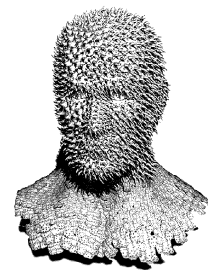


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Research

Overview Interdisciplinary research into robust and effective computer science and visualization tools to solve problems in biology, fluids, medical imaging, archaeology, geology, geography, and other disciplines. Collaborative work with colleagues in these areas guides the research and provides a mechanism for evaluating the usefulness and robustness of results.

Education Ph.D., Computer Science, California Institute of Technology, 1995.

Geometric Model Extraction from Magnetic Resonance Volume Data

Researched biological applications of computer graphics. Created new computer graphics modeling and animation techniques that collect better magnetic resonance imaging (MRI) data, classify or segment sampled volume data, volume render, and animate extracted models .

M.S., Computer Science, California Institute of Technology, 1992.

Material Classification of Magnetic Resonance Volume Data

Sc.M., Computer Science, Brown University, 1985.

Rendering Parametric Surfaces

Sc.B., Computer Science, Brown University, *magna cum laude*, honors in Math, 1983.

Topology and Mechanics, Honors thesis (film)

Experience **Professor, Brown University**, 2008 to present.

Associate Professor, Brown University, 2003 to 2008.

Stephen Robert Assistant Professor, Brown University, 2000 to 2003.

Assistant Professor, Brown University, 1998 to 2000.

Specific research projects include visualization of vector-valued and tensor-valued volume data, acquiring images of blood pressure measurements and of water diffusion tensor measurements using magnetic resonance, development of geometric tools for archaeology, simulation of human joint dynamics, and visualization of computer programs.

Senior Research Fellow, California Institute of Technology, 1996 to 1998.

Research focussed on quantitative biological and medical imaging and image processing, modeling biological systems, and scientific visualization. Responsible for creating a research plan, raising funds, executing the plan, and directing and supervising students and staff.

Postdoc/Grad. Research Assistant, California Institute of Technology, 1989 to 1996.

Research focused on extracting computer graphics models of animals and plants from 3-D MRI data. Participated in fund-raising and site reviews for the HBP and the distributed NSF Science and Technology Center for Computer Graphics and Scientific Visualization. Achieved research goals from the two projects, including developing tissue classification algorithms, visualizing MRI data, and placing organic textures on geometric models.

Consultant, Stardent/Advanced Visual Systems, 1989 to 1993.

Consulted on design and implementation strategies for Application Visualization System (AVS) scientific visualization software. Implemented new CAD/CAM finite element functionality. Worked with customers to improve their animation and modeling applications.

Software Engineer, Stellar Computer, 1986 to 1989.

Designed, prototyped, and implemented AVS. As first member of the graphics software team at Stellar, helped recruit and build the group, and coordinate with the graphics hardware group. Developed and implemented graphics software architecture for the Stellar graphics supercomputer.

Research Assistant, Brown University, 1983 to 1985.

Consultant, Basel Institute for Immunology, Switzerland, Summer 1984.

Teaching Assistant, Brown University, 1983.

Programmer, Johns Hopkins University, 1980 to 1982.

Honors

2022 Test of Time Paper Award from IEEE CG&A

2019 IEEE Visualization Academy

2018 Best Poster award at IEEE VIS

2015 Honorable Mention Paper at IEEE VAST/VIS

2013 IEEE Fellow

2012 Best Note Honorable Mention at ACM CHI

2010 Best Poster award at IEEE Visualization

2008 IEEE VGTC Visualization Technical Achievement Award

Capstone speaker at IEEE Visualization Conference

Best poster award Nomination, Annual Meeting of International Society for Magnetic Resonance in Medicine

- 2007 1st Place, NSF/Science International Science & Engineering Visualization Challenge, Informational Graphics, with student Misha Kostandov and several other collaborators
- 2006 SIGGRAPH, ACM Student Research Competition, 1st place with PhD student Wenjin Zhou
Outstanding Poster Award at 10th International Conference on Alzheimer’s Disease – Imaging Consortium
- 2005 Best Poster award at IEEE Visualization
SIGGRAPH, ACM Student Research Competition, 2nd place with PhD student Daniel Keefe
- 2004 Best Panel award at IEEE Visualization
- 2003 Henry Merritt Wriston Teaching Fellowship
- 2002 *Computers & Graphics* Second Best Paper Award
- 2001 [Best Case Study award at IEEE Visualization](#)
Best Layout and Best Scientific Presentation Exhibit Award at the American Society for Surgery of the Hand Annual Meeting
Awarded NSF CAREER Grant
- 2000 Appointed Stephen Robert Assistant Professor
- 1998 Best Panel award at IEEE Visualization
- 1989 Earl C. Anthony Graduate Fellowship
- 1984 Raster Tech Image Contest
elected to Sigma Xi

**Journal and
SIGGRAPH**

Papers

- 123. Visual cue effects on a classification accuracy estimation task in immersive scatterplots. Fumeng Yang, James Tompkin, Lane Harrison, and David H. Laidlaw. *IEEE Transactions on Visualization and Computer Graphics*, 2022. ([bibtex: Yang-2022-VCE](#)).
- 122. Tractography processing with the sparse closest point transform. Ryan Cabeen, Arthur W Toga, and David H. Laidlaw. *Neuroinformatics*, 19(2):367–378, 2021. ([pdf](#)) ([bibtex: Cabeen-2021-TPS](#)).
- 121. Virtual and augmented reality: New tools for visualizing, analyzing, and communicating complex morphology. RL Cieri, ML Turner, RM Carney, PL Falkingham, AM Kirk, T Wang, B Jensen, Johannes Novotny, Joshua Tveite, SM Gatesy, et al. *Journal of Morphology*, 282(12):1785–1800, 2021. ([bibtex: Cieri-2021-VAR](#)).

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119. A virtual reality memory palace variant aids knowledge retrieval from scholarly articles. Fumeng Yang, Jing Qian, Johannes Novotny, David Badre, Cullen Jackson, and David H. Laidlaw. *IEEE Transactions on Visualization and Computer Graphics*, 2020. ([pdf](#)) ([bibtex: Yang-2021-VRM](#)).
118. Immgen at 15. Stephanie Vargas Aguilar, Oscar Aguilar, Allan, Rhys, Amir, El Ad David, Angeli, Veronique, Artyomov, Maxim N, Asinovski, Natasha, Astarita, Jilian, Austen, K Frank, Bajpai, Geetika, David H. Laidlaw, et al. *Nature Immunology*, 11(7):700–703, 2020. ([bibtex: Aguilar-2020-I15](#)).
117. Merging biplanar x-ray, 3-D animation, particle simulation, and virtual reality to understand 3-D foot dynamics on deformable substrates. KG Hatala, PL FalkinghamL, S Megherhi, DA Perry, S Cheleden, Johannes Novotny, David H. Laidlaw, and SM Gatesy. *American Journal of Physical Anthropology*, 171(S69), 2020. ([pdf](#)) ([bibtex: Hatala-2020-MBX](#)).
116. Predicting carpal bone kinematics using an expanded digital database of wrist carpal bone anatomy and kinematics. Bardiya Akhbari, Douglas Moore, David H. Laidlaw, Arnold-Peter C. Weiss, Scott W. Wolfe, and Joseph J. Crisco. *Journal of Orthopedic Research*, August 2019. ([pdf](#)) ([bibtex: Akhbari-2019-PCB](#)).
115. Measuring the effects of scalar and spherical colormaps on ensembles of DMRI tubes. Jian Chen, Guohao Zhang Wesley Chiou, David H. Laidlaw, and A. P. Aachus. In *IEEE Transactions on Visualization and Computer Graphics*, pages 1–1, Feb 2019. ([pdf](#)) ([bibtex: Chen-2019-MES](#)).
114. Behavioral inhibition corresponds to white matter fiber bundle integrity in older adults. Paola M Garcia-Egan, Rebecca Preston-Campbell, Lauren E Salminen, Jodi M Heaps-Woodruff, Lila Balla, Ryan Cabeen, David H. Laidlaw, Thomas E Conturo, and Robert H Paul. *Brain imaging and behavior*, 13(6):1602–1611, 2019. ([pdf](#)) ([bibtex: Garcia-2019-BIC](#)).
113. Developing virtual reality visualizations for unsteady flow analysis of dinosaur track formation using scientific sketching. Johannes Novotny, Joshua Tveite, Morgan L. Turner, Stephen Gatesy, Fritz Drury, Peter Falkingham, and David H. Laidlaw. *IEEE Transactions on Visualization and Computer Graphics*, 25(5):2145–2154, May 2019. ([pdf](#)) ([bibtex: Novotny-2019-DVR](#)).
112. Preliminary mapping of the structural effects of age in pediatric bipolar disorder with multimodal mr imaging. Ryan Cabeen, David H. Laidlaw, Amanda Ruggieri, and Daniel P Dickstein. *Psychiatry Research: Neuroimaging*, 2018. ([pdf](#)) ([bibtex: Cabeen-2018-PMS](#)).
111. An analysis of automated visual analysis classification: Interactive visualization task inference of cancer genomics domain experts. Connor Gramazio, Jeff Huang, and David H. Laidlaw. *IEEE Transactions on Visualization and Computer Graphics*, 24(8), August 2018. ([pdf](#)) ([bibtex: Gramazio-2018-AAV](#)).
110. Topic-based exploration and embedded visualizations for research idea generation.

