

# Candice Price

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## Mathematician and Educator

### RESEARCH INTERESTS

MATH MODELING, KNOT THEORY, DNA TOPOLOGY AND COMPUTATIONAL BIOLOGY

### EDUCATION

#### UNIVERSITY OF IOWA | PHD IN MATHEMATICS

2012 | Iowa City, IA • Advisor: Isabel Darcy

#### SAN FRANCISCO STATE UNIVERSITY | MA IN MATHEMATICS

2007 | San Francisco, CA • Advisor: Mariel Vazquez

#### CALIFORNIA STATE UNIVERSITY, CHICO | BS IN MATHEMATICS

2003 | Chico, CA

### POSITIONS HELD

#### UNIVERSITY OF SAN DIEGO | ASSISTANT PROFESSOR

Sept 2016 – Present | San Diego, CA

- Applied Mathematics for Engineering and Science
- Survey of Calculus
- Calculus I: Single Variable

Jan 17-Present

Jan 17

Aug 16-Dec 16

#### SAM HOUSTON STATE UNIVERSITY | ASSISTANT PROFESSOR

Sept 2015 – May 2016 | Huntsville, TX

- Calculus II: Integral Calculus
- College Mathematics
- Calculus I: Single Variable

Jan 16-May 16

Sept 15-May 16

Sept 15-Dec 15

#### UNITED STATES MILITARY ACADEMY, WEST POINT | ASSISTANT PROFESSOR (TITLE 10)

Jul 13-Jun 15 | West Point, NY

- Introduction to Probability and Statistics
- Integral Calculus and Introduction to Differential Equations
- Foundations: Introduction to Proof Writing
- Differential Calculus
- Mathematical Modeling and Introduction to Calculus

Aug 14-Dec 14

Aug 13-Dec 13

Aug 13-Dec 13

Jan 13-May 13

Aug 12-Dec 12

### PUBLICATIONS

- “Underrepresented Students in Topology and Algebra Research Symposium (USTARS)”  
Notices of the AMS, Vol 64.04, 383-385. Apr 2017
- M. Allocca, J. Graham, C. Price, S. Talbott, J. Vasquez. “Word Length Perturbations in Certain Symmetric Presentations of Dihedral Groups.”  
Discrete Applied Mathematics, Vol 221, 33-45. Apr 2017
- J. Gateway, C. Price. “Utilizing Social Network Analysis to Study Women in Conflict Zones.”  
Journal of Humanistic Mathematics, Vol 7, Issue 1, 3-21 Jan 2017
- “Applications of Knot Theory: Using Knot Theory to Unravel Biochemistry Mysteries.”  
Advances in the Mathematical Sciences: Research from the 2015  
Association for Women in Mathematics Symposium, Vol 6 2016
- “A Biological Application for the Oriented Skein Relation”, PhD Dissertation Aug 2012
- “The Coloring Invariant and Tangles”, Masters Thesis May 2007
- “Coloring Invariant and Determinants” 2003  
<http://www.math.jmu.edu/~taal/OJUPKT/candiceprice.pdf>  
Online Journal of Undergraduate Papers in Knot Theory

## IN SUBMISSION | PAPERS IN SUBMISSION OR ON ARXIV

- H. Brooks, M. Hohn, C. Price, A. Radunskaya, S. Sindi, N. Williams, S. Wilson, N. Fefferman Dec 2017  
"Mathematical analysis of the impact of social structure on ectoparasite load in allogrooming populations"
- G. Jones, C. Price. "DNA Topology Chapter"  
Submitted to an Invited Springer Volume Sept 2017
- I. Darcy, C. Price. "Oriented skein relation and a biological application"  
Submitted to Journal of Knot Theory and Its Ramifications Jun 2017
- E. Insko, B. Kubik., C. Price "Upper broadcast domination of toroidal grids and a classification of diametrical trees"  
Submitted to Discrete Applied Mathematics Oct 2016  
arXiv:1610.05250 [math.CO]

