EMILY WHITING

EDUCATION HISTORY
Ph.D. 2012  Massachusetts Institute of Technology
           Computer Graphics & Building Technology
           Thesis Advisors: Prof. John Ochsendorf, Prof. Frédéric Durand
               MIT Presidential Fellow
S.M. 2006  Massachusetts Institute of Technology
           Design & Computation, Department of Architecture
           Thesis Advisors: Prof. Seth Teller, Prof. Takehiko Nagakura
               Awarded Thesis Prize
B.A.Sc. 2004  University of Toronto
           Engineering Science (with Honors), Faculty of Applied Science and Engineering
           Thesis Advisors: Dr. Sabry El-Hakim, Prof. Demetri Terzopoulos

ACADEMIC POSITIONS
2021 – present  Boston University, Associate Professor of Computer Science
2017 – 2021  Boston University, Assistant Professor of Computer Science
               Innovation Career Development Professorship
2017 – 2021  Dartmouth College, Adjunct Assistant Professor of Computer Science
2014 – 2017  Dartmouth College, Assistant Professor of Computer Science
2011 – 2014  ETH Zurich, Postdoctoral Fellow, Institute of Visual Computing, Interactive Geometry Lab
               ETH Zurich/Marie Curie Cofund Fellow

HONORS & AWARDS
2021  NSF CAREER Award
2020  Best Paper Honorable Mention, ACM CHI 2020
2020  Best Paper, 8th Intl. Conference on Culture & Computing
2019 – 2021  Sloan Research Fellow, Alfred P. Sloan Foundation
2017 – 2020  Innovation Career Development Professor, Boston University
2012 – 2014  ETH Zurich Postdoctoral Fellowship / Marie Curie COFUND Program
2008 – 2010  Doctoral Scholarship, Natural Sciences & Engineering Research Council of Canada (NSERC)
2007  Best Paper Presentation, Computer Aided Architectural Design (CAAD) Futures
2006  MIT Ph.D. Presidential Fellowship
2006  Master’s Thesis Prize, MIT Department of Architecture
2004 – 2006  Graduate Fellowship, MIT Department of Architecture
2001 – 2004  Women in Engineering and Science Scholarship, National Research Council of Canada

GRANTS & OTHER FUNDING
2021 – 2026  National Science Foundation (NSF), $516,782
               CAREER: Geometry and Mechanics of Textile-Based Structural Design
               Sole PI. Award #2047342.
2020 – 2023  Department of Defense, U.S. Army CCDC Soldier Center. $360,000  
*Design of Helmet Pad Structures using Autonomous Experimental Research*  
Co-PI with Keith Brown.

2019 – 2021  Sloan Research Fellowship. $70,000

2018 – 2021  National Science Foundation (NSF). $498,431 ($166,600 awarded to BU)  
*Robust Intelligence (RI): Small: Collaborative Research: Computational Joinery*  
Co-PI with Devin Balkcom, Weifu Wang. Award #1813319.

2018 – 2020  BU Hariri Institute Research Incubation Award. $50,494  
*Data-Driven Design of Tough 3D Printed Structures*  
Lead PI with Co-PIs Keith Brown, Elise Morgan.

2017 – 2020  BU Innovation Career Development Professorship. $107,511

2015 – 2018  National Science Foundation (NSF): Research Initiation Initiative (CRII). $174,999  
*Cyber-Human Systems (CH3): Structurally-Aware Computation for Geometry Acquisition and Design*  
Sole PI.  Award #1755767

2016 – 2017  Adobe Systems Gift. $58,900

2016 – 2017  Dartmouth Neukom Institute: CompX Faculty Grant. $15,000  
*Computational Design of Deployable Structures*  
Co-PI with Devin Balkcom.

**PROFESSIONAL PREPARATION**

2010 Summer  R&D Intern  Lucasfilm Industrial Light & Magic, San Francisco, USA

2008 – 2011  Research Assistant  MIT, Department of Computer Science, Cambridge, USA  
Computer Graphics Group

2007 – 2008  Teaching Assistant  MIT, Cambridge, USA  
Courses: Basic Structural Design, Introduction to Computer Graphics

2006 – 2007  Research Assistant  MIT, Department of Architecture, Cambridge, USA  
*MIT Presidential Fellowship*

2004 – 2006  Research Assistant  MIT, Department of Computer Science, Cambridge, USA  
Robotics, Vision & Sensor Networks Group

2002 – 2003  Junior Designer  Yolles Partnership Inc., Toronto, Canada  
Structural Engineering Division

2001 – 2004  Research Intern Summers  National Research Council of Canada, Ottawa, Canada  
Visual Information Technology Group  
*Women in Engineering and Science Fellow*

**PUBLICATIONS**

Shape Lab: shape.bu.edu/publications  
Google Scholar: scholar.google.com/citations?user=_TU9kGYAAAAJ&hl=en

**Papers**

[1]  Knitting 4D Garments with Elasticity Controlled for Body Motion  
Z. Liu, X. Han, Y. Zhang, X. Chen, Y. Lai, E.L. Doubrovski, E. Whiting, C.C.L. Wang  
ACM Transactions on Graphics, 2021 (ACM SIGGRAPH 2021 Issue)

[2]  Augmented Reality for Sculpture Stability Analysis and Conservation  
D. Henneman, Y. Li, J. Ochsendorf, M. Betke, and E. Whiting  
Eurographics Workshop on Graphics and Cultural Heritage 2020

[3]  Tactile Line Drawings for Improved Shape Understanding in Blind and Visually Impaired Users  
A. Panotopoulou, X. Zhang, T. Qiu, X.-D. Yang, and E. Whiting  
ACM Transactions on Graphics, 2020 (ACM SIGGRAPH 2020 Issue)
[4] PuzzleFlex: Kinematic Motion of Chains with Loose Joints
S. Lensgraf, K. Itani, Y. Zhang, Z. Sun, Y. Wu, A.Q. Li, B. Zhu, E. Whiting, W. Wang and D. Balkcom.
Intl Conference on Robotics and Automation (ICRA), 2020

[5] TangibleCircuits: An Interactive 3D Printed Circuit Education Tool for People with Visual Impairments
J.U. Davis, T.-Y. Wu, B. Shi, H. Lui, A. Panotopoulou, E. Whiting, and X.-D. Yang.
ACM CHI Conference on Human Factors in Computing Systems (CHI), 2020
Awarded Best Paper Honorable Mention at CHI 2020 (top 5% of submissions)

[6] Computational Design of Fabric Formwork
X. Zhang, G. Fang, M. Skouras, G. Gieseler, C.C.L. Wang and E. Whiting.
ACM Transactions on Graphics, 2019 (ACM SIGGRAPH 2019 Issue)

[7] Watercolor Woodblock Printing with Image Analysis
A. Panotopoulou, S. Paris and E. Whiting.
Computer Graphics Forum, 2018 (Eurographics 2018 Issue)

[8] Assembling and Disassembling Planar Structures with Divisible and Atomic Components
Y. Zhang, E. Whiting and D. Balkcom.
IEEE Transactions on Automation Science and Engineering, 2018

[9] Thermal-Comfort Design of Personalized Casts
X. Zhang, G. Fang, C. Dai, J. Verlinden, J. Wu, E. Whiting and C.C.L. Wang.
ACM Symposium on User Interface Software and Technology (UIST), 2017

[10] Environment-Scale Fabrication: Replicating Outdoor Climbing Experiences
E. Whiting, N. Ouf, L. Makatura, C. Mousas, Z. Shu and L. Kavan.
ACM CHI Conference on Human Factors in Computing Systems (CHI), 2017

[11] Spin-It: Optimizing Moment of Inertia for Spinnable Objects
M. Bächer, B. Bickel, E. Whiting, and O. Sorkine-Hornung.
Communications of the ACM: Research Highlights, August 2017 (Reprint of SIGGRAPH 2014 article,
with foreword: “Technical perspective: Linking form, function, and fabrication” by H. Pottmann)

[12] Assembling and Disassembling Planar Structures with Divisible and Atomic Components
Y. Zhang, E. Whiting and D. Balkcom.
Algorithmic Foundations of Robotics (WAFR), 2016

[13] Printone: Interactive Resonance Simulation for Free-form Print-wind Instrument Design
N. Umetani, A. Panotopoulou, R. Schmidt and E. Whiting.
ACM Transactions on Graphics, 2016 (ACM SIGGRAPH Asia 2016 Issue)

[14] Data-Driven Bending Elasticity Design by Shell Thickness
X. Zhang, X. Le, Z. Wu, E. Whiting and C.C.L. Wang.
Computer Graphics Forum, 2016 (Eurographics Symposium on Geometry Processing 2016 Issue)

[15] Buoyancy Optimization for Computational Fabrication
L. Wang and E. Whiting.
Computer Graphics Forum, 2016 (Eurographics 2016 Issue)

[16] Foldlings: A Tool for Interactive Pop-Up Card Design
N. Harquail, M. Allen and E. Whiting.
Eurographics Workshop on Graphics for Digital Fabrication, 2016

