Watch program.

PEER REVIEWED PUBLICATIONS

- Khaliqi, D., Taylor, J., (under review). What does the nation's report card say about early physics models? Using the NAEP HSTS 2009 to examine inverted curriculum. *Journal of Research on Educational Effectiveness.*
- Khaliqi, D., (under review). Examining the construct validity of the Student Subjective Science Attitude Change Measure. *International Journal of STEM Education.*
- Khaliqi, D. (2016). How common is the Common Core? A Global Analysis of Math Teaching and Learning. *School Science and Math Association*.
- Shaner, S. E., Hooker, P. D., Nickel, A. M., Leichtfuss, A. R., Adams, C. S., Khaliqi, D. (2016). Discovering inexpensive, effective catalysts for solar energy conversion: An authentic research laboratory experience. *Journal of Chemical Education*, *93*(4), 650-657.
- Shockley, P., Christenson, T., Khaliqi, D., (2015). UCCS STEM: Partnerships at the center of success. In *Advancing a jobs driven economy* (pp. 132-136). New York, NY: Morgan James.
- Marle, P. D., Decker, L. L., Taylor, V., Fitzpatrick, K., Khaliqi, D., Owens, J. E., & Henry, R. M. (2014). CSI-chocolate science investigation and the case of the recipe rip-off: Using forensic science to engage students. *Journal of Chemical Education*

Publications in process

- Williquette, H., Khaliqi, D., STEM academic and career identity formation among middle school students.

PRESENTATIONS AND PROFESSIONAL DEVELOPMENT WORKSHOPS

Refereed

- "STEM Academic and Career Identity Formation Among Middle School Students", (2016), With Heather Williquette, Northern Rocky Mountain Educational Research Association, Reno, NV.
- "How Common is the Common Core? A Global Analysis of Math Teaching and Learning", paper session, (2016), Northern Rocky Mountain Educational Research Association, Reno, NV.
- "What Does the Nation's Report Card Say About Physics First? Using NAEP HSTS 2009 to Examine Inverted Curriculum", paper session, *Awarded the AERA Distinguished Paper Award*, (2015), Northern Rocky Mountain Educational Research Association, Boise, ID.
- "Understanding Minority Engineering Student Academic Resilience Using Mixed Method Analysis", poster session, (2013), Mountain Lion Research Day, Colorado Springs, CO.
- "Teachers STEMing out! Lessons Learned From a University and K-12 Educator Collaboration", paper session, (2012), School Science and Mathematics Association Conference, Birmingham, AL.
- "An inquiry into Math Teachers' Circle: Findings from Two Year-Long Cohorts", paper session, (2012), School Science and Mathematics Association Conference, Birmingham, AL.
- "Reforming Science Teacher's Pedagogical Approaches", poster session, (2012), Mountain Lion Research Day, Colorado Springs, CO.
- "Using Scenario Based Learning to Retain Student Interest in STEM", paper session, (2011), School Science and Mathematics Association Conference, Colorado Springs, CO.
- "STEM and Stories Using Problem Based Learning in Informal STEM Education", Paper session, (2010), International STEM Education Conference, Brisbane, Australia.

Invited

- "Growing New Engineers", panel member, (2016), Society of Military Engineers, Colorado Springs, CO.
- "STEMIFY Your Instruction – Using Open-Ended Math Problem Solving", workshop, (2016), Fountain Fort Carson Summer Professional Development Program, Fountain, CO.
- "Paper Circuits – STEM in Language Arts Classes", workshop, (2016), Fountain Fort Carson Teacher Professional Development Series, Fountain, CO.
- "3 Act Math – Strategies For Adding Context to Math Instruction", workshop, (2016), Fountain Fort Carson Teacher Professional Development Series, Fountain, CO.
- "Wildlife Studies In Your Own Backyard", workshop, (2016), Peak Area Leadership Workshop, Fountain, CO.

