

Elisabeth “Beth” Stade
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Current Positions

Instructor University of Colorado Department of Computer Science
Instructor University of Colorado Department of Theater and Dance
Research Associate, CU Center for STEM Learning, investigating visualizations and Art/STEM connections across the CU campus.
Owner/Artist Beth Stade Metal Arts Art and metal fabrication and design.
Consultant Mathematics, Education, and Creative Arts

Recent Projects

2012 - 2016 Geometry Point an outdoor STEM learning exhibit designed to build community and integrate online learning resources with an outdoor exhibit space, including exploring phone-based augmented reality applications for the park.

2011 - 2015 Co-PI/Director of Outreach, "Photo-Origami," an NSF-funded EFRI engineering grant, developing photo-activated polymers.

NSF EFRI Photo Origami REM, Summer Research and Mentoring program for underrepresented groups in engineering and STEM fields. Summer 2016 was our fourth REM program with local high school students.

Photo Origami Outreach and Professional Development workshops with CU Science Discovery. An outgrowth of our REM program, these customizable workshops span material and polymer science, 3D and 4D printing, 3D printer loan program, and engineering technologies for both teacher and students. To date over 10,000 Colorado teachers and students have participated.

Development of interactive mathematical simulations, including the redevelopment of my iPad app, Snow Day Math, as a PhET simulation. This app creates a powerful mathematical model of mathematics, allowing students to explore numbers and fundamental properties without “wrong” answers.

Consultant, PhET Simulations, free interactive online STEM simulations, Boulder Valley School District, and for “Zotebook,” a touch-based drawing program.

Education

M.S. Civil Engineering and Construction Management

University of Colorado, 2000

M.A. Mathematics

University of Colorado, 1995

B.A. Mathematics, with distinction University of Colorado, 1992

Graduate Studies

CU School of Education 1996-1997

Affiliations

CU Center for STEM Learning Fellow 2012- 2016
Rocky Mountain Smiths 2012-2016
Children, Youth and Environment, Research Associate 2010-2016

Awards

Chancellor's Award for STEM Education, 2012
BVSD Superintendent's Green Award, 2011
Lafayette Citizen of the Week, 2005 (for math outreach)
Kettering Award for Community Action, 1998
University Fellowship, 1996
Achievement Rewards for College Scientists, 1993, 1994, 1995
ARC Ramo Scholar, 1994
Brown-Ricketts Fellowship, 1993
Phi Beta Kappa, 1992
Van Ek Award, 1992
Women's Center Award, 1991

Recent and Currently teaching at the University of Colorado

Spring 2019

CSCI 2824 Discrete Structures
TDXD 6901 Implementation of Engineering

Fall 2019

CSCI 2824 Discrete Structures
CSCI 1300 Introduction to programming

Summer 2018

CSCI 2824 Discrete Structures

Spring 2018

MATH 1130 Mathematics from the Visual Arts
CSCI 2824 Discrete Structures

Teaching and Administrative Experience

- Co-director of the MOSAIC Math and Art Festival at CU, April 2016
- Program Director for Summer Photo Origami Research Experience and Mentoring Program 2013-2015.
- Consultant, Boulder Valley School District professional development workshops, training and support, 2005-Present.
- Graduate student supervisor for "Spirit and Uses of Mathematics," 2012-2013.

- Lecturer, CU Libby RAP, "Math from the Visual Arts," 2012, 2014
- Instructor, BVSD Lifelong Learning, 2011
- Lecturer, CU Mathematics Department, 1994-1996, 2000, 2010, 2013
- Lecturer, Farrand Academic Program, University of Colorado, 2009-2010
- Program Coordinator CU Mathematics Outreach, 2007 - Current
- Wizard for ongoing CU Wizards presentation entitled "The Golden Ratio and Fibonacci Numbers"
- Adjunct Faculty, University of Denver Mathematics Department, 1997-1999
- University Facilitator for the NSF State Systemic Initiative, 1994-1996
- Instructor, University of Colorado Academic Skills Program, 1992-1994

Course Development

- Math 1130: Mathematics from the Visual Arts – Curriculum redesign 2012
- Math 1310: Calculus, Systems, and Modeling, 1993-1994, Redesign 2011 with Eric Stade
- Math 1110/1120: Math for Elementary Educators, active learning redesign.
- Visual-Matics, for CU Science Discovery, summer 2013
- Visual Algebra and Kinesthetic Mathematics, summer 2012, BVSD Lifelong Learning

Selected Grant and Project Highlights

Innovation Inclusion Grant from the CU BOLD Center for Art is Engineering, improving retention of underrepresented groups. 2017, 2018

- \$6,000.

CU Outreach grant to explore interventions for High School Algebra

- \$6,000.

Co-PI, NSF EFRI Photo Origami, year research and outreach grant in engineering 2012-2016

- \$2,000,000.

PI, NSF EFRI REM (Research Experience and Mentoring) supplemental awards:

- \$89,000, 2014
- \$100,000, 2015
- \$100,000, 2016

"CU builds the Geometry Park," developing STEM activities in public parks, CU Outreach Award, 2014

- \$13,500.

"Visual-Matics," Art and Math program developed for CU Science Discovery and the Boulder Family Resource Center, Boulder Arts Grant, 2012

- \$3000.

A-7 Renewable Energy Outdoor Classroom, GOCO funded, 2009-2011

- \$120,000.

Renewable Energy Solar Panel Award for High Peaks Elementary 2009

- \$150,000 from Center for Resource Conservation Solar Program Graduate Outreach Team (Outreach Council), PI, 1994-1996.
- Astronomy Resource Center (NASA IDEA Grant), Project Manager, 1995-1996.
- Project Infinity, "Treks in Art and Math" (Boulder Arts Council), PI, 1994, 1995.
- Advisor for biological modeling of AIDS growth, CU Biological Sciences, 1995.
- Development of Calculus and Modeling course, University of Colorado Mathematics Department, 1994-1996, 2009-2010.
- "What Color is Infinity" (American Association of University Women), PI, 1992.

Building and Design Experience

- Project Manager, Geometry Park, Lafayette Colorado, 2015
- Project Manager, "Key to Time," outdoor interactive timeline for Platt Middle School.
- Project Manager, Renewable Energy Outdoor Classroom, 2010
- Vice-Chair of City of Lafayette Zoning Board of Adjustment, 2001-2011
- Independent Building Construction Consultant, 2000-2011
- Community project leader of the 2008 campaign to redesign Lafayette drainageway 2, resulting in the preservation of wetlands and reducing project costs by \$300,000.
- Director, CU Graduate Construction Management Company, 1999-2001
- Traditional building restoration, Clermont L'Herault, France, 1989-1995

Metal Arts

Owner, Beth Stade Metals Arts. Current work on display and for sale at Esty Boulder. Works include sculpture, tables, and light fixtures. 2010-2019

Client include Colorado Department of Transportation, CIG Communications and the Boulder Valley School District

<https://www.facebook.com/bethstademetalarts/>

Other Selected Experience

Bicycle Messenger, London, England
 Circus Performer, Belfast, Ireland,
 Freelance Photographer for the Denver Post, Denver Colorado
 Horse Groom, Grand Prix Show Jumping Circuit, Florida
 Juice Bar Manager, Boulder Colorado
 Boulder Mountain Bike racer, England; France
 Professional Actress, Boulder; Greece
 Road racer, Paddington Cycling Club, London
 Vendage grape harvester and English teacher, France

Languages

Literate and conversational in French.

Products, Media, Links

Media:

2018 Denver Post

<https://www.denverpost.com/2018/05/24/us-34-reopening-guardrail-art/>

2018 Northern Colorado Reporter Herald

http://www.reporterherald.com/news/larimer-county/ci_31898617/artist-beth-stade-turning-big-thompson-guard-rails

2018 CDOT Seatbelt enforcement Campaign (media consultant for this campaign) <https://www.youtube.com/watch?v=xoNTLqjutb8>

2017 Fort Morgan Times

http://www.fortmorgantimes.com/fort-morgan-police/ci_31150210/rural-seat-belt-enforcement-campaign-begins

2017 CDOT

<https://www.codot.gov/news/2017-news/july/rural-seat-belt-enforcement-begins-today>

2016 Boulder Camera and Hometown weekly article

http://www.coloradohometownweekly.com/news/lafayette/ci_29622804/geometry-park-exhibit-lafayettes-romero-park-takes-shape

2016 University “Splash Page” feature and story

<http://www.colorado.edu/news/features/playing-math-geometry-point-lafayette>

2016 Boulder Camera and Hometown weekly article

http://www.coloradohometownweekly.com/news/lafayette/ci_29622804/geometry-park-exhibit-lafayettes-romero-park-takes-shape

2015 Colorado Public Radio

<http://www.colorado.edu/news/features/playing-math-geometry-point-lafayette>

2015 National Public Radio and interview

<http://hereandnow.wbur.org/2015/08/26/photo-origami-summer-camp>

2015 Daily Camera story for the Photo Origami Mentoring Program

http://www.dailycamera.com/boulder-county-schools/ci_28465561/local-students-participate-lab-work-through-cu-boulder

2012 Daily Camera announcement of NSF Photo Origami Grant

http://www.dailycamera.com/ci_21413424/nsf-funds-photo-origami-project-at-cu-boulder

Links to Apps, tutorials, and education resources:

Snow Day Math, iPad app (pilot), Elisabeth Stade (sole author).

<https://itunes.apple.com/us/app/snow-day-math/id568618208?mt=8>

Hensberry, Blanco, McGarry, Paul, Perkins, Stade, (2014) Area Builder Simulation – Phet Simulations, <https://phet.colorado.edu/en/simulation/area-builder>

Beth Stade You Tube channel – links to Snow Day app tutorials

<https://www.youtube.com/channel/UCJVAANgPq4owkeCvBQtv7uw>

PHet app developed with Hensberry, Blanco, McGarry, Paul, and Perkins

<https://phet.colorado.edu/en/simulation/area-builder>

Photo Origami Outreach programs, workshops, and resources.

<http://sciencediscovery.colorado.edu/resources/teacher-resources/engineering-is-everywhere/photo-origami-energy-design-and-change/>

Photobook documentation of the Family Learning Center and CU Boulder Math and Art project.

<http://share.shutterfly.com/action/welcome?sid=0BYt2jRu2csmFb>

NSF REM Facebook page – Developed for all NSF REM program to share resources and photos.

<https://www.facebook.com/EFRI-REM-240760542801789/?ref=bookmarks>

Mathematics from the Visual Arts course page.

<https://www.facebook.com/Math-from-the-Visual-Arts-280778788642908/>

Beth Stade Metal Arts – link to my blacksmithing business.

<https://www.facebook.com/bethstademetalarts/>

Geometry Point – <https://www.facebook.com/Geometry-Point>

Samples of Original Web Content:

<http://www.instructables.com/id/DaVinci-O-Matic/>

<http://www.instructables.com/id/Cardboard-iPad-Cover-With-Zotobook/>

<http://www.instructables.com/id/Elton-John-Glasses/>

Renewable Energy Outdoor Classroom