Hua Guo and David H. Laidlaw. *IEEE Transactions on Visualization and Computer Graphics*, 2018. ([pdf](#)) ([bibtex: Guo-2018-TEE](#)).

109. Relating task demand, mental effort and task difficulty with physicians performance during interactions with electronic health records (EHRs). Prithima Reddy Mosaly, Lukasz M Mazur, Fei Yu, Hua Guo, Derek Merck, David H. Laidlaw, Carlton Moore, Lawrence B Marks, and Javed Mostafa. *International Journal of Human-Computer Interaction*, pages 1–9, 2018. ([pdf](#)) ([bibtex: Mosaly-2018-RTD](#)).

108. Towards placental surface vasculature exploration in virtual reality. Johannes Novotny, Wesley R. Miller, Francois I Luks, Derek Merck, Scott Collins, and David H. Laidlaw. *IEEE Computer Graphics and Applications*, 2018. ([pdf](#)) ([bibtex: Novotny-2018-TPS](#)).

107. Topological organization of whole-brain white matter in HIV infection. Laurie M. Baker, Sarah A. Cooley, Ryan Cabeen, David H. Laidlaw, John A. Joska, Jacqueline Hoare, Dan J. Stein, Jodi M. Heaps-Woodruff, Lauren E Salminen, and Robert H. Paul. *Brain connectivity*, March 2017. ([pdf](#)) ([bibtex: Baker-2017-TOW](#)).

106. Cognitive reserve moderates the relationship between neuropsychological performance and white matter fiber bundle length in healthy older adults. Laurie M. Baker, David H. Laidlaw, Ryan Cabeen, Erbil Akbudak, Thomas E Conturo, Stephen Correia, David F. Tate, Jodi M Heaps-Woodruff, Mathew R Brier, Jacob Bolzenius, Lauren E Salminen, Elizabeth M Lane, Amanda R McMichael, and Robert H Paul. *Brain Imaging and Behavior*, June 2017. ([pdf](#)) ([bibtex: Baker-2017-CRM](#)).

105. White matter fiber bundle lengths are shorter in cART naive HIV: an analysis of quantitative diffusion tractography in South Africa. Jodi M Heaps-Woodruff, John Joska, Ryan Cabeen, Laurie M. Baker, Lauren E Salminen, Jacqueline Hoare, David H. Laidlaw, Rachel Wamser-Nanney, Chun-Zi Peng, Susan Engelbrecht, Sorava Seedat, Dan J Stein, and Robert H Paul. *Brain Imaging and Behavior*, June 2017. ([pdf](#)) ([bibtex: Heaps-2017-WMF](#)).

104. Relating task demand, mental effort and task difficulty with physicians performance during interactions with electronic health records (EHRs). Prithima Reddy Mosaly, Lukasz M Mazur, Fei Yu, Hua Guo, Derek Merck, David H. Laidlaw, Carlton Moore, Lawrence B Marks, and Javed Mostafa. *International Journal of Human-Computer Interaction*, pages 1–9, 2017. ([pdf](#)) ([bibtex: Mosaly-2017-RTD](#)).

103. Vulnerability of white matter tracts and cognition to the SOD2 polymorphism: A preliminary study of antioxidant defense genes in brain aging. Lauren E. Salminen, Peter R Schofield, Kerrie D Piere, Steven E Bruce, Michael G Griffin, David F. Tate, Ryan Cabeen, David H. Laidlaw, Thomas E Conturo, Jacob D Bolzenius, and Robert H. Paul. *Behavioral Brain Research*, June 2017. ([pdf](#)) ([bibtex: Salminen-2017-VWM](#)).

102. Application of a novel quantitative tractography-based analysis of diffusion tensor imaging to examine fiber bundle length in human cerebral white matter. Laurie M. Baker, Ryan Cabeen, Sarah Cooley, David H. Laidlaw, and Robert H. Paul. *Technology & Innovation*, May 2016. ([pdf](#)) ([bibtex: Baker-2016-ANQ](#)).

101. A comparative evaluation of voxel-based spatial mapping in diffusion tensor imaging. Ryan Cabeen, Mark E Bastin, and David H. Laidlaw. *NeuroImage*, 2016. published ([pdf](#)) ([bibtex: Cabeen-2016-CEV](#)).

100. Fauxvea: Crowdsourcing gaze estimates for visualization analysis tasks. Steven R. Gomez, Radu Jianu, Ryan Cabeen, Hua Guo, and David H. Laidlaw. *IEEE Transactions on Visualization and Computer Graphics*, February 2016. (pdf) (bibtex: Gomez-2016-FCG).
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98. Neuroimaging abnormalities in clade C HIV are independent of Tat genetic diversity. Robert H. Paul, Sarah Phillips, Jacqueline Hoare, David H. Laidlaw, Ryan Cabeen, Gayla R. Olbricht, Yuqing Su, Dan J. Stein, Susan Engelbrecht, Sorava Seedat, Lauren E. Salminen, Laurie M. Baker, Jodi Heaps, and John Joska. *Journal of NeuroVirology*, 2016. (pdf) (bibtex: Paul-2016-NAC).
97. Kernel regression estimation of fiber orientation mixtures in diffusion mri. Ryan Cabeen, Mark E Bastin, and David H. Laidlaw. *NeuroImage*, 127:158–172, 2016. (bibtex: Cabeen-2015-KRE).
96. Permutation and parametric tests for effect sizes in voxel-based morphometry of grey matter volume in brain structural mri. David Alexander Dickie, Shadia Mikhael, Dominic E. Job, Joanna M. Wardlaw, David H. Laidlaw, and Mark Bastin. In *Magnetic Resonance Imaging*, 2015. (pdf) (bibtex: Dickie-2015-PPT).
95. A case study using visualization interaction logs and insight metrics to understand how analysts arrive at insights. Hua Guo, Steven R. Gomez, Caroline Ziemkiewicz, and David H. Laidlaw. In *Proceedings of IEEE VAST*, 2015. (pdf) (bibtex: Guo-2015-CSU).
94. Representing uncertainty in graph edges: An evaluation of paired visual variables. Hua Guo, Jeff Huang, and David H. Laidlaw. *IEEE Transactions on Visualization and Computer Graphics*, 2015. (pdf) (bibtex: Guo-2015-RUG).
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92. The articular morphology of the first caprrometacarpal joint does not differ between men and women, but changes with aging and early osteoarthritis. Eni Halilaj, Douglas Moore, David H. Laidlaw, Christopher J. Got, Amy L. Ladd, Arnold-Peter C. Weiss, and jcrisco. *Journal of Biomechanics*, pages Vol.47(11): pp 2709–14, 2015. published (bibtex: Halilaj-2015-OAW).
91. Magi: visualization and collaborative annotation of genomic aberrations. Mark D.M. Leiserson, Connor Gramazio, Jason Hu, Hsin-Ta Wu, David H. Laidlaw, and Benjamin J. Raphael. *Nature Methods*, 12(6):483–484, 2015. (pdf) (bibtex: Leiserson-2015-MVC).
90. Imaging signatures of meningioma and low-grade glioma: a diffusion tensor, magnetization transfer and quantitative longitudinal relaxation time MRI study. Rory J. Piper, Shadia Mikhael, Joanna M. Wardlaw, David H. Laidlaw, Ian R. Whittle, , and Mark E. Bastin. *Magnetic Resonance Imaging*, 2015. (pdf) (bibtex: Piper-2015-ISM).
89. Genetic markers of cholesterol transport and gray matter diffusion: A preliminary study of the cetp i405v polymorphism. Lauren E. Salminen, Peter R. Schofield, Kerrie D. Pierce,

- Thomas E. Conturo, David H. Laidlaw, Ryan Cabeen, Elizabeth M. Lane, Jodi M. Heaps, Jacob D. Bolzenius, Laurie M. Baker, Xi Luo, Erbil Akbudak, and Robert H. Paul. *Journal of Neural Transmission*, pages 1–12, August 2015. ([bibtex: Salminen-2015-GMC](#)).
88. Neuromarkers of the common angiotensinogen polymorphism in healthy older adults: A comprehensive assessment of white matter integrity and cognition. Lauren Salminen, Peter Schofield, Kerrie Pierce, Yi Zhao, Xi Luo, Youdan Wang, David H. Laidlaw, Ryan Cabeen, Thomas Conturo, David Tate, Erbil Akbudak, Elizabeth Lane, Jodi Heaps, Jacob Bolzenius, Laurie Baker, Lee Cagle, and Robert Paul. *Behavioural Brain Research*, August 2015. ([pdf](#)) ([bibtex: Salminen-2015-NCA](#)).
87. Regional age differences in gray matter diffusivity among healthy older adults. Lauren E. Salminen, Thomas Conturo, David H. Laidlaw, Ryan Cabeen, Erbil Akbudak, Elizabeth Lane, Jodi Heaps, Jacob Bolzenius, Laurie Baker, Sarah Cooley, Staci Scott, Lee Cagle, Sarah Phillips, and Robert H. Paul. *Brain Imaging and Behavior*, April 2015.
86. White matter changes with age utilizing quantitative diffusion mri. Laurie M. Baker, David H. Laidlaw, Thomas E. Conturo, Joseph Hogan, Yi Zhao, Xi Luo, Stephen Correia, Ryan Cabeen, Elizabeth M. Lane, Jodi M. Heaps, Jacob Bolzenius, Lauren E. Salminen, Erbil Akbudak, Amanda R. McMichael, Christina Usher, Ashley Behrman, and Robert H. Paul. *Neurology*, June 2014. ([pdf](#)) ([bibtex: Baker-2014-WMC](#)).
85. Fiber bundle length and cognition: A length-based tractography mri study. Ashley M. Behrman, Christina Usher, Thomas E. Conturo, Stephen Correia, David H. Laidlaw, Elizabeth M. Lane, Jacob Bolzenius, Jodi M. Heaps, Lauren E. Salminen, Laurie M. Baker, Ryan Cabeen, Erbil Akbudak, Xi Luo, Peisi Yan, and Robert H. Paul. *Brain Imaging and Behavior*, 2014. ([pdf](#)) ([bibtex: Behrman-2014-FBL](#)).
84. Brain structure and cognitive correlates of body mass index in healthy older adults. Jacob D. Bolzenius, David H. Laidlaw, Ryan Cabeen, Thomas E. Conturo, Amanda R. McMichael, Elizabeth M. Lane, Jodi M. Heaps, Lauren E. Salminen, Laurie M. Baker, Staci E. Scott, Sarah A. Cooley, John Gunstad, and Robert H. Paul. *Behavioral Brain Research*, 2014. ([pdf](#)) ([bibtex: Bolzenius-2014-BSC](#)).
83. Posterior brain white matter abnormalities in older adults with probable mild cognitive impairment. Sarah A. Cooley, Ryan Cabeen, David H. Laidlaw, Elizabeth M. Lane, Jodi M. Heaps, Jacob D. Bolzenius, Laurie M. Baker, Lauren E. Salminen, Staci E. Scott, and Robert H. Paul. *Journal of Clinical and Experimental Neuropsychology*, 2014. ([pdf](#)) ([bibtex: Cooley-2014-PBW](#)).
82. Visual embedding: A model for visualization. Cagatay Demiralp, Carlos E Scheiddeger, Gordon L Kindlmann, David H. Laidlaw, and Jeffrey Heer. *IEEE Computer Graphics and Applications*, 20(1), January 2014. ([bibtex: Demiralp-2014-VEM](#)).
81. The relation between visualization size, grouping, and user performance. Connor Gramazio, Karen B. Schloss, and David H. Laidlaw. In *IEEE Transactions on Visualization and Computer Graphics*, volume 20, pages 1953–1962, 2014. ([pdf](#)) ([bibtex: Gramazio-2014-RVS](#)).
80. Polar histograms of curvature for quantifying skeletal joint shape and congruence. Eni Halilaj, David H. Laidlaw, Douglas Moore, and jcrisco. *Journal of Biomechanical Engineering*, pages 136(9), 094503, 2014. published ([pdf](#)) ([bibtex: Halilaj-2014-JBE](#)).

79. Variation and genetic control of gene expression in primary immunocytes across inbred mouse strains. Sara Mostafavi, Adriana Ortiz-Lopez, Molly A Bogue, Kimie Hattori, Cristina Pop, Daphne Koller, Diane Mathis, Christophe Benoist, David A Blair, Michael L Dustin, David H. Laidlaw, et al. *The Journal of Immunology*, 193(9):4485–4496, 2014. ([bibtex: Mostafavi-2014-VGC](#)).
78. Impact of body mass index on neuronal fiber bundle lengths among healthy older adults. Jacob D. Bolzenius, David H. Laidlaw, Ryan Cabeen, Thomas E. Conturo, Amanda R. McMichael, Elizabeth M. Lane, Jodi M. Heaps, Lauren E. Salminen, Laurie M. Baker, John Gunstad, and Robert H. Paul. *Brain Imaging and Behavior*, 2013. ([bibtex: Bolzenius-2013-IBM](#)).
77. Composing DTI visualizations with end-user programming. Haipeng Cai, Jian Chen, Alexander P. Auchus, and David H. Laidlaw. *arXiv preprint arXiv:1310.2923*, 2013.
76. Differential splicing across immune system lineages. A Ergun, G Doran, J C Costello, H H Paik, J J Collins, D Mathis, C Benoist, D A Blair, M L Dustin, S A Shinton, R R Hardy, T Shay, A Regev, N Cohen, P Brennan, M Brenner, F Kim, T Nageswara Rao, A Wagers, T Heng, J Ericson, K Rothamel, A Ortiz-Lopez, T Kreslavsky, A Fletcher, K Elpek, A Bellemare-Pelletier, D Malhotra, S Turley, J Miller, B Brown, M Merad, E L Gautier, C Jakubzick, G J Randolph, P Monach, A J Best, J Knell, A Goldrath, V Jojic, D Koller, David H. Laidlaw, J Collins, R Gazit, D J Rossi, N Malhotra, K Sylvia, J Kang, N A Bezman, J C Sun, G Min-Oo, C C Kim, and L L Lanier. *Proceedings of the National Academy of Sciences*, 110(35):14324–14329, 2013. ([bibtex: Ergun-2013-DSA](#)).
75. What google maps can do for biomedical data dissemination: examples and a design study. Radu Jianu and David H. Laidlaw. *BMC research notes*, 6(1):1–14, 2013. ([bibtex: Jianu-2013-WGM](#)).
74. Identification of transcriptional regulators in the mouse immune system. V Jojic, T Shay, K Sylvia, O Zuk, X Sun, J Kang, A Regev, D Koller, A J Best, J Knell, A Goldrath, N Cohen, P Brennan, M Brenner, F Kim, T N Rao, A Wagers, T Heng, J Ericson, K Rothamel, A Ortiz-Lopez, D Mathis, C Benoist, N A Bezman, J C Sun, G Min-Oo, C C Kim, L L Lanier, J Miller, B Brown, M Merad, E L Gautier, C Jakubzick, G J Randolph, P Monach, D A Blair, M L Dustin, S A Shinton, R R Hardy, David H. Laidlaw, J Collins, R Gazit, D J Rossi, N Malhotra, T Kreslavsky, A Fletcher, K Elpek, A Bellemare-Pelletier, D Malhotra, and S Turley. *Nature Immunology*, 14:633–643, 2013. ([bibtex: Jojic-2013-ITR](#)).
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K Kobayashi, H Boehmer, D Mathis, C Benoist, A J Best, J Knell, A Goldrath, V Jojic, D Koller, T Shay, A Regev, N Cohen, P Brennan, M Brenner, F Kim, T N Rao, A Wagers, K Rothamel, A Ortiz-Lopez, N A Bezman, J C Sun, G Min-Oo, C C Kim, L L Lanier, J Miller, B Brown, M Merad, E L Gautier, C Jakubzick, G J Randolph, P Monach, D A Blair, M L Dustin, S A Shinton, R R Hardy, David H. Laidlaw, J Collins, R Gazit, D J Rossi, N Malhotra, K Sylvia, J Kang, A Fletcher, K Elpek, A Bellemare-Pelletier, D Malhotra, and S Turley. *Nature Immunology*, 14:619–632, 2013. (bibtex: [Mingueneau-2013-TLA](#)).

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Other

Publications

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6. Modeling the flight of a bat. David J. Willis, Mykhaylo Kostandov, Daniel K. Riskin, Jaime Peraire, David H. Laidlaw, Sharon Swartz, and Kenneth S. Breuer. *Science Magazine. 2007 Visualization Challenge Winner. Informational Graphics.*, 317:1860, September 2007. ([bibtex: Willis-2007-MFB](#)).
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4. Nonphotorealistic rendering in scientific visualization. Christopher G. Healey, Victoria Interrante, davidkremers, David H. Laidlaw, and Penny Rheingans. In *Course Notes of SIGGRAPH 2001*, volume Course 32, August 2001. ([pdf](#)) ([bibtex: Healey-2001-NRS](#)).
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Invited Lectures/Presentations

- 2018 Some Virtual Reality Toolsmithing for Science, National Institute of Standards and Technology, September
- The Yurt and OpenSpace for Mars Planning, American Museum of Natural History Dept of Astrovisualization, August
- Dagstuhl Foundations of Visualization Seminar, January
- 2017 Big-metal Virtual Reality Magic: Tours versus Expeditions, Gordon Research Conference on Scientific Visualization for Decision Making, 9 August
- Scientific Visualization in Virtual Reality, Simons Foundation Center for Computational Astrophysics Scientific Visualization Conference, 25 October, 2017.
- 2014 Dagstuhl Scientific Visualization Seminar, June
- Shonan Meeting on Computer Visualization: Concepts and Challenges, March
- 2012 MIT, “Exploratory Scientific Visualization,” May
- 2011 Dagstuhl seminar on multivalued data, “What Summarizes a Diffusion MRI Dataset? (to a medical researcher)”, December
- Purdue, Samuel D. Conte Distinguished Lecture, “The Ultimate Visualization Display”, November
- IEEE VisWeek Conference, October
- 2010 University of New Hampshire, “A Show and Tell of Visualization Research at Brown”, with Cagatay Demiralp and Radu Jianu
- Diffusion MRI of Traumatic Brain Injury (TBI) Roadmap Workshop, Chicago, June, “We’ve got the solution! So, what’s your problem? Roadblocks to clinical use of diffusion MRI for TBI”
- Aptima, June, “A Theory of Scientific and Information Visualization: 10+50 Years in the Making”
- 2009 Tensor Dagstuhl, Germany, June
- Illustravis Workshop, Bergen Norway, June
- Visualization Dagstuhl, Germany, May
- 2008 IEEE Visualization Capstone, October
- Stowers Institute for Medical Research, October
- RISD Teaching Symposium, April
- Mississippi State University, March

- 2007 Washington University, St. Louis, November
 IEEE Visualization Conference, October
 Visualization Dagstuhl, May
 Tensor Dagstuhl, January
- 2006 IEEE Visualization Conference, October
- 2005 Joint Greater Boston ACM and IEEE Seminar, December
 Physical Chemistry Seminar, Brown, November
 Biostatistics Seminar, Brown, November
 IEEE Visualization Conference, October
 Dagstuhl, June
 Dynamic Data-Driven Application Systems Workshop, International Conference on Computational Science, Atlanta, May
 National Academy of Engineering, German American Frontiers of Engineering Symposium, Potsdam, May
 VRVis Seminar, Vienna, May
 Image and Meaning II Conference, Los Angeles, June
 Visual Analytics Panel, AAAS, Washington DC, February
- 2004 IEEE Visualization Conference, October
 Brown CS 25th Anniversary, May
 University of Kaiserslautern, April
 Dagstuhl Diffusion Imaging and Visualization Symposium, April
 Wayland Collegium, March
 Winter Conference on Brain Research, January
- 2003 SIAM Geometry Conference, November
 Imaging 2020 Conference, September
 Dagstuhl Visualization Symposium, June
 Princeton University, May
 Siemens Corporate Research, May

- 2002 University of New Hampshire, October
Fraunhofer Center for Research in Computer Graphics (CRCG), February
- 2001 Carnegie Mellon University, November
Brown Inauguration, October
MIT Image and Meaning Conference, June
University of Edinburgh, April
- 2000 NIH Diffusion Tensor Magnetic Resonance Imaging Conference, December
- 1998 NSF Conference on Computing in the Life Sciences, Pomona College, April
Naval Research Lab, May
Brown University Computer Science, April
University of Southern California, April
- 1997 NSF Science and Technology Center for Computer Graphics and Visualization, January
- 1996 Human Brain Project Annual Meeting, NIH, May
University of Washington, April
- 1995 Human Brain Project Annual Meeting, NIH, May
- 1988 Naval Underwater Systems Center, Newport, RI
Seattle local IEEE meeting
- 1985 Apple Computer

Films and

- Videos** “Bearly Growing,” with the Caltech Graphics Group, Siggraph Video Review, August, 1995.
- “Fruit Tracing,” with the Caltech Graphics Group, Siggraph Electronic Theater, August, 1993.
- “[The Hypersphere: Foliations and Projections](#),” with Thomas Banchoff, Hüseyin Koçak, Frederic Bisshopp and David Margolis, Siggraph Animation Screening, 1985; Siggraph Video Review, 1986; Siggraph Art Show, 1986; also shown at numerous mathematics conferences.
- “Topology and Mechanics: Flows on the Torus,” with Thomas Banchoff, Hüseyin Koçak and Frederic Bisshopp, Honors Thesis, Brown University, December, 1983.

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“Human Hand,” “Peeling Banana,” “Volume Rendered Jade Plant,” “Computationally Stained Brain Slice,” and “Computationally Stained Brain Slice 2,” with Matthew J. Avalos, David B. Kirk, John Snyder, Adam R. Woodbury and Alan H. Barr, Siggraph Technical Slide Set, 1992.

“Sphere and Hypersphere,” with Hüseyin Koçak , cover for *Mathematical Intelligencer*, 9(1), 1987; Szymanski, *Introduction to Computers*, Merrill Publishing Co., Columbus, 1988.

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“Tubes within Tubes,” with Hüseyin Koçak, Siggraph Art Show, 1986; Szymanski, *Computers and Application Software*, Merrill Publishing Co., Columbus, 1988.

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“Cyclides of Dupin,” with Thomas Banchoff, Hüseyin Koçak, Frederic Bisshopp and David Margolis, record jacket for “Letters to a Friend,” and “Adman’s Dream,” I Start Counting, Mute Records, London, 1984; book jacket for *The Fourth Dimension: Towards a Geometry of Higher Reality*, Rudy Rucker, Houghton Mifflin, New York, 1984; *ID: Magazine of International Design*, 32(1), January-February, 1985, 71; cover of *Understanding Computers*, Time-Life Books, New York, 1987; *Recent Revolutions in Mathematics*, Albert Stwertka, Franklin Watts, New York, 1987, 92-93; *The Mathematical Tourist*, Ivars Peterson, W. H. Freeman and Co., New York, 1988, 96.

“Swallowtail Catastrophe,” “Figure Eight Klein Bottle,” “Focal Surfaces of the Ellipsoid,” “Veronese Surface,” with Thomas Banchoff, *Perspectives in Mathematics, Anniversary of Oberwolfach 1984*, Birkhäuser, Boston, 1984, 43-60.

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“Sinusoidal Surface,” with Thomas Banchoff and David Margolis, cover for *Calculus with Analytic Geometry*, M. A. Munem and D. J. Foulis, Worth Publishers Inc., New York, 1984.

“World in Perspective,” with Thomas Banchoff, cover for John Hancock Annual Report, 1984.

“Infinite Torus,” with Thomas Banchoff, Hüseyin Koçak and Frederic Bisshopp, cover for *Sunday Journal Magazine*, Providence Journal, October 14, 1984.

“Veronese Surface and a Polyhedral Model,” with Thomas Banchoff and David Salesin, cover for *Mathematical Intelligencer*, 5(3), 1983.

Research Grants and Contracts “Immersive Visualization and 3D Interaction for Volume Data Analysis,” ~\$250K, PI on collaborative NSF award with Doug Bowman, August 2013 – July 2016.

“Adaptive Agents for Real-time Data-driven Visualization & Analysis for Relevant Knowledge (AARDVARK),” ~\$100K, PI on followon subcontract to ONR SBIR Contract to Aptima, Inc., November 2012 – Feb 2014.

“Adaptive Agents for Real-time Data-driven Visualization & Analysis for Relevant Knowledge (AARDVARK),” \$25K, PI on subcontract to ONR SBIR Phase I Contract to Aptima, Inc., December 2010 – June 2011.

“Supporting Knowledge Discovery through a Scientific Visualization Language,” \$262K, PI (collaborative), NSF IIS-10-16623 November 2010 – October 2014

“Thumb CMC Biomechanics and Early OA Progression,” PI on subcontract to NIH award, JJ Crisco PI at RIH.

“MRI: Development of a Next-Generation Interactive Virtual-Reality Display Environment for Science,” \$2M, PI NSF OCI-09-23393, September 2009 – September 2015

“Neuropathogenesis of clade C HIV in South Africa,” \$2M, PI NSF OCI-09-23393, \$506K of \$3.1M, PI on subcontract to NIH award 1R01MH085604-01A2, July 2009 – June 2015

“ImmGen: a gene expression compendium for immune cells,” \$673K of \$2M, subcontract to NIH R24 Award AI072073-01A1, September 2007 – August 2011

“Bat Wing Structure and the Aerodynamic Mechanisms of Flapping Flight”, Co-PI (Sharon Swartz PI), NSF IOS-0702392, \$280K, September 2007 – August 2010

“Age Effects on HIV associated Brain Dysfunction,” PI on subcontract from Miriam Hospital to Brown, NIH , \$100K of \$1.4M, October 2006 – September 2010.

“A Proposal to Design and Build a Dynamic 3-D Skeletal Imaging System,” Co-PI (Beth Brainerd PI), William M. Keck Foundation, \$1.8M, January 2007 – January 2010.

“IDBR: Hardware and Software Development for 3D Visualization of Rapid Skeletal Motion in Vertebrate Animals,” Co-PI, (Beth Brainerd, PI), NSF Award DBI-05-52051, \$345K. June 2006 – May 2009.

“3-D Multi-Articular Models of the Carpus,” PI on subcontract from Rhode Island Hospital to Brown, NIH, \$450K of \$2M, April 2006 – February 2009.

“High-speed X-ray Imaging Facility for Musculoskeletal Biomechanics Research” Co-PI (Beth Brainerd, PI) Brown Research Seed Funding, \$100K, January 2006 – December 2006.

“MRI+DTI-Based Tools for Analyzing White Matter Variation”, PI, NIH Award EB4155A1, \$2M. October 2005 – July 2009.

“DDDAS-TMRP Interactive Data-driven Flow-simulation Parameter Refinement for Understanding the Evolution of Complex Systems”, PI, NSF Award CCR-0540266, \$100K, January 2006 – December 2006.

“Acquisition of a 3T MRI System”, Co-PI, NSF Award BCS-0521432, \$2M, September 2005 – August 2006.

Metrics for Quantifying White Matter Variation: Image Analysis, Testing, and Application, PI, Brown Research Seed Funding, \$100K, January 2005 – January 2006.

“TR: Computational simulation, modeling, and visualization for understanding unsteady bioflows,” PI, NSF Award CNS-0427374, \$650K, October 2004 – September 2009.

Aerodynamic mechanisms of bat flight: an integrated multidisciplinary approach, Co-PI (Sharon Swartz, PI), Brown Salomon Award, \$20K, 2004.

“TR Collaborative Research: Perceptual Optimization for Data Visualization,” PI, NSF Award CCR-0324306, \$104K, September 2003 – August 2006.

“CAREER: Shape Capture and Modeling for Wrist Dynamics and Ancient Pottery Analysis using Manifolds”, PI, NSF CAREER Award CCR-0093238, \$324K, March 2001 – February 2007.

“Normal and Abnormal In Vivo Carpal Bone Motion,” PI on subcontract from Rhode Island Hospital to Brown, NIH AR44005, \$650K of \$2.4M, April 2001 – February 2006.

“TR: Visualization of Multi-valued Scientific Data: Applying Ideas from Art and Perceptual Psychology,” PI, NSF Award CCR-0086065, \$2,296,599 September 2000 – August 2004.

“Visualization for Software Understanding,” NSF Award ACI-9982266, Co-PI, (Steve Reiss, PI), \$559,212, October 1999 – September 2002.

“3D Free-Form Models for Geometric Recovery and Application to Archaeology,” NSF Award BCS-9980091, Co-PI (David Cooper, PI) \$1,370,870, September 1999 – January 2003.

“Multi-valued MRI Acquisition, Visualization, and Dissemination,” PI on subcontract from Caltech to Brown, Human Brain Project, \$400K of \$4M, October 1998 – September 2003.

“Computer Graphics Tools for Understanding Tensor-Valued Volume Data: A Painting Metaphor,” PI, NSF CCR-9619649, \$140K, March 1997 – February 2001.

Professional Service

2022 Area Curation Committee, IEEE Visualization Conference, 2022

- Program Committee, IEEE Visualization 2022
- Session Chair, IEEE Visualization 2022
- Program Committee, Eurovis 2022
- Best Paper Committee, Eurovis 2022
- NIH 2-day Proposal Review Study Section
- DOE 1-day Grant Proposal Review Meeting
- More faculty promotion letters than usual
- 2021 Program Committee, Eurovis 2021
- Program Committee, Scivis 2021
- Ad hoc reviewing for various journals and conferences
- 2020 Program Committee, Eurovis 2020
- Program Committee, Scivis 2020
- Ad hoc reviewing for various journals and conferences
- 2019 Program Committee, 9th EG Workshop on Visual Computing for Biology and Medicine (VCBM) 2019
- Program Committee, IEEE SciVis 2019
- Best Paper Committee, IEEE SciVis 2019
- Reviewing for journals and conferences
- 2018 Program Committee, IEEE VAST 2018
- Best Paper Committee, IEEE SciVis 2018
- Program Committee, Eurovis 2019
- Program Committee, 8th EG Workshop on Visual Computing for Biology and Medicine (VCBM) 2018
- Reviewing for IEEE Fellow applications
- Reviewing for journals and conferences
- External Reviewer for University of Illinois, Chicago (UIC) Software Technologies Research Center (SDRC) within the Electronic Visualization Lab (EVL)
- 2017 Program Committee, IEEE SciVis 2017
- Reviewing for journals and conferences

- VGTC Awards Committee
- 2016 Program Committee, IEEE SciVis 2016
 Reviewing for journals and conferences
- 2015 Program Committee, IEEE SciVis 2015
 Program Committee, Eurovis 2015
 Reviewing for numerous journals and conferences
- 2014 Conference Chair, IEEE SciVis 2014
 NIH grant reviewing
 Reviewing for numerous journals and conferences
- 2013 Papers Co-Chair, IEEE Visualization 2013
 Conference Chair, IEEE SciVis 2014
 Program Committee, Eurovis 2013
 Reviewing for numerous journals and conferences
 NSF Review Panel
 Other grant reviewing
- 2012 Papers Co-Chair, IEEE Visualization 2013
 Program Committee, Eurovis 2013
 Reviewing for IEEE Transactions on Visualization and Computer Graphics, IEEE SciVis, IEEE Information Visualization, IEEE VAST, PLOS
 Technical advising for Iowa State Virtual Reality Application Center (VRAC) and for University of North Carolina Chapel Hill Computer Integrated Systems for Microscopy and Manipulation (CISMM) Center.
- 2011 Conference Chair, IEEE Visweek 2011
 Papers Co-Chair, IEEE Visualization 2012
 Program Committee, Eurovis 2012
 Reviewing for IEEE Transactions on Visualization and Computer Graphics, IEEE Visualization, IEEE Information Visualization, IEEE VAST, ACM Computer Graphics and Applications
 Grant Proposal Reviewing for Qatar

- 2010 Conference Chair, IEEE Visweek 2011
 Reviewing for IEEE Transactions on Visualization and Computer Graphics, IEEE Visualization, NeuroImage
- 2009 Conference Chair, IEEE Visweek 2011
 Organizer, Dagstuhl Tensor Seminar
 Reviewing for IEEE Transactions on Visualization and Computer Graphics, IEEE Visualization
- 2008 Papers Co-Chair, International Workshop on Volume Graphics (VG) '08
 Program Committee, IEEE Visualization '08 Conference
 Program Committee, ACM SIGGRAPH Symposium on Interactive 3D Graphics and Games '09 (I3D)
 Program Committee, Non-Photorealistic Animation and Rendering (NPAR) '08
 Program Committee, 2008 International Conference on Image Processing, Computer Vision, and Pattern Recognition
 Program Committee, Computer Graphics and Visualization (CGV) '08
 Program Committee, International Conference on Computer Graphics Theory and Applications (GRAPP) '08
 Program Committee, International Symposium on Visual Computing (ISCV) '08
 NIH study section, July
 Reviewing for ACM SIGGRAPH, IEEE Transactions on Visualization and Computer Graphics, IEEE Visualization
- 2007 Co-Chair, Papers, International Workshop on Volume Graphics (VG) '08
 Sketches and Posters Committee, SIGGRAPH '07
 Organizer, Dagstuhl Tensor Seminar
 Program Committee, International Conference on Computer Graphics Theory and Applications (GRAPP) '07
 Program Committee, Computer Graphics and Visualization (CGV) '07
 Program Committee, Non-Photorealistic Animation and Rendering (NPAR) '07
 Reviewing for ACM SIGGRAPH, IEEE Transactions on Visualization and Computer Graphics, IEEE Transactions on Medical Imaging (TMI), Communications of the ACM, IEEE Visualization, International Workshop on Volume Graphics, International Society for Magnetic Resonance in Medicine Annual Meeting, Elsevier.

- 2006 Associate Editor, IEEE Trans. on Visualization and Computer Graphics (TVCG)
- Best Poster Committee, IEEE Visualization '06 Conference.
- Program Committee, International Conference on Computer Graphics Theory and Applications (GRAPP) '07
- Program Committee, International Workshop on Volume Graphics (VG) '07
- Paper reviewing for ACM SIGGRAPH (papers and courses), IEEE Transactions on Visualization and Computer Graphics, IEEE Transactions on Medical Imaging (TMI) IEEE Computer Graphics and Applications, IEEE Visualization (regular and applications papers), IEEE Symposium on Visual Analytics Science and Technology, International Workshop on Volume Graphics, International Society for Magnetic Resonance in Medicine Annual Meeting, GRAPP, Elsevier.
- 2005 Associate Editor, IEEE Trans. on Visualization and Computer Graphics (TVCG)
- Program Committee, Symposium on Interactive 3D Graphics and Games (I3D) '06
- Program Committee, IEEE Visualization '05
- Co-Chair, Posters Committee, IEEE Visualization '05
- Best Papers Committee, IEEE Visualization '05
- Program Committee, Computer Graphics International (CGI) '05
- Program Committee, International Conference on Computer Graphics Theory and Applications (GRAPP) '06
- Program Committee, International Workshop on Volume Graphics '06
- Session Chair, Visualization '05
- Paper reviewing for ACM SIGGRAPH (papers and courses), IEEE Computer Graphics and Applications, IEEE Transactions on Visualization and Computer Graphics, IEEE Visualization (regular and applications papers), ACM I3D, CGI, GRAPP, Elsevier, Dagstuhl.
- Grant proposal reviewing for the Dutch National Research Council.
- Continued invited contributed to the development of a national research agenda for visualization and analysis tools in the service of homeland security; resulting book, *Illuminating the Path*, became RFP for regional homeland-security research centers.
- Continued invited participation in a joint NIH- and NSF-sponsored effort to define and author a research agenda entitled *Visualization Research Challenges*. It encompasses visualization and its applications broadly across many disciplines.
- 2004 Associate Editor, IEEE Trans. on Visualization and Computer Graphics (TVCG)
- Program Committee, Symposium on Interactive 3D Graphics and Games (I3D) '05

- Program Committee, Computer Graphics International '05
- Program Committee, IEEE Visualization '04
- Co-Chair, Posters Committee, IEEE Visualization '04
- Associate Chair, Posters Committee, SIGGRAPH '04
- Session Chair, Visualization '04
- Paper reviewing for ACM SIGGRAPH, IEEE Computer Graphics and Applications, IEEE Transaction on Medical Imaging, IEEE Transactions on Visualization and Computer Graphics. IEEE Visualization (regular and applications papers), ACM I3D, Dagstuhl Perspectives Workshop: Visualization and Image Processing of Tensor Fields
- Invited contributor to the development of a national research agenda for visualization and analysis tools in the service of homeland security.
- Invited participant in a joint NIH- and NSF-sponsored effort to define a research agenda for visualization in science and medicine.
- 2003 Associate Editor, IEEE Trans. on Visualization and Computer Graphics (TVCG)
- Program Committee, IEEE Visualization '03
- Co-Chair, Posters Committee, IEEE Visualization '03
- Co-Chair, Posters Committee, SIGGRAPH '04
- Paper reviewing for IEEE Computer Graphics and Applications Special Issue on NPR, ACM SIGGRAPH, ASME JCISE, IEEE CG&A,
- Proposal reviewer for AAAS
- Session Chair, Visualization '03
- 2002 Paper reviewing for SIGGRAPH '02, Graphics Interface '02, IEEE Visualization '02, IEEE Trans. on Medical Imaging, IEEE Computer Graphics and Applications, and CNS Spectrums
- October NIH Human Brain Project special study section (grant review panel)
- Session Chair at Visualization '02
- May NIH Human Brain Project special study section (grant review panel)
- 2001 Paper reviewing for SIGGRAPH '01, Visualization '01, ACM Non-Photorealistic Animation and Rendering (NPAR) '02
- External NSF grant reviewing.
- Session Chair at Visualization '01.

- NSF ITR grant review panel and external NSF grant reviewing.
- 2000 Program Committee, Joint Eurographics-IEEE TCVG Symposium on Visualization (Vis-Sym) '01.
- Paper reviewing for SIGGRAPH '00, Visualization '00, and GI'00.
- 1999 Paper reviewing for SIGGRAPH '99, Visualization '99, and UIST '99.
- Journal paper reviewing for IEEE Trans. on Visualization and Computer Graphics.
- Grant reviewing for the Wellcome Trust and the NIH.
- Chaired breakout meeting on “Software Component Testing and Comparison Specifications” for biological imaging tools. Human Brain Project annual meeting, NIH.
- 1998 Conference paper reviewing for SIGGRAPH '98, Visualization '98, and ACM SIGMOD DiSC.
- Journal paper reviewing for IEEE Trans. on Visualization and Computer Graphics.
- pre-1998 Reviewing for SIGGRAPH Conferences, Visualization Conferences, Volume Visualization Workshops, IEEE Transactions on Visualization and Computer Graphics, IEEE Computer Graphics and Applications, and Computer Aided Geometric Design.

Teaching and Research Advising

Ph.D. Graduates: Hua Guo, 2017; Connor Gramazio, 2017; Ryan Cabeen, 2017; Steven Gomez, 2016; Jadrian Miles, 2015; Cagatay Demiralp, 2013; Wenjin Zhou, 2012; Radu Jianu 2012; Daniel Acevedo, 2008; Daniel Keefe, 2007; Liz Marai, 2007; Song Zhang, 2006; Eileen Vote, 2001 (co-advised with Martha Joukowsky)

Ph.D. Candidates: Fumeng Yang, 2018; Johannes Novotny, 2014; Hua Guo, 2013; Ryan Cabeen, 2012; Steven Gomez, 2011; Wenjin Zhou, 2008; Jadrian Miles, 2008; Cagatay Demiralp, 2007; Radu Jianu, 2007; Daniel Acevedo, 2002; Daniel Keefe, 2000; Liz Marai, 2000; Song Zhang, 1999.

Postdoc Alumni: Caroline Ziemciewicz, Jian Chen, Cullen Jackson, Eileen Vote

Sc.M. Graduates: Joshua Tveite, 2017; Wesley Miller, 2016; Scott Houde, 2016; Timothy Parsons, 2015; Alicia Boucher, 2013; Trevor O'Brien, 2009; Andy Wald, 2008; Misha Kostandov, 2008; Ryan Boller, 2008; Devon Penney, 2007; Igor Pivkin, 2006; Vadim Slavin, 2005; David Eigen, 2004; Cagatay Demiralp, 2004; Eduardo Hueso, 2004; Jason Sobel, 2003; Andreas Wenger, 2002; Prabhat, 2001

Undergraduate Honors Theses: Elaine Jiang, 2019; Nathan Malkin, 2013; Stephanie Lee, 2005; Andrew McClain, 2003; Andrew Hull, 2003 (Visual Art); Rachel Weinstein, 2002; Jason Sobel, 2002; Marco da Silva, 2001; Danah Boyd, 2000

- 2022 [Interdisciplinary Scientific Visualization \(CSCI 2370\)](#)

[Virtual Reality Software Review](#)

Graduate Research Advising: Ziang Liu, Luna McNulty, Johannes Novotny, Brandon Woodard, Fumeng Yang

Undergraduate Research Advising: Aditya Agashe, Ross Briden, Kailiang Fu (honors), Tyler Gurth, Ben Homer (honors)

Reader: Atishay Jain, Ghulam Murtaza, Ji Won Chung

2021 [Interdisciplinary Scientific Visualization \(CSCI 2370\)](#)

[Virtual Reality Software Review](#)

Graduate Research Advising: Bardiya Akhbari (BME), Luna McNulty, Johannes Novotny, Anessa Petteruti, Brandon Woodard, Fumeng Yang

Undergraduate Research Advising: Aditya Agashe, Spencer Cheleden, Anessa Petteruti

Reader: Ghulam Murtaza, Martin Uildriks

2020 [Interdisciplinary Scientific Visualization \(CSCI 2370\)](#)

[Virtual Reality Software Review](#)

Graduate Research Advising: Bardiya Akhbari (BME), Johannes Novotny, Morgan Turner (EEB), Brandon Woodard, Fumeng Yang

Undergraduate Research Advising: Ross Briden, Spencer Cheleden, Brandon Li, Gabriel Marks, Ella Peterson, Anessa Petteruti, Ethan Sattler.

2019 [Virtual Reality Design for Science \(CSCI 1370\)](#)

[Virtual Reality Software Review](#)

Graduate Research Advising: Bardiya Akhbari (BME), Amber Chavannes, Johannes Novotny, Mohak Patel (ENGN), Morgan Turner (EEB), Brandon Woodard, Fumeng Yang

Undergraduate Research Advising: Ross Briden, Spencer Cheleden, Elaine Jiang, Brandon Li, Ella Peterson, Ethan Sattler, Rebecca Zuo

2018 [Interdisciplinary Scientific Visualization \(CSCI 2370\)](#)

[Virtual Reality Software Review](#)

Graduate Research Advising: Bardiya Akhbari (BME), Daniel Engel, Johannes Novotny, Mohak Patel (ENGN), Fumeng Yang

Reader: Bardiya Akhbari (BME quals), John Oberlin, Alexandra Papoutsaki, David Whitney (proposal), Emmanuel Zraggen.

Undergraduate Research Advising: Zachary Dixon, Elaine Jiang, Brandon Li

Undergraduate Independent Study: Emma Catlin, Devanshi Nishar, Raphael Reyes, Katya Schweigershausen, Shannon Ward

2017 [Virtual Reality Design for Science \(CSCI 1370\)](#)

Graduate Research Advising: Ryan Cabeen, Daniel Engel, Connor Gramazio, Steven Gomez, Hua Guo, Johannes Novotny, Eleanor Tursman, Joshua Tveite, Fumeng Yang

Undergraduate Research Advising: Zachary Dixon

2016 Data Structures and Algorithms, CSCI 0160

Graduate Research Advising: Ryan Cabeen, Connor Gramazio, Steven Gomez, Hua Guo, Johannes Novotny, Wesley Miller, Eleanor Tursman, Joshua Tveite, Fumeng Yang

Reader: Max Leiserson (CCMB)

2015 [Virtual Reality Design for Science \(CSCI 1370\)](#)

Data Structures and Algorithms, CSCI 0160

Graduate Research Advising: Ryan Cabeen, Connor Gramazio, Eni Halilaj (BME), Steven Gomez, Hua Guo, Jadrian Miles, Johannes Novotny, Timothy Parsons, Wesley Miller, Joshua Tveite

2014 [Interdisciplinary Scientific Visualization \(CSCI 2370\)](#)

Data Structures and Algorithms, CSCI 0160

Graduate Research Advising: Ryan Cabeen, Connor Gramazio, Eni Halilaj (BME), Steven Gomez, Hua Guo, Jadrian Miles, Johannes Novotny, Timothy Parsons, Wesley Miller

2013 [Virtual Reality Design for Science \(CSCI 1370\)](#)

Data Structures and Algorithms, CSCI 0160

Graduate Research Advising: Ryan Cabeen, Connor Gramazio, Eni Halilaj (BME), Steven Gomez, Hua Guo, Jadrian Miles,

Reader: Bireswar Laha (Virginia Tech), Eni Halilaj (BME), Guan Wang (comps prop), Emmanuel Zraggen (comps).

2012 [Interdisciplinary Scientific Visualization \(CSCI 2370\)](#)

Data Structures and Algorithms, CSCI 0160

Postdoctoral Research Advising: Caroline Ziemkiewicz (mentor on successful ACM CI Fellowship), Assawin Gongvatana.

Graduate Research Advising: Alicia Boucher, Ryan Cabeen, Cagatay Demiralp, Connor Gramazio, Eni Halilaj (BME), Steven Gomez, Hua Guo, Radu Jianu, Jadrian Miles, Wenjin Zhou

Undergraduate Research Advising: Nathan Malkin.

Reader: Bireswar Laha (Virginia Tech qual), Adam Darlow (CogLingPsychSci PhD).

2011 Cognition, Human-Computer Interaction, and Visual Analysis, CSCI 2950J

Data Structures and Algorithms, CSCI 0160

Postdoctoral Research Advising: Caroline Ziemkiewicz (mentor on successful ACM CI Fellowship), Assawin Gongvatana (mentor on successful NIH K99)

Graduate Research Advising: Ryan Cabeen, Cagatay Demiralp, Eni Halilaj (BME), Steven Gomez, Hua Guo, Radu Jianu, Jadrian Miles, Wenjin Zhou

Undergraduate Research Advising: Nathan Malkin, who received an Honorable Mention in the Computing Research Association's Outstanding Undergraduate Award competition.

2010 [Interdisciplinary Scientific Visualization \(CSCI 2370\)](#)

Postdoctoral Research Advising: Caroline Ziemkiewicz (mentor on successful ACM CI Fellowship), Assawin Gongvatana (mentor on successful NIH K99)

Graduate Research Advising: Ryan Cabeen, Cagatay Demiralp, Eni Halilaj (BME), Steven Gomez, Radu Jianu, Jadrian Miles, Trevor O'Brien, Wenjin Zhou

Reader: Daniel Pineo (U NH PhD), Adam Darlow (CogLingSci qual), Gideon Goldin (CogLingSci qual), Ofer Pasternak (Tel Aviv U PhD)

Undergraduate Research Advising: Nathan Malkin, David Percy, Tiberiu Florea, Amanda Dowden.

2009 Developed and Taught "Cognition, Human-Computer Interaction, and Visual Analysis"

Postdoctoral Research Advising: Jian Chen, who accepted a tenure-track faculty position at U of S. Miss.

Graduate Research Advising: Cagatay Demiralp, Eni Halilaj, Radu Jianu, Jadrian Miles, Trevor O'Brien, Wenjin Zhou

Reader: Daniel Miranda (Biomedical Engineering quals), Michael Rainbow (Biomedical Engineering quals), Daniel Pinedo (U. NH quals)

Undergraduate Research Advising: Eni Halilaj

2008 [Virtual Reality Design for Science \(CS 137\)](#)

[Software System Design \(CS 190\)](#)

Postdoctoral Research Advising: Jian Chen; Daniel Keefe, who accepted a tenure-track faculty position at U. Minn.

Graduate Research Advising: Ryan Boller, Cagatay Demiralp, Radu Jianu, Jadrian Miles, Trevor O'Brien, Laura Sevilla, Andrew Wald, Wenjin Zhou

Reader: Evan Levanthal (biomedical engineering MD/PhD), Payman Yadollahpour (quals)

Undergraduate Research Advising: David Ginsburg

2007 [Software System Design \(CS 190\)](#)

[Interdisciplinary Scientific Visualization \(CSCI 2370\)](#)

Postdoctoral Research Advising: Jian Chen, Daniel Keefe

Graduate Research Advising: Daniel Acevedo Feliz, Ryan Boller, Cagatay Demiralp, Radu Jianu, Daniel Keefe, Misha Kostandov, Liz Marai, Jadrian Miles, Devon Penney, Andrew Wald, Song Zhang, Wenjin Zhou

2006 [Software System Design \(CS 190\)](#)

[Virtual Reality Design for Science \(CS 137\)](#)

Postdoctoral Research Advising: Jian Chen, David Tate (Psychology)

Graduate Research Advising: Daniel Acevedo Feliz, Ryan Boller, Jon Clayden (visiting PhD student from U. Edinburgh), Cagatay Demiralp, Radu Jianu, Daniel Keefe, Misha Kostandov, Liz Marai, Jadrian Miles, Devon Penney, Igor Pivkin (Appl. Math), Andrew Wald, Song Zhang, Wenjin Zhou

Reader: Aparna Das, Joe Kniss (U. Utah), Sonia Leach, Aggeliki Tsoli

2005 [Software System Design \(CS 190\)](#)

[Interdisciplinary Scientific Visualization \(CS 237\)](#)

Graduate Research Advising: Daniel Acevedo Feliz, Cagatay Demiralp, David Eigen, Radu Jianu, Daniel Keefe, Misha Kostandov, Wenjin Zhou, Dmitri Lemmerman, Liz Marai, Igor Pivkin (Appl. Math), Vadim Slavin, Song Zhang

Undergraduate Research Advising: Stephanie Lee, Misha Zaitzeff

Examiner: Dana Tenneson, Joe Kniss (U. Utah)

Reader: Joe LaViola, Sonia Leach.

2004 [Virtual Reality Design for Science \(CS 137\)](#)

Postdoctoral Research Advising: Cullen Jackson, Eileen Vote

Graduate Research Advising: Daniel Acevedo Feliz, Cagatay Demiralp, David Eigen, Eduardo Hueso, David Karelitz, Daniel Keefe, Dmitri Lemmerman, Liz Marai, Igor Pivkin (Appl. Math), Stephen Seow (Psych.), Vadim Slavin, Song Zhang

Undergraduate Research Advising: Stephanie Lee, Misha Zaitzeff

Examiner: Peter Sibley, Steve Seow (Psych.), Joe Kniss (U. Utah)

Reader: Joe LaViola, Gordon Kindlmann (U. Utah)

2003 [Interdisciplinary Scientific Visualization \(CS 237\)](#)

[Software System Design \(CS 190\)](#)

Postdoctoral Research Advising: Cullen Jackson, Eileen Vote

Graduate Research Advising: Daniel Acevedo Feliz, Cagatay Demiralp, Eduardo Hueso, David Karelitz, Daniel Keefe, Liz Marai, Igor Pivkin (Appl. Math), Stephen Seow (Psych.), Vadim Slavin, Jason Sobel, Song Zhang

Undergraduate Research Advising: Andrew McClain, Misha Zaitzeff

2002 [Interdisciplinary Scientific Visualization \(CS 237\)](#) Newly developed class co-taught with RISD professor Fritz Drury. RISD and Brown students work together to explore design and realization issues for virtual reality scientific visualization applications in Brown's Cave.

Postdoctoral Advising: Cullen Jackson, Eileen Vote

Graduate Advising: Daniel Acevedo Feliz, Kevin Audleman, Cagatay Demiralp, Eduardo Hueso, David Karelitz, Daniel Keefe, Liz Marai, Jason Sobel, Andy Wenger, Song Zhang

Undergraduate Advising: Andrew McClain, Akash Parikh, Phil Stone, Rachel Weinstein

2001 [Software System Design \(CS 190\)](#)

Postdoctoral Advising: Cullen Jackson, Eileen Vote

Graduate Advising: Daniel Acevedo Feliz, Stuart Andrews, Kevin Audleman, Daniel Keefe, Mike Kirby, Liz Marai, Prabhat, Eileen Vote, Andy Wenger, Song Zhang

Undergraduate Advising: Marco da Silva, Scott Davidson, Sarah Papp, Andrew Pienaar, Merrie Ringel, Phil Stone, Rachel Weinstein

Examiner: Gordon Kindlmann (U. Utah)

Reader: R. Michael Kirby, Sc.M.

2000 [Interdisciplinary Scientific Visualization \(CS237\)](#)

[Software System Design \(CS190\)](#)

Graduate Advising: Daniel Acevedo Feliz, Stuart Andrews, Daniel Keefe, Mike Kirby, Joe La Viola, Joe Lee, Liz Marai, Prabhat, Eileen Vote, Song Zhang

Undergraduate Advising: Marco da Silva, Scott Davidson, Samuel Ginsberg, Daniel Morris, Andrew Pienaar, Merrie Ringel, Phil Stone, Benjamin White.

Reader: Lisa Zorn, Sc.B.; Margaret Kosmala, Sc.B.

- 1999 [Interdisciplinary Scientific Visualization \(CS295-5\)](#). I developed and taught this course for the first time this year. In it, students emulated the process of doing interdisciplinary research by applying for grants, having their proposals evaluated, implementing them, and presenting their work at a mock conference. The groups for each project were required to have participants from multiple disciplines, exposing them to many of the skills required for multi-disciplinary collaborative work. The class also experimented with using a Rhetoric and Writing Fellow to help students with communication skills.

[Software System Design \(CS190\)](#)

Graduate Advising: Daniel Acevedo Feliz, Stuart Andrews, Mike Kirby, Jaehoon Lee, Liz Marai, Paul Reitsma, Song Zhang, Gordon Kindlmann (U. Utah)

Undergraduate Advising: David Akers, Charlie Curry, Cagatay Demiralp, Marco da Silva, Rob Manchester, Toan Pham, Jonathan Reiter.

Reader: Joe LaViola, Sc.M.; Lee Markosian, Ph.D.

- 1998 [Computer Graphics Seminar \(CS 295-1\)](#) (with Nancy Pollard).

Undergraduate Advising: Danijela Cabrac, Nemanja Petrovic, Jit Kee Chin, Laura Brogach, Kristin Cole, Yury Goldfeld.

- 1997 Undergraduate Advising: Seth Blumberg, Clifford Elgin, David Devault, Jed Wing.

University Service

- 2022 CS Director of Graduate Studies (PhD)
CS Curriculum Committee *ex officio*
Undergraduate CS Concentration Advising
Graduate CS Academic Advising
Undergraduate Academic Advising
Research Computing Advisory Committee
Faculty Mentoring (outside CS)
- 2021 CS Director of Graduate Studies (PhD)
CS Curriculum Committee *ex officio*
Undergraduate CS Concentration Advising
Graduate CS Academic Advising
Undergraduate Academic Advising
Research Computing Advisory Committee

- Task Force on long-term strategy for UG Stem Laboratory Instruction
- Faculty Mentoring (outside CS)
- 2020 CS Director of Graduate Studies (PhD)
 - CS Curriculum Committee *ex officio*
 - Undergraduate CS Concentration Advising
 - Graduate CS Academic Advising
 - Undergraduate Academic Advising
 - Research Computing Advisory Committee
- 2019 CS Director of Graduate Studies (PhD)
 - CS Executive Committee
 - CS Curriculum Committee *ex officio*
 - Undergraduate CS Concentration Advising
 - Graduate CS Academic Advising
 - Undergraduate Academic Advising
 - Research Computing Advisory Committee
 - Data Science Initiative (DSI) Search Committee
- 2018 CS Director of Graduate Studies (PhD)
 - CS Executive Committee
 - CS Curriculum Committee *ex officio*
 - Undergraduate CS Concentration Advising
 - Graduate CS Academic Advising
 - Undergraduate Academic Advising
 - Research Computing Advisory Committee
 - Data Science Initiative (DSI) Search Committee
 - Center for Computational Biology (CCMB) Search Committee
 - Hosted seminar/colloquium speakers: Felice Frankel, Prabhat
- 2017 CS Director of Graduate Studies (PhD)

- Undergraduate Academic Advising
- Undergraduate CS Concentration Advising
- Graduate CS Academic Advising
- 2016 Undergraduate Academic Advising
- BRDD Student Advising
- Undergraduate CS Concentration Advising
- Graduate CS Academic Advising
- CS Faculty Search Committee
- CS Vision Committee
- 2015 Undergraduate Academic Advising
- BRDD Student Advising
- Undergraduate CS Concentration Advising
- Graduate CS Academic Advising
- Center for Computation and Visualization (CCV) Steering Committee
- CCV Executive Director Search Committee
- CS Faculty Search Committee
- CS Vision Committee
- 2014 Undergraduate Academic Advising
- BRDD Student Advising
- Undergraduate CS Concentration Advising
- Graduate CS Academic Advising
- Center for Computation and Visualization (CCV) Advisory Committee
- CCV Executive Director Search Committee
- CS Executive Committee
- 2013 Undergraduate Academic Advising
- BRDD Student Advising
- Undergraduate CS Concentration Advising

- Graduate CS Academic Advising
- Center for Computation and Visualization (CCV) Advisory Committee
- CS Executive Committee
- 2012 Brown RISD Dual Degree (BRDD) Steering Committee
 - Undergraduate Academic Advising
 - BRDD Student Advising
 - Undergraduate CS Concentration Advising
 - Graduate CS Academic Advising
 - Magnetic Resonance Facility (MRF) Executive Cmomitee
 - MRF Science Advisory Board
 - Center for Computation and Visualization (CCV) Advisory Committee
 - Faculty Mentoring
 - CS Executive Committee
 - CS Search Committee
- 2011 Brown RISD Dual Degree (BRDD) Steering Committee
 - Freshmen and Sophomore Advising
 - BRDD Student Advising
 - Undergraduate and Graduate CS Academic Advising
 - Magnetic Resonance Facility (MRF) Executive Cmomitee
 - MRF Science Advisory Board
 - Center for Computation and Visualization (CCV) Advisory Committee
 - Faculty Mentoring: Savvas Koushiappas (Physics), Benjamin Raphael, