

# Cindy Marie Grimm

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## Professional experience

- 9/2015 – present     **Associate Professor**, Oregon State University  
School of Mechanical, Industrial, and Manufacturing Engineering  
  
Adjunct faculty, School of Electrical Engineering and Computer Science  
  
Adjunct faculty, College of Liberal Arts
- 9/2012 – 9/2015     **Research Associate Professor**, Oregon State University  
School of Mechanical, Industrial, and Manufacturing Engineering
- 6/2012 – 9/2012     **Research Associate**, Washington University in St. Louis  
Department of Computer Science and Engineering
- 7/2007 – 6/2012     **Associate Professor**, Washington University in St. Louis  
Department of Computer Science and Engineering
- 8/2000 – 7/2007     **Assistant Professor**, Washington University in St. Louis  
Department of Computer Science and Engineering
- 2/1999 – 7/2000     **Post-Doctoral Researcher**, Brown University  
*Research topic:* Surface reconstruction for biomedical visualization
- 10/1996 – 1/1999     **Post-Doctoral Researcher**, Microsoft Research  
*Research topic:* Capturing and modeling facial animation
- 5/1996 – 10/1996     **Post-Doctoral Researcher**, Brown University  
*Research topic:* Automatic surface fitting
- 9/1995 – 12/1995     **Lecturer**, Brown University  
*Course:* Advanced graphics research using splines, wavelets, and Fourier transforms
- 6/1993 – 9/1995     **Research assistant**, Brown University  
*Research topics:* Surface modeling, collaboration with the University of Utah on user interfaces for surface modeling
- 9/1990 – 5/1993     **Teaching assistant**, Brown University  
*Courses:* Beginning and advanced graphics, Intro to Computer Science

Summers '85 – '88    **Programmer**, Apple Computer  
*Projects:* Researching and producing metrics for source code analysis

## Education

Spring 1996    **Ph.D. Computer Science**    Brown University  
Thesis: *Modeling Surfaces of Arbitrary Topology using Manifolds*  
Advisor: John Hughes, Brown University  
Committee: Andries van Dam (Brown), Tony deRose (University of Washington, now at Pixar)

Spring 1992    **M.A. Computer Science**    Brown University

Fall 1990    **B.A. Computer Science**    University of California at Berkeley

**B.A. Art**    University of California at Berkeley

## Recent awards

NSF Career Award (2002-2006)

## Professional activities

- **Associate editor [4]**  
ACM Transactions on Graphics, 2002-2011  
ELSEVIER Computers and Graphics, 2007-2011  
Journal of Graphics Tools, 2008-present (note, now [Journal of Computer Graphics Techniques](#))  
IEEE Computers and Graphics Applications, 2010-2015
- **Guest editor special issue [2]**  
Elsevier Computers and Graphics 34(5), 2010, Extended papers from the 2009 Sketch-Based Interfaces and Modeling Conference (with Joe Laviola)  
IEEE Computers and Graphics Applications Biomedical Applications: From Data Editing to Modeling, Sept 2012 (to appear), (with G. Elizabeta Marai)
- **Papers Chair [3]**  
Non-Photorealistic Animation and Rendering, 2012  
Sketch-Based Interfaces and Modeling, 2009  
ACM Student Research Competition, 2005
- **Conference organizer [4]**  
Expressive 2013 (Joint symposium on Computational Aesthetics and Sketch-Based Interfaces and Modeling and Non-Photorealistic Animation and Rendering), General chair  
Siggraph 2009, 2010 Conference Committee  
Sketch-based Interfaces and Modeling (SBIM) 2009 co-papers chair  
Midgraph [founder], (Mid-west graphics conference, co-chair Bobby Bodenheimer, Vanderbilt University, 2003), (co-chair Tao Ju), 2008)
- **Committee member [21]**  
SIGGRAPH papers, 2017  
Graphite 2005, 2006, 2007

Symposium on Geometry Processing, 2006-2014  
 Siggraph Sketches (now Unified Jury), 2003, 2004, 2007, 2008, 2013, 2014, 2015  
 Siggraph Asia Posters and Technical briefs, 2012-2014  
 ACM Student Research Competition, 2004  
 Computer Graphics International, 2005, 2006, 2009  
 Eurographics, 2010, 2014  
 Interactive 3D Graphics 2005-2009  
 CAD/Graphics 2005-2009  
 Pacific Graphics 2002, 2003, 2007, 2008, 2013-2015  
 Non-photorealistic Animation and Rendering (NPAR, now Expressive) 2007-2012  
 10th International Conference on CAD/Graphics, 2007  
 IEEE CVPR workshop “Beyond Multiview Geometry: Robust Estimation and Organization of Shapes from Multiple Cues”, 2007  
 IEEE Conference on Visualization, 2007, 2008  
 GRAPP, 2007-2008  
 Shape Modeling International 2008-2015  
 MICCAI MeshMed 2013-2015  
 SIAM Conference on Geometric and Physical Modeling (GD/SPM13-15)  
 ACM Symposium on Applied Perception 2014  
 Expressive 2013-2015  
[CompImage](#) 2014  
 Grace Hopper Conference (Gaming/Graphics/Animation track, 2013,2016)