- “Low Cost STEM In the Classroom”, workshop, (2015), Colorado STEM Summit, Denver, CO.
- “STEMIFY Your Instruction – Using Open-Ended Math Problem Solving”, workshop, (2015), Fountain Fort Carson Summer Professional Development Program, Fountain, CO.
- “Creating Resilience to Pursue STEM”, presentation, (2015), El Pomar Innovation in Community, Colorado Springs, CO.
- “STEMIFY Your Instruction”, workshop, (2014), UCCS Science Educator Academy, Colorado Springs, CO.
- “Creating Resilience to Pursue STEM”, (2014), Emerging Leaders Symposium, Colorado Springs, CO.
- “Creating STEM Resilient Students”, panel, (2012), Educating Children of Color Conference, Colorado Springs, CO.
- “Computer Powered Art”, workshop, (2012), 21st Century Skills Symposium, Colorado Springs, CO.
- “Using an Arduino Microcontroller for More Than You Would Think”, workshop, (2012), Career Technology Educator Conference, Denver, CO.
- “Using Case Studies in the Culturally Diverse Classroom”, workshop, (2011), Culturally Responsive Teaching Symposium, Colorado Springs, CO.
- “The Call for Industry Support of STEM Education”, panel, (2010), Pikes Peak Economic Development Council, Colorado Springs, CO.
- “Robotics On the Cheap”, workshop, (2010), Colorado Science Educators Conference, Denver, CO.

PROFESSIONAL AND COMMUNITY SERVICE

- Article reviewer, (2016), School Science and Math Association
- Proposal reviewer (2016), Northern Rocky Mountain Educational Research Association
- Executive Board Member, (2015-present), Colorado Technology Student Association
- Committee Member, (2016), UCCS Provost Search Committee
- Faculty sponsor, (2015-present), National Society of Black Engineers
- Member (2015-present), Faculty Minority Affairs Committee
- Planning committee member, (2007 – present), Southern Colorado Science Olympiad Tournament Committee
- Planning committee member, (2014 – present), Colorado Springs Mini-Maker Faire Planning Committee
- Committee member, (2015-present), Pikes Peak United Way Cradle to Career Consortium
- Member (2010-2012), College of Engineering Steering Committee
- Member, (2009 – 2014), Colorado STEM Network

GRANTS AND AWARDS

Grants

- **National Science Foundation Louis Stokes Colorado Wyoming Alliance for Minority Participation in STEM Majors (2016 – present)**
  Awarded $160,000 over five years to double the number of historically and currently underrepresented American Indian, African American, Native American, Hispanic, Pacific Islander, and Alaska Native students earning bachelor's degrees in Science, Technology, Engineering, and Mathematics (STEM).
- **American Association of University Women, (2016**)
  Awarded $23,000 to design a cyber security curriculum for middle school girls to engage and interest them in cyber security careers.
- **Army Educational Outreach Program Engineering UNITE, (2012 – present)**
  Awarded $155,000 over five years to design, implement, and facilitate a hands-on engineering camp for first generation students.
- **Department of Defense Educational Association, (2013 – 2016)**
  Sub-awarded $90,000 in partnership with Fountain Fort Carson School District 8 to train students to utilize and design STEM curriculum emphasizing iterative and open-ended problem solving strategies across all grades.
- **Anschutz Foundation, (2011-2013)**
  Awarded $234,000 to support the establishment of academic year STEM clubs and summer STEM camps with schools on Fort Carson. Additionally this funding supported a STEM coordinator position and professional development in the district.
- **Air Force Office of Scientific Research, (2010 – 2013)**
  Awarded $1.2 million to fund the establishment of a STEM outreach center on the UCCS campus.

Awards

- American Educational Research Association Distinguished Paper Award, 2016
- Colorado Distance Learning Association Program of the Year, 2014

PROFESSIONAL AFFILIATIONS

- American Educational Research Association
- Northern Rocky Mountain Educational Research Association
- School Science and Math Association
- Colorado STEM Network
- Pikes Peak United Way Cradle to Career Consortium