[17] Perceptual Models of Preference in 3D Printing Orientation
X. Zhang, X. Le, A. Panotopoulou, E. Whiting and C.C.L. Wang.
ACM Transactions on Graphics, 2015 (ACM SIGGRAPH Asia 2015 Issue)

[18] A 3-D Stability Analysis of Lee Harvey Oswald in the Backyard Photo
S. Pittala, E. Whiting and H. Farid.
Journal of Digital Forensics, Security and Law, 2015
[19] Assembling Self-Supporting Structures  
M. Deuss, D. Panozzo, E. Whiting, Y. Liu, O. Sorkine-Hornung and M. Pauly.  
ACM Transactions on Graphics, 2014 (ACM SIGGRAPH Asia 2014 Issue)

[20] Spin-It: Optimizing Moment of Inertia for Spinnable Objects  
M. Baecher, E. Whiting, B. Bickel and O. Sorkine-Hornung.  
ACM Transactions on Graphics, 2014 (ACM SIGGRAPH 2014 Issue)

[21] A Graph-based Approach for Discovery of Stable Deconstruction Sequences  
L. Beyeler, J.-C. Bazin and E. Whiting.  
Advances in Architectural Geometry, 2014

[22] Make It Stand: Balancing Shapes for 3D Fabrication  
R. Prévost, E. Whiting, S. Lefebvre and O. Sorkine-Hornung.  
ACM Transactions on Graphics, 2013 (ACM SIGGRAPH 2013 Issue)

[23] Structural Optimization of 3D Masonry Buildings  
E. Whiting, H. Shin, R. Wang, J. Ochsendorf and F. Durand.  
ACM Transactions on Graphics, 2012 (ACM SIGGRAPH Asia 2012 Issue)

[24] Procedural Modeling of Structurally-Sound Masonry Buildings  
E. Whiting, J. Ochsendorf and F. Durand.  
ACM Transactions on Graphics, 2009 (ACM SIGGRAPH Asia 2009 Issue)

[25] Detailed 3D Modeling of Castles  
S. El-Hakim, L. Gonzo, F. Voltolini, S. Girardi, A. Rizzi, F. Remondino and E. Whiting.  
Intl. Journal of Architectural Computing (IJAC), 2007

[26] Topology of Urban Environments  
E. Whiting, J. Battat and S. Teller.  
Computer-Aided Architectural Design (CAAD) Futures, 2007  
**Awarded Best Paper Presentation at CAAD Futures 2007**

[27] Constrained Planar Remeshing for Architecture  
B. Cutler and E. Whiting.  
Graphics Interface, 2007

[28] 3D Modeling with Reusable and Integrated Building Blocks  
S. El-Hakim, E. Whiting and L. Gonzo.  
Optical 3D Measurement Techniques, 2005

[29] A Hierarchical 3D Reconstruction Approach for Documenting Complex Heritage Sites  
S. El-Hakim, J.-A. Beraldin, L. Gonzo, E. Whiting and M. Jemtrud.  
CIPA Intl Symposium, ICOSMOS & ISPRS Committee on Documentation of Cultural Heritage, 2005

[30] Digital Recording of Aboriginal Rock Art  
S. El-Hakim, J. Fryer, M. Picard and E. Whiting.  
Virtual Systems and Multimedia (VSMM), 2004

[31] Photo-Realistic 3D Reconstruction of Castles with Multiple Sources Image-Based Techniques  
L. Gonzo, S. El-Hakim, M. Picard, S. Girardi and E. Whiting.  
Congress Intl Society for Photogrammetry & Remote Sensing (ISPRS), 2004

**Courses**

[32] 3D Printing Oriented Design: Geometry and Optimization  
L. Liu, C.C.L. Wang, A. Shamir and E. Whiting.  
ACM SIGGRAPH Asia, Invited Course, 2014

**Refereed Abstracts, Posters & Videos**

[33] 3D Virtual Reconstruction and Sound Simulation of an Ancient Roman Brass Musical Instrument  
Z. Sun, A. Rodà, E. Whiting, E. Faresin, and G. Salemi.
Awarded Best Paper of 8th Intl. Conference on Culture & Computing

[34] Computational Design of Fabric Formwork
X. Zhang, G. Fang, M. Skouras, G. Gieseler, C.C.L. Wang and E. Whiting.
ACM SIGGRAPH, Poster program, 2019 (Invited from Technical Papers track)

[35] Computational Design of Fabric Formwork
X. Zhang, G. Fang, M. Skouras, G. Gieseler, C.C.L. Wang and E. Whiting.
ACM Symposium on Computational Fabrication, Poster session, 2019

[36] Watercolor Woodblock Printing with Image Analysis
A. Panotopoulou, S. Paris and E. Whiting.
ACM Symposium on Computational Fabrication, Poster session, 2018.