## IN PREPARATION | WORK IN PROGRESS

- "To be Mathematically Gifted and Black"  
joint work with E. Graham, R. Higgins, S. Wilson
- "Knot Floer Homology of Pseudoknots"  
joint work with T. Martin
- "Chromatic Symmetric Functions of Special Types of Graphs"  
joint work with A. Diaz-Lopez, D. Gonzales, A. Green, S. Ivy, R. Orellana, and C. Stanley
- "Contrasting simulation results for parasite vs pathogens on  $\{R,D,C,B\}$ "  
joint work with H. Brooks, N. Fefferman M. Hohn, A. Radunskaya, S.S. Sindi, N. Williams, S. Wilson
- "How Disease Risks Can Impact the Evolution of Social Behaviors and Emergent Population Organization"  
joint work with N. Williams, H. Brooks, M. Hohn, A. Radunskaya, S.S. Sindi, S. Wilson, N. Fefferman

## AWARDS

### GRANTS RECEIVED | EXTERNAL

- Principal Investigator: NSF "Collaborative Research: Directed Reading Program Network" \$74,623  
DUE 1740089 start date Oct. 2017
- Co-Principal Investigator: NSF "Enhancing Diversity in Graduate Education: Research Results From Twenty Years of Empowering Women in Mathematics" DMS 1747396 \$24,263  
PI: Ami Radunskaya, CoPIs: Amy Buchmann, Laurel Ohm, Shanise Walker start date Sept. 2017
- Co-Principal Investigator: NSF "Underrepresented Students in Topology and Algebra Research Symposium (USTARS)" DMS 1717543 \$34,391  
PI: Erik Insko, CoPIs: Syvillia Averett, Gabriel Sosa, Shannon Talbott start date Jan. 2017
- Co-Principal Investigator: NSF "Enhancing the Mathematics and Statistics Component of the 2016 SACNAS Conference" DMS 1643235 \$49,945  
PI: Pamela Harris, CoPIs: Antonia Franco, Dagan Karp, Shannon Talbott start date Aug. 2016
- Principal Investigator: NSF "Underrepresented Students in Topology and Algebra Research Symposium (USTARS)" DMS 1602558 \$35,560  
CoPIs: Syvillia Averett, Garrett Jones, Erik Insko, Shannon Talbott start date Nov. 2015
- Co-Principal Investigator: NSF "Underrepresented Students in Topology and Algebra Research Symposium (USTARS)" DMS 1458396 \$30,000  
PI: Erik Insko, CoPIs: Syvillia Averett, Garrett Jones, Shannon Talbott start date Feb. 2015
- Co-Principal Investigator: NSF "SACNAS Scientific Symposia Sessions in Mathematics" DMS 1419383 \$13,600  
PI: Shannon Talbott, CoPIs: Pamela Harris start date May 2014
- Principal Investigator: NSA Conference Grant Proposal 120904, "Underrepresented Students in Topology and Algebra Research Symposium (USTARS)" \$15,000  
PI: Pamela Harris start date Jan. 2013
- Co-Principal Investigator: NSF "Underrepresented Students in Topology and Algebra Research Symposium (USTARS)" DMS 1317928 \$25,000  
PI: Edray Goins, CoPIs: Alejandra Alvarado, Pamela Harris, Shannon Talbott start date Feb. 2013
- Principal Investigator: NSF "Underrepresented Students in Topology and Algebra Research Symposium (USTARS)" DMS 1053428 \$24,960  
CoPIs: Syvillia Averett, Carlos De la Mora, Erik Insko, Julianna Tymoczko start date Jan. 2011

### GRANTS RECEIVED | INTERNAL

- Superintendent Office of Diversity and Inclusion, “Sonia Kovalesky Day” 2015 \$10,000  
United States Military Academy, West Point NY
- Faculty Development Research Fund “Collaborative Efforts” AY 2015 \$2600  
United States Military Academy, West Point NY
- Photonics Research Center, “Collaborative Research Efforts” AY 2014 \$5443  
United States Military Academy, West Point NY
- Faculty Development Research Fund, “Collaborative Research Efforts” AY 2013 \$1800  
United States Military Academy, West Point NY