- **Reviewer [38]**

IEEE Transactions on Human-Machine Interaction, IEEE Transactions on Medical Imaging, Marsden Fund in New Zealand, Grace Hopper, Medical and Biological Engineering and Computing (MBEC), Siggraph papers (1993-present), Computer Aided Geometric Design, IEEE Transactions on Graphics and Visualization, ACM Transactions on Graphics, Journal of Computing and Information Science in Engineering, IEEE Visualization, IEEE Information Visualization, IEEE Computer Graphics and Applications, AI EDAM, Shape Modeling International, Eurographics Visualization, The Visual Computer, Graphics Interface, Siggraph courses, Siggraph posters, ACM student research competition, International Journal of Robotics Research, Eurographics, Grace Hopper fellowship, IEEE PAMI, Siggraph Asia papers, Sketch-based Interfaces and Modeling, IEEE Signal Processing, ACM SigChi, SPIE Journal of Electronic Imaging, IEEE Transactions on Image Processing, ACM Solid and Physical Modeling, Non-photorealistic Animation and Rendering (NPAR), Leonardo, Computer Graphics Forum, Tomorrow Project, Virtual Reality in Brazil, Differential Geometry

- **Advisory board (3)**

Computer Graphics Year in Review, AK Peters LTD, 2003-2005  
 Expressive 2012-2014  
 ACM Small Conferences

- **Invited research presentations [26]**  
 Association of Women Mathematicians, Baltimore MD Jan 2014, SIAM conference, Jan 2014, 2013 Center for Genome Research, OSU, Spring conference (6/3), Rochester Institute of Technology (5/13), Oregon State Mechanical Engineering (4/12), [Trimester program on computational manifolds](#), Impa, Rio de Janeiro, (10/11). [BIRS Workshop 11w5018 Geometry for Anatomy](#), Banff, (8/11), Dreamworks, (6/11), [2011 Bellairs Workshop on Computer Animation: GRAND Challenges, Animation and Geometry](#), Barbados, (3/11), University of Oregon (5/11), Oregon State (5/11), Adobe (1/11), Drexel College (4/10), BIRS workshop on Geometric modeling (5/09), University of Missouri (5/08), SIAM Conference on Geometric Design and Computing [plenary talk] (10/05), University of California at Berkeley (5/05), Northwestern University (10/04), Carnegie-Melon university (4/03), University of Utah (10/02), University of Wisconsin (4/00), George Washington University (4/00), University of Calgary (4/00), University of Toronto (3/00), Princeton University (9/00), Harvard University (9/99), University of Christchurch (2/96), Stanford University (4/95)
- **Conference courses [2]**  
 Biomedical Applications: What You Need to Know, half-day course Siggraph 2010, Co-authors Rolf Mueller, Stephen Larson  
 Manifolds and Modeling, half-day course Siggraph 2005, 2006, Co-author Denis Zorin, NYU [Acceptance rate 50%]
- **Guest class lectures**  
 OSU, Spring '13, Harvard University, Fall '99, Brown University, Fall '94
- **Ph.D. or M.S. committee member (external)**  
 Mihail Tudoreanu, Ds.C., Washington University, 7/02  
 Christine Julien, Ds.C., Washington University, 6/04  
 Dawei Gui, Ph.D., Washington University, 1/05  
 David Warner, M.S., Washington University, 5/03  
 Evan Kiebler, M.S., Washington University, 5/03  
 Tatdow Pansombut, M.S., Washington University, 5/03  
 Jianhua Ruan, M.S., Washington University, 5/04  
 Joel Brandt, M.S., Washington University, 5/05  
 Daniel Schoebel, M.S., Washington University, 5/04  
 Eric Baron Shobe, M.S., Washington University, 5/06  
 Sasakthi Abeysinghe, M.S., continuing on to PhD, Washington University, 5/07  
 Qilong Zhang, Ph.D., Washington University, 5/07  
 Manfred Georg, PhD., 8/10  
 Lu Liu, M.S., Washington University, 12/08  
 Lu Liu, Ph.D., Washington University, 12/11  
 Andrew Knutsen, Ph.D., Washington University, 5/10  
 Gazihan Alankus, Ph.D., Washington University, 12/11  
 Devorah Langsam, M.S., Washington University, 5/12  
 Fatemeh Abbasinejad, Ph.D., UC Davis (Dr. Nina Amenta, advisor), 8/13  
 Xinze Guan, PhD., EECS OSU, current (Ween-Keng Wong)

Yaofei Feng, M.S., EECS OSU 6/13  
Ruthika Kiran Naik, M.S. EECS OSU 9/15  
Christopher Schultz, M.S. EECS OSU 3/16  
Eyal Zadicario, PhD, CS Blavatnik, Tel Aviv University. External examiner  
6/2016  
Sogol Balali, M.S. EECS OSU

- **Membership**  
Association for Computing Machinery (ACM), ACM Special Interest Group in Graphics (SIGGRAPH), Institute of Electrical and Electronics Engineers (IEEE)
- **Other**  
NSF Panelist: CAREER, ITR, Computer Vision and Robotics, Graphics and Visualization  
Marsden Fund reviewer (New Zealand), 2014  
Organizer and Lecturer, SIGGRAPH 2005, 2006 Course: Manifolds and Modeling (course proposal was refereed)  
Computer Research Association Distributor Mentor Program CRAW DREU (2004-2015)

### **Courses taught (number of students in parenthesis)**

- OSU: ENGR/ART 399 Spring 2014 [Design and Create Public Art] (8 students)
- OSU: Engineering Orientation II [Engineering computation] ENGR112, Fall 2012-2014 (~80), Winter 2013/2014 (Honor's section, ~20), Spring 2013 (~180), Spring 2014 (ECampus ~40)
- Engineering and Scientific Computing [Introductory Matlab] (CSE200), Fall 2008 (~60)
- Software design and development studio ([CSE220/CSE320](#)) Fall 2006, Spring 2008, 2009 (~20-30)
- Computer Graphics (CSE452, formerly CS453), Fall 2000, 2001, 2002, 2003, 2004, 2005, Spring 2012 (~20-40)
- Advanced Computer Graphics (CSE552, formerly CS552), Spring 2001, 2002, 2003, 2004, 2006, [Fall 2007](#), Fall 2011 (~10-20)
- Mathematical Tools for Computer Science (CS402), Spring 2001, Fall 2001, 2002, 2003 (~20)
- Video Game Programming I & II (CSE450, CSE451) Fall 2004, Spring 2005 (~30)
- Research Seminar on Human Visual Perception (CSE7521), Fall 2004 (~10)
- Algorithms and Data Structures (CSE241) Spring 2005, 2010 (~30-50)
- Research Seminar on Mathematical Modeling (CSE7541) Spring 2005 (~10)
- Special topics: Advanced mathematical tools for computer graphics (Brown University, CS295) Fall 1995 (~20)

### **Departmental and university service**

- Reviewing for Olin fellowship (2006-2009)
- Undergraduate board (2001-2006)

- Association for Woman Faculty board member 2008-2009
- Director of Media and Machines lab 2000-2011
- Engineering school representative at the Faculty Assembly 2011-2012
- Leadership committee (department level) 2009-2011
- OSU Technology Resources Fund review Spring 2013
- CAREER Workshop for Engineering, Spring 2013-2016
- Strategic plan diversity committee Fall 2014
- Graduate Council Representative, OSU
  - Kranti Kumar Potanapalli (EECS PhD, 2013, Prasad Tadepalli)
  - Sheng Chen (EECS PhD, 2014, Margaret Burnett)
  - Amin Alipour (MIME PhD, 2014, Alex Groce)
  - Taj Morton (EECS Master's, 2014, adviser Weng-Keen Wong and Molly Megraw)
- Honor's College Thesis committees (OSU)
  - Matthew Unrath (EECS, Ween-Keen Wong)
- Master's Thesis committees (OSU)
  - Rithika Kiran, (EECS 2015, Carlos Jensen)

### **Ph.D students advised**

- Timothy David Gatzke<sup>1</sup>, Fall 2000-2007. Graduation date: May 2007. Thesis title: *Comparing Features of Three-Dimensional Object Models Using Registration Based on Surface Curvature Signatures Mapped to a Plane*
- Lei Wang, Spring 2001-2003 (Left for personal reasons)
- Reynold Bailey, Fall 2001-2007. Graduation date: August 2007. Thesis title: *Techniques for perception-guided image editing*
- Nisha Sudarsanam, Fall 2003-fall 2006. Graduated August 2006 (Master's). Research topic: Camera control for linear and non-linear projection
- Amy Hawkins, Summer 2005-summer 2006. Graduated with a Master's. (Left for personal reasons)
- Ross Sowell, Fall 2005-2012, Thesis title: *Modeling Surfaces from Volume Data using non-Parallel Contours*
- Ly Phan, Fall-2006-2013, Thesis title: *Shape Correspondence for Biological Applications*
- Ruosi Li, Fall 2009-2011. Graduated with a master's, 2011
- Anahita Sanandaji, Summer 2013-present (EECS, OSU)

### **Ph.D students co-advised**

- Michelle Vaughan, Fall 2010-present (CSE, Wash U), co-adviser Dr. Tao Ju, CSE Washington University in St. Louis
- Matthew Rueben, Fall 2012-current. Expected graduation date: 2016. Thesis topic: *Privacy and robotics*, co-adviser Dr. Smart, MIME

### **M.S. students advised**

- Ying Huang, 2001, Master's project: Bi-directional texture synthesis

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<sup>1</sup> Timothy worked full-time at Boeing.

- Nicholas Haddad, 2002, Master's project: Sound mosaicing
- Mark Schroering, May 2003, Master's thesis: [\*A Thesis on a 3D Input Device for Sketching Characters\*](#)
- Martin Hassett, 2003, Master's project: 3D Implicit surface interaction
- Andrew Schoewe, 2004, Master's project: Genetic textures on the GPU
- Nathan Dudley, 2005, Master's thesis: [\*Non-photorealistic rendering of algorithmically generated trees\*](#)
- Amy Hawkins, 2005, Master's project: Key frame interpolation using exponential matrices
- William Niebruegge, 2006, Master's project: Spherical texture mapping
- Rachael Bujans, 2006, Master's thesis: [\*Sketch-based techniques for mesh deformation and editing\*](#)
- Nisha Sudarsanam, Summer 2006, Master's thesis: [\*A Thesis on a View-based Deformation Tool-kit\*](#)
- Carol Brickman, Spring 2007, Master's project: [\*A Fingerspelling Sign Language Visualization\*](#)
- Mamta Datwami, Fall 2009, Master's project: Subtle Gaze Direction in Videos

### **M.S. students co-advised**

- Sai Krishna Allani, Winter 2015, Master's thesis area: robot grasping, co-adviser Dr. Ravi Balasubramanian, MIME
- Saurabh Milind Dixit, Spring 2015, Master's thesis area: robot grasping, co-adviser Dr. Ravi Balasubramanian, MIME

### **Honor's college students**

- Keith Lippincott, (expected Spring 2016), Aesthetics of curvature
- Nick Agalzoff (expected Spring 2017), Aortic aneurism modeling
- Blair Cox (expected Spring 2018), Bat ears for robots

### **Research support**

- HP/OSU Seed funding, "Using HP's Sprout to capture a soft robotics workflow", \$20K, Cindy Grimm, Chinweike Eseonu, and Yigit Menguc (OSU), Will Allen and Lonnie Mandigo (HP) 10/15-6/16
- National Science Foundation, Co-PI, "REU Site: Robots for the Real World", CNS 1359480, \$339,981, 6/14-5/17
- National Science Foundation, PI, "CGV: Medium: Collaborative Research: Developing conceptual models for navigation, marking, and inspection in the context of 3D image segmentation", IIS 1302142 \$286,300 6/12/2013
- National Science Foundation, Co-PI, "Collaborative Research: ImageQuest: Citizens Advancing Biology with Calibrated Imaging and Validated Analysis", (PI Robert Pless) DEB 1053554 \$518,332 9/10-9/13
- National Science Foundation, PI, "Collaborative Research: Biological Shape Spaces, Transforming Shape into Knowledge", DBI 1053171, \$213,923, 9/10-9/13

- National Science Foundation, Co-PI, “Geometric Modeling for Spatial Analysis of Bio-medical Data”, (PI Tao Ju) CCF 0702662 \$367,424, 9/07-9/10 (12% funding rate), extended to 10/11
- National Science Foundation, Co-PI 07-06/08, PI 07/08 “CPATH T: Active Learning for Transformation of the Undergraduate Experience”, (PI 07-06/08 Ken Goldman, took over as PI July 2008) CNS 0722328, \$562,987, 8/07-8/11 (25% funding rate)
- National Science Foundation, PI, “Surface Construction and Comparison using Manifolds”, CCF 0429856, \$402,053, 10/04-10/07, extended to 10/08 (10% funding rate)
- National Science Foundation, PI, “CAREER: A Composition System for Computer Graphics”, CCF 0238062, \$497,780, 3/03-3/08, extended 3/09
- National Science Foundation, Co-PI, “REU Sites: Summer Undergraduate Research Program”, CNS 0139576, \$169,600, 4/02-4/04
- National Institute for Health, Sub-contract, “Normal and Abnormal in vivo carpal bone motion”, PI Rhode Island Hospital, full grant \$498,287, Washington University subcontract \$14,585
- National Science Foundation, PI, “Manifolds and Lumigraphs”, \$150,363, 8/99-8/01

### **Supplements**

- National Science Foundation, PI, “CGV: Medium: Collaborative Research: Developing conceptual models for navigation, marking, and inspection in the context of 3D image segmentation”, IIS 1540232, \$12,000 Summer 2015
- National Science Foundation, PI, “Collaborative Research: Biological Shape Spaces, Transforming Shape into Knowledge”, DBI 1332276, REU Supplement, \$9000, Summer 2013
- National Science Foundation, PI, “CPATH T: Active Learning for Transforming Shape into Knowledge”, REU Supplement, \$12,800
- National Science Foundation, PI, “Surface Construction and Comparison using Manifolds”, REU Supplement, \$6400, Summer 2006
- National Science Foundation, PI, “Surface Construction and Comparison using Manifolds”, REU Supplement, \$6400, Summer 2005
- National Science Foundation, PI, “CAREER: A Composition System for Computer Graphics”, REU Supplement, \$6400, Summer 2005
- National Science Foundation, PI, “CAREER: A Composition System for Computer Graphics”, REU Supplement, \$12,000, Summer 2004

### **Internal OSU funding**

- DeLoach Work Scholarship for Keith Lippincott, \$1000K, Summer 2013
- DeLoach Work Scholarship for Blair Cox, \$1500K, Winter-spring 2014

### **Journal publications**



- J1. Michelle Holloway, Cindy Grimm, and Tao Ju, “Template-based Surface Reconstruction from Contours”, *Computers and Graphics*, 58, 6/16, 10.1016/j.cag.2016.05.012, pp 84-91
- J2. Ly Phan, Katherine Courchaine, Amir Azarbal, David A. Vorp, Cindy Grimm, and Sandra Rugonyi, “A Geodesics-based Surface Parameterization to Assess Aneurysm Progression”, *Journal of Biomechanical Engineering*, 3/2016, doi: 10.1115/1.4032918 (accepted, pending paper publication, [web version](#))
- J3. Sebastian Kurttek, Jingyong Su, Cindy Grimm, Michelle Vaughan, Ross Sowell, Anuj Srivastava, “Statistical Analysis of Manual Segmentations of Structures in Medical Images”, *Computer Vision and Image Understanding*, Special issue on Shape Modeling in Medical Image Analysis 117(9), 1036-1050, September, 2013
- J4. Shahriar Hossain, Praveen Kumar, Reddy Ojili, Cindy Grimm, Rolf Mueller, Layne Watson, Naren Ramakrishnan, “Scatter/Gather Clustering: Flexibly Incorporating User Feedback to Steer Clustering Results”, [IEEE Conference on Visual Analytics Science and Technology \(VAST\)](#), IEEE TCGV, 18(12), 2829-2838, October, 2012
- J5. Paul Heider, Alain Pierre-Pierre, Ruosi Li, Rolf Mueller, and Cindy Grimm, “Comparing Local Shape Descriptors”, [The Visual Computer](#), special issue (3DOR 2010), 28(9) 919-929, September 2012
- J6. Rolf Mueller, Lyvin Cai, Cindy Grimm, and Washington Mio, “Shape Space Analysis of Structures in Bat Biosonar”, [The Journal of the Acoustical Society of America](#), 129(4), 2507, April, 2011
- J7. Cindy Grimm and William D. Smart, “Shape Classification and Normal Estimation for Non-uniformly Sampled, Noisy Point Data”, [Elsevier Computers and Graphics](#), 35(4), 904-915, March 2011
- J8. Andrew Knutsen, Yulin Chang, Cindy Grimm, Ly Phan, Larry Taber, Philip Bayly, “A New Method to Measure Cortical Growth in the Developing Brain”, [Journal of Biomechanical Engineering](#), 132(10), 101004-101015 Oct 2010, PMID 20887014
- J9. Ross Sowell, Christopher Gill, Roger D. Chaimberlain, Cindy Grimm, Kenneth J. Goldman, and Mark Tranel, “The active-learning transformation: a case study in software development and systems software courses”, [Journal of Computing in Small Colleges](#), 25(5), 165-172, May 2010
- J10. Ross Sowell, Yixen Chen, Jeremy Buhler, Sally Goldman, Cindy Grimm and Kenneth J. Goldman, “Experiences with active learning in CS 3”, [Journal of Computing in Small Colleges](#), 25(5), 173-179, May 2010
- J11. Reynold Bailey, Ann McNamara, and Cindy Grimm, “Improving Search Task Performance Using Subtle Gaze Direction”, [Transactions on Applied Perception](#), 6(3), 1-19, August 2009
- J12. Reynold Bailey, Ann McNamara, Nisha Sudarsanam, and Cindy Grimm, “Subtle Gaze Direction”, [Transactions on Graphics](#), 28(4), 1-14, August 2009

- J13. Cindy Grimm, Ly Phan, Tao Ju, and John Hughes, “Adaptive Smooth Surface Fitting with Manifolds”, [The Visual Computer](#), special issue ([Computer Graphics International](#)), 25(5), 589-597, May 2009
- J14. Sangwon Lee, David Feng, Bruce Gooch, and Cindy Grimm, “A Perception-based User Interface for Reconstructing Architecture Drawings”, [Computer Graphics Forum](#), 27(1), 81-90, Mar 2008
- J15. Fujian Qu, Crystal M. Ripplinger, Vladimir P. Nikolski, Cindy Grimm, and Igor R. Efimov, “Three Dimensional Panoramic Imaging of Cardiac Arrhythmias in the Rabbit Heart”, [Journal of Biomedical Optics](#), 12(4), CID(044019) Jul-Aug 2007
- J16. Reynold Bailey and Cindy Grimm, “Perceptually Meaningful Image Editing: Manipulating Perceived Depth and Creating the Illusion of Motion in 2D Images”, [The Visual Computer](#), 23(9), 813-821, Aug 2007
- J17. G. Elisabeta Marai, Cindy Grimm, and David Laidlaw, "Arthrodiol Joint Markerless Cross-Parameterization and Biomechanical Visualization", [IEEE Transactions on Graphics and Visualization](#), 13(5), 1095-1104, September 2007
- J18. Bill Niebruegge and Cindy Grimm, "Continuous Cube Mapping", [Journal of Graphics Tools](#), 12(4), 25-34, Apr 2007
- J19. Ankit Mohan, Reynold Bailey, Johathan Waite, Jack Tumblin, Cindy Grimm, and Bobby Bodenheimer, “Table-top Computed Lighting for Practical Digital Photography”, [IEEE Computer Graphics and Visualization](#), 13(4), 652-662, August 2007
- J20. Amy Hawkins and Cindy Grimm, “Keyframing using Linear interpolation of Matrices”, [Journal of Graphics Tools](#), 12(13), 55-69, Oct 2007
- J21. Ryan Schmidt, Cindy Grimm, and Brian Wyvill “Interactive Decal Compositing with Discrete Exponential Maps”, [ACM Transactions on Graphics \(Siggraph\)](#), 25(3), 605-613, July 2006
- J22. Timothy D. Gatzke and Cindy Grimm, “Estimating Curvature on Triangular Meshes”, [International Journal of Shape Modeling](#), [International Journal of Shape Modeling](#), 12(1), 1-29, June 2006
- J23. Cindy Grimm, Karan Singh, “Implementing the IBar camera widget”, [Journal of Graphics Tools](#), 10(3), 51-64, September 2005
- J24. Cindy Grimm, “Parameterization using Manifolds”, [International Journal of Shape Modeling](#), 10(1), 51-80, June 2004
- J25. Georgeta Elizabeth Marai, David Laidlaw, Cagatay Demiralap, Stuart Andrews, Cindy Grimm, and Joseph Crisco, “Estimating Joint Contact Areas and Ligament Lengths from Bone Kinematics and Surfaces”, [IEEE Transactions on Biomechanical Engineering](#), 51(5), 790-799, May 2004
- J26. Zachary Byers, Michael Dixon, William Smart, and Cindy Grimm, “Say Cheese!: Experiences with a Robot Photographer”, [AAAI Magazine](#), 25(3), 37-46, Fall 2004 (Cover story)

- J27. Cindy Grimm, David Laidlaw, and Joseph Crisco, “Fitting Manifold Surfaces To 3D Point Clouds”, [Journal of Biomechanical Engineering](#), Vol. 124,(1) 136-140, Feb. 2002
- J28. Cindy Grimm and Matthew Ayers, “A Framework for Synchronized Editing of Multiple Curve Representations”, *Computer Graphics Forum*, 17(3), 31-40, September 1998 (acceptance rate 34.7%)

### **Journal and conference publications under review**

- R1. Ly Phan, Sandra Rugonyi, and Cindy Grimm, “Visualization techniques for the developing chicken heart”, [Computer Methods in Biomechanics and Biomedical Engineering: Imaging & Visualization](#), (second review June 2016)
- R2. Matthew Rueben, Frank J. Bernieri, Cindy M. Grimm, and William D. Smart, “Interpreting Survey Items using Exploratory Factor Analysis”, Second International Workshop on Evaluation Methods Standardization in Human-Robot Interaction, in conjunction with RO-MAN 2016, ([EMSHRI 2016](#)) (under review 7/6/2016)
- R3. Leo Bowen-Biggs, Suzanne Dazo, Yili Zhang, Alexander Hubers, Matthew Rueben, Ross Sowell, William D. Smart, and Cindy M. Grimm, “A Method for Establishing Correspondences between Hand-Drawn and Sensor-Generated Maps”, International Conference on Social Robotics ([ICSR 2016](#)) (under review July 6)
- R4. Stephane Walker, Samantha Hemleben, Cindy M. Grimm and Yigit Menguc, “”, [Soft Robotics](#), (second revision)

### **Refereed conference publications (peer reviewed, 6-10 pages)**

- C1. Sai Krishna Allani, Brendan John, Javier Ruiz, Saurabh Dixit, Jackson Carter, Ravi Balasubramanian, and Cindy Grimm, ”, 2016 ACM Symposium on Applied Perception ([SAP 2016](#)), July 2016 (to appear)
- C2. Ruth West, Meghan Kajihara, Max Parola, Kathryn Hays, Luke Hillard, Anne Carlew, Jeremy Deutsch, Brandon Lane, Michelle Holloway, Brendan John, Anahita Sanandaji, and Cindy Grimm, “Eliciting Tacit Expertise in 3D Volume Segmentation”, The 9<sup>th</sup> International Symposium on Visual Information and Communication and Interaction ([VINCI 2016](#)), September 2016 (to appear)
- C3. Matthew Rueben, Frank J. Bernieri, Cindy M. Grimm, and William D. Smart, “Evaluation of Physical Marker Interfaces for Protecting Visual Privacy from Mobile Robots”, IEEE International Symposium on Robot and Human Interactive Communication ([RO-MAN 2016](#)), August 2016, (to appear, acceptance rate 47%)
- C4. Matthew Sundberg, Walter Litwinczyk, Cindy Grimm, and Ravi Balasubramanian, “Visual Cues used to Evaluate Grasps from Images”, International Conference on Robotics and Applications ([ICRA 2016](#)), May 2016, pp 1865-1971 (Nominated for best paper)
- C5. Anahita Sanandaji, Jeremy Deutsch, Max Parola, Meghan Kajihara, Anne Carlew, Ruth West, and Cindy Grimm, “Where do Experts Look while doing 3D

- Image Segmentation”, Proceedings of the Ninth Biennial ACM Symposium on Eye Tracking Research & Applications Pages ([ETRA 2016](#)), March 2016, pp 171-174
- C6. Michelle Holloway, Anahita Sanandaji, Deniece Yates, Amali Krigger, Ross Sowell, Roth West, and Cindy Grimm, “Guided Structure-Aligned Segmentation of Volumetric Data”, 11<sup>th</sup> International Symposium ([ISVC](#)) 2015, published in Advances in Visual Computing, December 2015, pp 307-317 (Winner best paper award)
- C7. Ly Phan, Cindy Grimm, and Sandra Rugonyi, “Visualization Techniques for the Developing Chicken Heart”, 11<sup>th</sup> International Symposium ([ISVC](#)) 2015, published in Advances in Visual Computing, December 2015, pp 35-44
- C8. Alexander Hubers, Emily Andrulis, Levi Scot, Tanner Stirrat, Ruonan Zhang, Ross Sowell, Matthew Rueben, Cindy Grimm, and William Smart, “Using Video Manipulation to Protect Privacy in Remote Presence Systems”, [International Conference on Social Robotics](#), October 2015, pp 245-255
- C9. Thomas Booth, Srinivas Sridharan, Ann McNamara, Cindy Grimm, and Reynold Bailey, “Guiding Attention in Controlled Real-World Environments”, SAP ’13, [Proceedings of the ACM Symposium on Applied Perception](#), Aug 2013, pp 75-82
- C10. Fatemeh Abbasinejad, Pushkar Joshi, Cindy Grimm, Nina Amenta, and Lance Simons, “Surface Patches for 3D Sketching”, [SBIM ’13: Proceedings of the International Symposium on Sketch-Based Interfaces and Modeling](#), 53-60, July 2013
- C11. Ann McNamara, Stephen Caffey, Thomas Booth, Cindy Grimm, Srinivas Sridharan, and Reynold Bailey, “Directing Gaze in Narrative Art”, [Symposium on Applied Perception](#), 63-70, August 2012
- C12. Cindy Grimm and Pushkar Joshi, “JustDrawIt: A 3D Sketching System”, [Sketched-based Interfaces and Modeling \(SBIM\)](#), 121-130, July 2012
- C13. Reynold Bailey, Aaron Costello, Ann McNamara, Srinivas Sridharan, and Cindy Grimm “Impact of Subtle Gaze Direction on Short-Term Spatial Information Recall”, [Symposium: Eye Tracking Research and Applications](#), 67-74, March, 2012
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- C23. Cindy Grimm, “Adding Lighting and Viewing Effects to Digital Images”, [Computational Aesthetics](#), May 2009, pp 99-105
- C24. Nisha Sudarsanam, Cindy Grimm, and Karan Singh, “CubeCam: A Screen-Space Camera Manipulation Tool”, [Computational Aesthetics](#), May 2009, pp 65-71
- C25. Reynold Bailey, Ann McNamara, and Cindy Grimm, “Improving Search Task Performance Using Subtle Gaze Direction”, [Symposium on Applied Perception in Graphics and Visualization](#), Aug 2008, pp 51-56
- C26. Nisha Sudarsanam, Karan Singh, and Cindy Grimm, “Non-linear Perspective Widgets for Creating Multiple-View Images”, [Symposium on Non-photorealistic Animation and Rendering](#), June 9-11, 2008, pp 69-79
- C27. Nathan Dudley and Cindy Grimm, “Non-Photorealistic Rendering of Algorithmically Generated Trees”, [GRAPP 2007](#), March 2007, pp 197-204
- C28. Michael Kowalski and Cindy Grimm, “Painting Lighting and Viewing Effects”, [GRAPP 2007](#), March 2007, pp 204-212
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- C30. Leon Barrett, Patrick Coleman, Nisha Sudarsanam, Karan Singh and Cindy Grimm, “3D Screen-space Widgets for Non-linear Projection”, [Graphite 2005](#), Nov 2005, pp 221-228

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- C39. Mark Schroering, Cindy Grimm, and Robert Pless, "A New Input Device for 3D Sketching", [Vision Interface](#), Halifax, Canada, 311-318, June 2003
- C40. Lei Wang, Cindy Grimm, and Robert Pless, "A 3D Pattern for Pose Estimation for Object Capture", [Vision Interface](#), Halifax, Canada, 395-401, June 2003
- C41. G. Elisabeta Marai, David H. Laidlaw, Cagatay Demiralp, Cindy Grimm, Joseph J. Crisco, Douglas Moore, and E. Akelman. "Contact Areas and Ligament Lengths are Abnormal in Patients with Malunited Distal Radius Fracture Despite Normal Radioulnar Kinematics", [World Congress Biomechanics](#), August 2002
- C42. Cindy Grimm, "Simple Manifolds for Surface Modeling and Parameterization", [Shape Modeling International](#), Banff, Canada, 237-245, May 2002
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- W1. Matthew Rueben, Frank J. Bernieri, Cindy M. Grimm, and William D. Smart, “Evaluation of Physical Marker Interfaces for Protecting Visual Privacy from Mobile Robots”, The Eleventh ACM/IEEE International Conference on Human Robot Interaction ([HRI 2016](#)), March 2016, pp 507-508
- W2. Ly Phan and Cindy Grimm, “Sketching Reaction Diffusion Texture”, [Eurographics Symposium on Sketch Based interfaces and Modeling](#), September 2006, pp 107-114
- W3. Reynold Bailey, Cindy Grimm, and Christopher Davoli, “The Effect of Warm and Cool Colors on Depth Ordering”, [Applied Perception in Graphics and Visualization](#), p 161, July 2006
- W4. Ankit Mohan, Jack Tumblin, Bobby Bodenheimer, Cindy Grimm and Reynold Bailey, “Table-top Computed Lighting for Practical Digital Photography”, [Eurographics Symposium on Rendering](#), 165-172, June 2005 (acceptance rate 33.3%)
- W5. William Smart and Cindy Grimm, “(Not) Interacting with a Robotic Photographer”, [AAAI Spring Symposium](#), Stanford, CA, 181-186, April 2003

### **Book chapters**

1. Dr. Beverly Browning, "Winning Strategies for Developing Grant Proposals", chapter “Why proposals aren’t funded” (Published 2005)
2. Bruce Gooch, Amy Gooch, Mario Costa Sousa (editors), "Non-photorealistic rendering II” (Published 2006)

## Thesis

- Cindy Grimm, “Modeling Surfaces of Arbitrary Topology using Manifolds”, 1996, Ph. D. Thesis Brown University
- Cindy Grimm, “Converting Solid Objects to Surface Objects”, Master’s thesis, Brown University 1992

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- T1. Alexander Hubers, Emily Andrulis, Levi Scott, Tanner Stirrat, Duc Tran, Ruonan Zhang, Ross Sowell, Cindy Grimm, William D. Smart, “Video Manipulation Techniques for the Protection of Privacy in Remote Presence Systems”, [arXiv 1501.03188](#), January 2015
- T2. Michelle Vaughan, Cindy Grimm, Ruth West, Ross Sowell, Robert Pless, and Stephen Kobourov, “Specializing Interfaces for Citizen Science Segmentation of Volumetric Data, Tech report WUCSE-2012-42, Washington University in St. Louis, 2012
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- E1. William D. Smart, Zachary Byer, Michael Dixon, Jacob Cynamon, Hui Zhang, and Cindy Grimm, “Lewis the Robotic Photographer”, [Siggraph 2002 Emerging technologies](#)

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- A1. Anahita Sanandaji, Cindy Grimm, and Ruth West, “How Experts' Mental Model Affects 3D Image Segmentation”, 2016 ACM Symposium on Applied Perception ([SAP 2016](#)) poster, July 2016

- A2. Michelle Holloway, Tao Ju, Cindy Grimm, “Contour guided surface deformation for volumetric segmentation”, [ACM SIGGRAPH 2015 Posters](#), July 2015
- A3. Alexander Hubers, Emily Andruilis, William Smart, Levi Scott, Tanner Stirrat, Duc Tran, Ruonan Zhang, Ross Sowell, Cindy Grimm, “Video Manipulation Techniques for the Protection of Privacy in Remote Presence Systems”, [Human Robot Interaction](#) (Extended Abstracts), March 2015, pp 59-60
- A4. Michelle Holloway, Cindy Grimm, Ruth West, Ross Sowell, “A guided approach to segmentation of volumetric data”, [ACM SIGGRAPH 2014 Posters](#), July 2014
- A5. Cindy Grimm, “Results of an observational study on sketching”, [SBIM 2011 posters](#), July 2011
- A6. Reynold Bailey, Aaron Costello, Ann McNamara, Cindy Grimm, “Impact of Subtle Gaze Direction on Short-Term Spatial Information Recall”, [Siggraph 2011 talks](#), August 2011 (Acceptance rate: 20%)
- A7. Srivnivas Sridharan, Ann McNamara, Reynold Bailey, Cindy Grimm, “Subtle Gaze Manipulation for Improved Mammography Training”, [Applied Perception and Graphics](#), August 2011
- A8. Paul Heider, Alain Pierre-Pierre, Ruosi Li, Rolf Mueller, and Cindy Grimm, “Poster: A Comparison of Local Shape Descriptors for Biological Applications”, [1<sup>st</sup> IEEE International Conference on Computational Advances in Bio and Medical Sciences \(ICCABS\)](#), Feb 2011
- A9. Rolf Mueller, Washington Mio, and Cindy Grimm, “Shape Space Analysis of Structures in Bat Biosonar”, [Meeting of the Acoustical Society of America](#), April 2010
- A10. Ross Sowell, Tom Erez, Emily Feder, Jianqi Xing, Leon Barret, and Cindy Grimm, “Image-space Constraints for Controlling Camera Interpolation”, [Symposium on Interactive 3D Graphics and Games](#), March 2011, p 205
- A11. Ross Sowell, Lu Liu, Tao Ju, Cindy Grimm, Christopher Abraham , Garima Gokhroo, and Daniel Low, “User Studies on the Feasibility of Oblique Contouring”, [Siggraph 2009](#) posters
- A12. Ross Sowell, Lu Liu, Tao Ju, Cindy Grimm, Christopher Abraham, Garima Gokhroo, and Dan Low, “VolumeViewer: an Interactive Tool for Fitting Surfaces to Volume Data”, [Symposium on Interactive 3D Graphics and Games](#), Feb 2009
- A13. Christopher Abraham, Dan Low, Ross Sowell, Garima Gokhroo, M. Michaletz-Lorenz, J. Olsen, and K. Creach, “Inter-observer Variability in Non-transverse Segmentation”, *Radiotherapy and Oncology*, 92(1), 2009 S186
- A14. Christopher Abraham, Dan Low, Ross Sowell, Garima Gokhroo, Tao Ju, Liu Lu, “VolumeVewer: A Segmentation and Surface Reconstruction Toolset for Non-transverse Image Planes”, [Medical Physics](#), 26, 2009 p 2459
- A15. Ly Phan, Lu Liu, Sasakthi Abyesinghe, Tao Ju and Cindy Grimm, “Surface Reconstruction from Point Set using Projection Operator”, [Siggraph 2008](#) posters and informal talks, second place in the ACM Student Programming Competition

- A16. Ross Sowell, Lu Liu, Tao Ju, and Cindy Grimm, “An Interactive Tool for Fitting Surfaces to Volume Data”, [SIGGRAPH 2008](#) poster. Selected for the ACM Student Programming Competition
- A17. Ross Sowell and Cindy Grimm, “Smooth Key Framing Using the Image Plane”, [Siggraph 2007](#) posters. Selected for the ACM Student Programming Competition.
- A18. Reynold Bailey, Ann McNamara, and Cindy Grimm, “Subtle Gaze Direction”, [Siggraph 2007](#) sketches. Selected for the ACM Student Programming Competition.
- A19. Ross Sowell and Cindy Grimm, “A Tool for Fitting Surfaces to Medical Image Data”, [Siggraph 2006](#) posters
- A20. Reynold Bailey and Cindy Grimm, “Creating the Illusion of Motion in 2D Images”, [Siggraph 2006](#) posters
- A21. Ankit Mohan, Jack Tumblin, Bobby Bodenheimer, Reynold Bailey, and Cindy Grimm, “Tabletop Computed Lighting for Practical Digital Photography”, Siggraph 2005 sketches (acceptance rate: 25%)
- A22. Amy Hawkins and Cindy Grimm, “Keyframing Using Linear Interpolation of Matrices”, Siggraph 2005 posters
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- A24. Reynold J. Bailey and Cindy M. Grimm, “Using Value Images to Adjust Intensity in 3D Renderings and Photographs”, Siggraph 2004 posters
- A25. Nisha Sudarsanam, Leon Barrett, Patrick Coleman, Karan Singh, and Cindy Grimm, “Sketching Non-Linear Projections”, Siggraph 2004 posters
- A26. Cindy Grimm, “Painting Lighting and Viewing effects”, Graphics Interface 2003 posters
- A27. William D. Smart, Zachary Byer, Michael Dixon, Jacob Cynamon, Hui Zhang, and Cindy Grimm, “Lewis the Robotic Photographer”, Siggraph 2002 sketch (invited)

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- O1. Pushkar Joshi, Cindy Grimm, “Methods and Apparatus for Three-Dimensional (3D) Sketching”, Patent 6067-71801 B1404, full filing 5/27/2012, Provisional Application Serial No. 61/491,078 applied for May 27, 2011, Adobe Corporation
- O2. Cindy Grimm, Rolf Mueller, Stephen Larson, “Biomedical applications: what you need to know”, Siggraph course notes 2010
- O3. Seeing the Future with Imaging Science, The National Academies and the Keck Futures Initiative joint publication, 2011.
- O4. Open Problems in Topology 2, Tom Peters and Denis Blackmore
- O5. Cindy Grimm and Denis Zorin, “Manifolds and Modeling”, Siggraph course notes 2005, 2006

- O6. Emerging Challenges in Computational Topology, Marshall Bern, David Eppstein, et. Al, Workshop sponsored by the NSF, available at:  
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- O7. Brian Guenter, Cindy Grimm, and Henrique Malvar, “Method and System for Capturing and Representing 3D Geometry, Color and Shading of Facial Expressions and other Animated Objects”, Patent 3382-49676