[37] Perceptual Models of Preference in 3D Printing Orientation
X. Zhang, X. Le, A. Panotopoulou, E. Whiting and C. Wang.
Symposium on Computational Fabrication, Poster session, 2016

[38] Digital Reconstruction and 4D Presentation through Time
S. El-Hakim, J.F. Lapointe and E. Whiting.
ACM SIGGRAPH Technical Sketches, 2008

[39] Constrained Planar Remeshing for Architecture
B. Cutler and E. Whiting.
Eurographics Symposium on Geometry Processing (SGP), Poster session, 2006

[40] PORTALS
Directors: S. El-Hakim and M. Picard. Contributed 3D scene modeling.
ACM SIGGRAPH Video Review Issue 143, Animation Theater Program, 2002

Other Media
[41] The Metopes of Selinunte
Directors: V. Valzano, A. Bandiera and J.A. Beraldin. Contributed 3D animation.
CD-ROM. Coordinamento SIBA, University of Lecce, 2006 (e-Science Award Italy)

Theses
[42] Design of Structurally Sound Masonry Buildings Using 3D Static Analysis
Advisors: John Ochsendorf, Frédo Durand. Ph.D. Thesis, Massachusetts Institute of Technology, 2011

[43] Geometric, Topological & Semantic Analysis of Multi-Building Floor Plan Data
Advisors: Seth Teller, Takehiko Nagakura. S.M. Thesis, Massachusetts Institute of Technology, 2006

[44] Realism in 3D Virtual Spaces: Improving Texture Quality in Image-Based Modeling Systems through Application of High Dynamic Range Imagery
Advisors: Sabry El-Hakim, Demetri Terzopoulos. B.A.Sc. Thesis, University of Toronto, 2002

INVITED SPEAKING EVENTS

Keynotes & Invited Talks: Conferences & Symposia
2019 Aug 3D Printing Symposium. Hosted at Dartmouth College, Hanover, NH, USA. Invited Speaker.
2019 June International Conference on Geometric Modeling and Processing (GMP). Hosted at Simon Fraser University, Vancouver, Canada. Keynote Speaker.
2019 April New England Symposium on Graphics. Hosted at MIT, Cambridge, MA, USA. Invited Speaker.
2019 March American Physical Society (APS) March Meeting. Boston, MA, USA. Session: Discrete Structures: Geometry, Mechanics, Graphics, and Computation I. Invited Speaker.
2018 May Graphics Interface International Conference. Hosted at York University, Toronto, Canada. Invited Speaker.
2014 Nov TEDxBeaconStreet, “3D Printing: the Physics of Objects.” Invited Speaker. 
https://tedxbeaconstreet.com/speakers/emily-whiting/

Workshops, Colloquia, Seminars & Other Events
2020 Feb Autodesk Technology Center Spotlight Series, Boston, MA, USA. Invited Speaker. 
https://vimeo.com/394452785

2019 Dec MIT Media Lab, Cambridge, MA. Women’s Lunch Series: Invited Speaker.
2019 Dec University of Massachusetts Amherst, College of Information and Computer Sciences.
2019 July AI4ALL Summer Program, Boston University, USA. Invited Speaker.
2019 July New Balance Innovation Studio. Lawrence, MA. Invited Presentation.
2019 April Association for Women in Mathematics (AWM) Research Symposium. Hosted at Rice University, Houston, Texas. Invited Workshop Speaker: Women in Shape Modeling Session.
2018 Dec Tertulia: Junior Faculty Colloquium, BU College of Arts & Science. Invited Speaker.
2018 Dec Computational Fabrication course, EECS Department, MIT. Guest Lecturer.
2018 May Fields Institute, Workshop on Robust Geometric Algorithms for Computational Fabrication. Toronto, Canada. Invited attendee and speaker.
2017 Dec WPI Computer Science Colloquium. Worcester, MA, USA. Invited Speaker.
2017 Oct McGill University, Computer Science Colloquium. Montreal, Canada. Invited Speaker.
2017 Oct Tufts University, Electrical and Computer Engineering Seminar Series, co-sponsored by IEEE Education Society. Invited Speaker.
2017 Oct MIT, Computer Graphics Group Annual Retreat. Invited attendee and speaker.
2017 Sept Boston University, CS Day: Research Highlights Session. Invited Speaker.
2017 April Tufts University, Computer Science Colloquium. Invited Speaker.
2016 Sept MIT, Computer Graphics Group Seminar. Invited Speaker.
2016 May 1st Eurographics Workshop on Graphics for Digital Fabrication. Lisbon, Portugal. Invited Expert Panelist.
2015 Nov Mount Holyoke College, Computer Science Seminar. Invited Speaker.
2015 Feb MIT Department of Architecture, Building Technology Lecture Series. Invited Speaker.
2014 Dec Hong Kong University, Computer Graphics Group Seminar Series. Invited Speaker.
2014 Dec SIGGRAPH Asia, Course: “3D Printing Oriented Design: Geometry & Fabrication.” Invited Course Instructor, “Structural aspects of geometry design.” Shenzhen, China.
2014 Dec Chinese University of Hong Kong, Department of Mechanical and Automation Engineering, Seminar Series. Invited Speaker.
2014 Nov Wellesley College, Computer Science Department, Seminar Series. Invited Speaker.
2014 Oct MIT, Computer Graphics Group Annual Retreat. Invited attendee and speaker.
2014 Sept Schloss Dagstuhl Seminar: Computational Aspects of Fabrication. Wadern, Germany. Invited attendee and speaker.
2013 June 3D Fabrication Summer School, UCL, Center for Virtual Environments, Imaging & Visualization. London, UK. Invited Speaker.
2012 June Autodesk Research. Toronto, Canada. Invited Talk.
2011 March PBS NOVA. "The Secret Life of Scientists & Engineers". Featured Scientist, Season 2011, Episode 39. http://www.pbs.org/video/secret-life-of-scientists-emily-whiting-architectural-engineer/
2010 Aug R&D Group, Industrial Light & Magic, Lucasfilm Ltd. San Francisco, USA. Invited Talk.
2009 Nov INRIA Grenoble – Rhône-Alpes Research Center. Montbonnot, France. Invited Talk.
2008 April American Academy in Rome. New York, USA. Invited Speaker & Panelist.
COURSES TAUGHT

**Boston University, Department of Computer Science**
- 2020 Fall: Childbirth Leave
- 2020 Spring: CAS CS 581: Computational Fabrication
- 2019 Fall: CAS CS 480/680: Introduction to Computer Graphics
- 2019 Spring: CAS CS 581: Computational Fabrication
- 2018 Fall: CAS CS 480/680: Introduction to Computer Graphics
- 2018 Spring: CAS CS 591: Computational Fabrication

**Dartmouth College, Department of Computer Science**
- 2017 Spring: Maternity Leave
- 2017 Winter: Maternity Leave
- 2016 Fall: COSC 89/189: Computational Fabrication
- 2016 Spring: COSC 89/189: Computational Fabrication
- 2016 Winter: COSC 98: Senior Design & Implementation Project
- 2015 Fall: COSC 77/177: Computer Graphics
- 2015 Spring: COSC 77/177: Computer Graphics
- 2014 Fall: COSC 89/189: Computational Fabrication

**ETH Zurich, Department of Computer Science**
- 2012 Fall: Seminar, Advanced Topics in Computer Graphics and Vision (Teaching Assistant)
- 2012 Spring: Shape Modeling and Geometry Processing (Guest Lecturer)

**MIT, Department of Architecture**
- 2008 Spring: 4.440/4.462 Basic Structural Design (Teaching Assistant)

**MIT, Department of Computer Science**
- 2007 Fall: 6.837 Introduction to Computer Graphics (Teaching Assistant)

PROFESSIONAL SERVICE

**Conference Chair**
- 2021: ACM Symposium on Computational Fabrication 2021, General Chair
- 2020: ACM Symposium on Computational Fabrication 2020, General Chair
- 2018: ACM Symposium on Computational Fabrication 2018, Technical Program Co-Chair

**Program Committees**
- 2021: ACM UIST’21 Program Committee
- 2020: ACM SIGGRAPH’20 Conflict of Interest Coordinator, Symposium on Solid and Physical Modeling (SPM) 2020 Technical Program Committee, Graphics Interface (GI) 2020 International Program Committee
- 2019: ACM SIGGRAPH’19 Technical Papers Committee, ACM UIST’19 Program Committee
- 2018: ACM SIGGRAPH’18 Technical Papers Committee, Advances in Architectural Geometry Papers Committee
- 2017: Eurographics International Program Committee
- 2016: ACM SIGGRAPH Asia’16 Technical Papers Committee, Symposium on Solid and Physical Modeling Program Committee, Eurographics Workshop on Graphics for Digital Fabrication Intl Program Committee, Advances in Architectural Geometry Papers Committee
- 2015: ACM SIGGRAPH’15 Technical Papers Committee, Pacific Graphics International Program Committee
| Year   | Position                                                                 | Details                                                                 |
|--------|--------------------------------------------------------------------------|-------------------------------------------------------------------------|
| 2014   | ACM SIGGRAPH Asia Courses Committee                                      | Graphics Interface Program Committee                                    |
|        | ACM SIGGRAPH General Submissions Committee                               | Advances in Architectural Geometry Papers Committee                      |
|        | ACM SIGGRAPH Asia Courses Committee                                      | Pacific Graphics International Program Committee                         |
| 2013   | ACM SIGGRAPH General Submissions Committee                               | Pacific Graphics International Program Committee                         |

**Editorial Positions**

| Year   | Role                                                                 | Details                                                                 |
|--------|----------------------------------------------------------------------|-------------------------------------------------------------------------|
| 2018–2021 | ACM Transactions on Graphics (ToG), Associate Editor         |                                                                        |
| 2021   | Computers & Graphics: Special Issue on Computational Fabrication, Guest Editor |                                                                        |
| 2014–2016 | The Visual Computer: International Journal of Computer Graphics, Associate Editor |                                                                        |

**Judging Panels**

| Year   | Event                                                                 | Details                                                                 |
|--------|----------------------------------------------------------------------|-------------------------------------------------------------------------|
| 2016 Oct | Dartmouth Thayer School: Visionaries in Technology, Student Poster Competition, Faculty Judge |                                                                        |
| 2015 Oct | ACM Student Research Competition, Grace Hopper Conference, Jury. Houston, TX, USA |                                                                        |
| 2015 Oct | HackDartmouth, Judging Panel. Hanover, NH, USA                        |                                                                        |
| 2013 July | ACM Student Research Competition, SIGGRAPH, Jury. Anaheim, CA, USA      |                                                                        |

**Technical Papers Reviewer**

ACM SIGGRAPH, ACM SIGGRAPH Asia, ACM Transactions on Graphics, ACM UIST, ACM CHI, Computer Graphics Forum, Eurographics, Transactions on Visualization and Computer Graphics

**UNIVERSITY SERVICE**

**Boston University**

| Year   | Role                                                                 | Details                                                                 |
|--------|----------------------------------------------------------------------|-------------------------------------------------------------------------|
| 2020–2021 | BU Arts Council, Office of the Provost                             |                                                                        |
| 2019–2020 | Faculty Search Committee, Department of Computer Science         |                                                                        |
| 2018–2019 | Faculty Search Committee, Department of Computer Science       |                                                                        |
| 2017–2018 | PhD Admissions Committee, Department of Computer Science     |                                                                        |

**Dartmouth College**

| Year   | Role                                                                 | Details                                                                 |
|--------|----------------------------------------------------------------------|-------------------------------------------------------------------------|
| 2016–2017 | Organizing Committee: Grace Hopper Celebration, Dartmouth CS Dept student group | Schematic Design Committee & CS Committee: Thayer/Computer Science Building Project |
| 2015–2016 | Organizing Committee: Grace Hopper Celebration, Dartmouth CS Dept student group | Schematic Design Committee & CS Committee: Thayer/Computer Science Building Project |
|        | MS Digital Arts Admissions Committee                              |                                                                        |
| 2014–2015 | PhD Admissions Committee, Department of Computer Science   |                                                                        |
|        | MS Digital Arts Admissions Committee                              |                                                                        |
|        | Curriculum Committee, Department of Computer Science           |                                                                        |
|        | Co-Founded 2-year MS program: Computer Science with a Concentration in Digital Arts |                                                                        |

**SELECT PRESS**

| Year   | Title                                                                 | Details                                                                 |
|--------|----------------------------------------------------------------------|-------------------------------------------------------------------------|
| 2019 Aug | The Brink. “Fabric Gives Form to a New DIY Manufacturing Method”   | [https://www.bu.edu/articles/2019/fabric-formwork-technology/]           |
| 2019 July | Tech Xplore. “PuzzleFlex: Computing the kinematic motion of systems with loose joints” | [https://techxplore.com/news/2019-07-puzzleflex-kinematic-motion-loose-joints.html] |
| 2019 Feb | The Brink. “Q&A with Emily Whiting”                                 | [http://www.bu.edu/articles/2019/emily-whiting-awarded-sloan-research-fellowship/] |
| 2018 May | BU Today. “Taking the Pain out of Painting.”                        | [https://www.bu.edu/research/articles/shape-lab-watercolor/]             |
| 2018 April | Outside. “How Two Scientists Will Build Mountains.”                 | [https://www.outsideonline.com/2269356/how-two-scientists-will-build-mountains] |
2017 Nov 3DPrint.com. “Researchers Take Patient Heat Sensitivity Into Account When Developing 3D Printable Orthopedic Cast.” https://3dprint.com/192877/3d-printed-cast-thermal-comfort/
2017 June U.S. News & World Report. “System aims to recreate challenging mountain climbs in gym.” https://www.usnews.com/news/best-states/utah/articles/2017-06-04/system-aims-to-recreate-challenging-mountain-climbs-in-gym
2017 May TechCrunch. “New system can recreate natural rock-climbing walls indoors.” https://techcrunch.com/2017/05/09/new-system-can-recreate-natural-rock-climbing-walls-indoors/
2017 May CNN. “3D modeling lets rock climbers replicate real mountains -- in the gym.” http://money.cnn.com/2017/05/09/technology/3d-modeling-rock-climbing
2016 Dec New Atlas. “3D-printing software reshapres musical instrument design.” http://newatlas.com/printone-free-form-wind-instruments/
2016 Dec 3Ders. “New 'Printone' design tool lets you 3D print wind instruments in crazy shapes.” http://www.3ders.org/articles/20161206-new-printone-design-tool-lets-you-3d-print-wind-instruments-in-crazy-shapes.html
2015 Oct BBC Radio: In Short (interview). “Was controversial Lee Harvey Oswald photo faked?” http://www.bbc.co.uk/programmes/p035sqvx
2015 Oct Discovery News. “Oswald Photo Isn't Fake, Finds Digital Forensics.” http://www.seeker.com/oswald-photo-isnt-fake-finds-digital-forensics-1770368711.html
2015 May Dartmouth Now. “Creativity, Cathedrals, and Collaboration in Computer Science.” https://news.dartmouth.edu/news/2015/05/creativity-cathedrals-and-collaboration-computer-science
2014 Aug TechCrunch. “Disney Conquers Physics, Uses 3D Printing To Create Impossible Spinning Tops.” https://techcrunch.com/2014/08/08/disney-conquers-physics-uses-3d-printing-to-create-impossible-spinning-tops/
2014 Aug Engadget. “Disney has created an algorithm that can turn almost anything into a spinning top.” https://www.engadget.com/2014/08/09/disney-tops/
2013 July MIT Technology Review: Computing News. In Article: “The Future of Graphics and Gaming.” https://www.technologyreview.com/s/517461/the-future-of-graphics-and-gaming/

RESEARCH ADVISING
Founder and director of the BU Shape Lab, Fall 2017 – present: shape.bu.edu
Co-founded and co-directed the Dartmouth Visual Computing Lab, 2014 – 2017: vcl.cs.dartmouth.edu
Postdoc
2016 – 2019 Xiaoting Zhang Now Senior Modeling Engineer at Roblox
2015 – 2016 Christos Mousas Now Assistant Professor at Purdue University
Ph.D.
2019 – present Xingjian Han
2018 – present Benjamin Verdier
2018 – present Zezhou Sun
2015 – 2020 Athina Panotopoulou Thesis title: “Stylized 2D Fabrication of Non-Photorealistic Images”
M.S. Theses
2015 Lingfeng Wang Thesis title: "Buoyancy Optimization for Computational Fabrication" (Now Software Engineer at Uber)
2015 Nook Harquail Thesis title (joint with M. Allen): “Foldlings: Visualization Tools for Interactive Pop-up Card Design”
2015 Marissa Allen Thesis title (joint with N. Harquail): “Foldlings: Visualization Tools for Interactive Pop-up Card Design”
2013 – 2014 Lukas Beyeler Thesis title: “Mikado: Which Objects to Pick Up in A Safe Way?”
Ph.D. & M.S. Projects

Mikado: Which Objects to Pick Up in A Safe Way? (Ph.D. Thesis of X. Panotopoulou)

Interactive Pop-up Card Design (M.S. Thesis of M. Allen)

Foldlings: Visualization Tools for Interactive Pop-up Card Design (M.S. Thesis of N. Harquail and joint work with M. Allen)

Mikado: Which Objects to Pick Up in A Safe Way? (Ph.D. Thesis of X. Panotopoulou)

Interactive Pop-up Card Design (M.S. Thesis of M. Allen)

Foldlings: Visualization Tools for Interactive Pop-up Card Design (M.S. Thesis of N. Harquail and joint work with M. Allen)
| Year  | Name               | Degree Type          | Project/Title                                                                 | Current Position                |
|-------|-------------------|----------------------|-------------------------------------------------------------------------------|---------------------------------|
| 2019  | Jamie Nelson      | M.S. Directed Study  | "Pose estimation of Rock Climbers in Monocular Video" (Now at Akamai Technologies) |                                |
| 2017 – 2018 | Qiwei Zheng | M.S. Directed Study  | "Object Stability Analysis and Retrofit Design: Sculpture Conservation" (Now at Microsoft) |                                |
| 2015 – 2016 | Rawan Al Ghofaili | Ph.D. Independent Study |                                                                            |                                |
| 2014 – 2015 | Srivamshi Pittala | Ph.D. Independent study |                                                                            |                                |
| Undergraduate |            |                      |                                                               |                                |
| 2019 – 2020 | Dennis Henneman | BU UROP (Now at MathWorks) |                                                                            |                                |
| 2019 Spring | Tammy Qiu        | BU College Prize: College of Arts & Sciences (Now at Microsoft) |                                                                            |                                |
| 2017 – 2019 | Anthea Yichen Li | BU UROP Arts Initiative Summer Research Award, BU College Prize: College of Arts & Sciences (Now M.S. student at Stanford) |                                |
| 2015 – 2017 | Liane Makatura   | Thesis title: “Tools for Physical Graphic Design.” Dartmouth Presidential Scholar, Fulbright Scholar (Now Ph.D. student at MIT) |                                |
| 2016 | Lily Xu           | Dartmouth Presidential Scholar (Now Ph.D. student at Harvard) |                                                                            |                                |
| 2016 | Alex Weinberg     | Dartmouth Presidential Scholar |                                                                            |                                |
| 2012 – 2013 | Clea Benz        | Thesis title: “3D Scene Flow Estimation of Deforming Architectural Models with Feature Tracking” |                                |
| Thesis Committees, 2nd or 3rd Reader |            |                      |                                                               |                                |
| 2019 Nov | Aldair Gongora   | (BU) Ph.D. Prospectus Defense: “Mechanical Design with a Bayesian Experimental Autonomous Researcher (BEAR)” |                                |
| 2016 April | Weifu Wang       | (Dartmouth) Ph.D. Thesis Defense: “Constraint-Based Robot Knot Tying” |                                |
| 2015 Aug | Lukas Zirngibl  | (Dartmouth) M.S. Thesis Defense: “DIMENSION4: Computational Magnetic Drawing Machines” |                                |

**OUTREACH ACTIVITIES**

| Year  | Activity                                                                 | Details                                                                                                                                 |
|-------|--------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------|
| 2019 Dec | MIT Media Lab, Women's Lunch Series. Invited Speaker.                    |                                                                                                                                       |
| 2019 Dec | Science Solstice Day, Driscoll School, Brookline. Hosted at BU Computer Science Department. Presenter: Led hands-on activity with 6th grade students on mechanics and digital fabrication. |                                                                                                                                       |
| 2019 July | A4ALL Summer Program, Boston University. Invited Speaker: introduced female high school students to research in digital fabrication. |                                                                                                                                       |
| 2019 June | Faculty review committee: Grace Hopper Celebration student sponsorship, Boston University Computer Science Department. |                                                                                                                                       |
| 2018 Dec | Science Solstice Day, Driscoll School, Brookline. Hosted at BU Computer Science Department. Presenter: introduced middle school students to research in digital fabrication. |                                                                                                                                       |
| 2018 Summer | Greater Boston Research Opportunities for Young Women (GROW), Boston University. Faculty advisor for high school research internship. |                                                                                                                                       |
| 2018 July | Summer Pathways: high school outreach program, Boston University. Invited Career Panelist. |                                                                                                                                       |
| 2015 Oct | Grace Hopper ACM Student Research Competition Jury, Houston, USA.         |                                                                                                                                       |
| 2011 April | Science-Engineering-Technology (SET) in the City Program, Museum of Science, Boston. Invited Panelist: Young Women in STEM. |                                                                                                                                       |
| 2011 March | PBS NOVA. "The Secret Life of Scientists & Engineers." Featured Scientist, Season 2011, Episode 39. | [http://www.pbs.org/video/secret-life-of-scientists-emily-whiting-architectural-engineer/](http://www.pbs.org/video/secret-life-of-scientists-emily-whiting-architectural-engineer/) |
| 2008 Feb | Google Workshop for Women Engineers, PhD Discussion Panel, San Jose, USA. |                                                                                                                                       |