## FELLOWSHIPS AND HONORS

- Teaching Inquiry-oriented Mathematics: Establishing Supports (TIMES) ODE Fellow 2017
- Project NExT Fellow 2013
- The National Research Council Davies Fellow Jul 13-Jun 15
- Dr. Janice A Lumpkin Educator of the Year Award Mar 2013
- The Alfred P. Sloan Foundation’s Minority Ph.D. Program Fellow Jun 10-Aug 12
- Vertical Integration of Research and Education (VIGRE) Trainee Aug 10-May 11
- Graduate Assistants in Areas of National Need (GAANN)  
GAANN Fellow Aug 08-Aug 09
- Graduate Assistants in Areas of National Need (GAANN)  
GAANN Fellow Aug 06-Aug 07
- Sally Casanova California Pre-Doctoral Program Scholar Aug 05-Aug 06
- Minority Access to Research Careers (MARC) Honors Program  
MARC Scholar Aug 05-Aug 06
- Louis Stokes Alliance for Minority Participation (LSAMP)  
Masters Bridge to the Doctorate Fellow Aug 04-Aug 06

## SELECTED PRESENTATIONS

### PLENARY ADDRESSES

- “An Application of Knot Theory to Biochemistry”  
Southeastern Undergraduate Mathematics Workshop,  
Georgia Institute of Technology, Atlanta, GA Aug 2017
- “Intersecting Parallel Lines”  
7th Annual S.E.S.H.A.T. STEAMing Towards Social Justice Meeting Apr 2017
- “My ‘Tricky’ Mathematical Journey”  
UW-Eau Claire Sonia Kovalevsky (SK) Day 2014, Eau Claire, WI Mar 2014

### INVITED ADDRESSES

- “Knot Theory”
  - Summer Workshop in Geometry and Topology, Mini-symposium Instructor Aug 2017  
Notre Dame University, South Bend, IN
- “Young, Mathematically Gifted and Black”
  - Mathematical Association of America MathFest; Chicago, IL Jul 2017
  - Math Colloquium, Mount Holyoke College, Amherst, MA Apr 2017
- “A Discussion on the Tangle Model: An Application of Topology”
  - Moravian College Math Department Colloquium, Bethlehem, PA Apr 2014
  - Wheaton College Math Department Colloquium, Norton, MA Mar 2014
- “Application of Knot Theory: Using Knots to Unravel Biochemistry Mysteries”

- Math Department Colloquium, Florida Gulf Coast University; Fort Myers, FL Apr 2017
- Math Department Colloquium, Hobart and William Smith Colleges; Geneva, NY Dec 2016
- “Oriented Skien Relation and a Biological Application”
  - PURE Math Program; Hilo, HI Jun 2014
  - ADVANCE PRiME Summer Speaker Series; Purdue University, West Lafayette, IN Jun 2013
  - Morehouse College Undergraduate Mathematics Colloquium; Atlanta, GA Apr 2013
  - Scranton University Math Biology Colloquium; Scranton, PA Mar 2013
- “Applications of Knot Theory”
  - Scranton University Math Biology Colloquium; Scranton, PA Apr 2014
  - Quinnipiac University Freshman Seminar, Hamden, CT Mar 2014
  - USMA West Point Math Club Seminar, West Point, NY Feb 2014

## ACCEPTED ADDRESSES

- “An Application of Knot Theory to Biochemistry”
  - SIAM Annual Conference; Pittsburgh, PA Jun 2017
- “Application of Knot Theory: Using Knots to Unravel Biochemistry Mysteries”
  - Mathematics Association of America MathFest; Washington DC Aug 2015
- “Application of Knot Theory”
  - AWM Research Symposium; College Park, MD, USA, Apr 2015
- “Oriented Skein Relation and a Biological Application”
  - SIAM Annual Meeting, Workshop on Diversity; Chicago, IL Jul 2014
  - NAM-Gainville Speaker Joint Mathematics Meetings; San Diego, CA Jan 2013
  - Enhancing Diversity in Graduate Education Summer Program Jun 2012
- “A discussion on the combinatorial version of knot Floer homology”
  - Chico Topology Conference; California State University, Chico, Chico, CA Apr 2014

## SERVICE

### DEPARTMENTAL SERVICE

- University of San Diego Department of Mathematics  
Faculty Research Seminar Co-Organizer AY 2016-2017
- University of San Diego Department of Mathematics  
Senior Thesis Advisor
- “The Role of Financial Aid on Economic Crime at the University of San Diego”  
Timothy Berend and Gregory Dreyfus 2016-2017
- Sam Houston State University Math Department  
Graduate Teaching Seminar  
Co-Organizer Spring 2016
- USMA West Point Math Department  
Topology and Algebra Research Seminar  
Co-Organizer 2013-2015
- USMA West Point Math Department  
Math Competitions Committee Member 2012-2015
- University of Iowa Mathematics Graduate Board  
Vice President and Newsletter Co-Chair 2007-2009

## UNIVERSITY SERVICE

University of San Diego Faculty Co-Advisor for an Undergraduate Research group: "Aqua Squad"	2016-present
University of San Diego Co-Advisor for Students of Color in STEM(M)	2016-present
United States Military Academy, West Point ROCKS Mathematical Sciences Department Liaison	2014
United States Military Academy Women's Army Rugby Team Officer Representative	2012-2015

## STEM COMMUNITY SERVICE

SIAM Annual Conference A Mathematical View of the Different Biological Scales: From the genomic level to the human interaction level Organizer	Jun 2017
AWM Research Symposium EDGEy Mathematics: A Tribute to Dr. Sylvia Bozeman and Dr. Rhonda Hughes Co-Organizer	Apr 2017
SIGMAA-IBL Executive Board Coordinator for Outreach and Advocacy	Mar 2017-Present
Co-Creator of "www.mathematicallygiftedandblack.com"	Feb 2017
Career and Mentoring Workshop (CaMeW) Mentor	Jun 2016
Joint Mathematics Meeting Early Career Female Mathematicians in Algebra and Topology Session Co-Organizer	2015-2017
Mathematical Association of America Membership Committee	2015-Present
Association of Women Mathematicians MathFest Organizing Committee	2015-Present
Sam Houston State University presents Operation Math Girls Co-Organizer	2015
Infinite Possibilities Conference Steering Committee Member: Program Committee	Fall 2014
United States Military Academy, West Point Sonia Kovalevsky Day Organizing Committee	Fall 2014
Joint Mathematics Meeting Pure and Applied Talks by Women Math Warriors presented by EDGE Session Co-Organizer	2014-Present
Enhancing Diversity in Graduate Education (EDGE) Summer Program Mentor to Graduate Students	2012-Present
Underrepresented Students in Topology and Algebra Research Symposium (USTARS) Co-Founder and Organizing Committee Member	2010-Present
SIAM's Moody Mega Math Challenge Judge	2010-Present

# INVITED PARTICIPATION

## PANELS

- Career Panel, Southeastern Undergraduate Mathematics Workshop  
Georgia Tech University, Atlanta, GA Aug 7, 2017
- No longer Hidden Figures: Women mathematicians share their path to the profession  
MAA MathFest, Chicago IL Jul 28, 2017
- SIAM's Professional Development Evening Panel II: Networking for Success: Establishing Connections  
Within Your Professional Community  
SIAM Annual Meeting, Pittsburgh, PA Jul 13, 2017
- Black Again Forum, University of San Diego, San Diego, CA, Feb 21, 2017
- Getting into Graduate School  
Graduate Research Opportunities for Women,  
Northwestern University, Evanston, IL Oct 16, 2016

## WORKSHOPS

- The Geometry and Topology of Knotting and Entanglement in Proteins,  
Banff International Research Station, Oaxaca, Mexico Nov 5-10, 2017
- Geometry of Redistricting Summer School, Expert Witness Track  
Tufts University, Boston, MA Aug 7-11, 2017
- re:boot Number Theory 2017  
Duke University, Durham, NC Jun 1-3, 2017
- Women Advancing Mathematical Biology: Understanding Complex Systems with Mathematics  
Mathematical Biology Institute, Columbus, OH Apr 24-28, 2017
- Gender Imbalances Summit Meeting, Northwestern University  
Evanston, IL Oct 13-14, 2017
- Entanglement in Biology; How nature controls the topology of proteins and DNA,  
Banff International Research Station, Banff, Canada Nov 17-22, 2013

## ASSOCIATIONS

- Alpha Phi Omega, Eta Psi Chapter
- Society for Industrial and Applied Mathematics
- Association for Women in Mathematics
- Mathematical Association of America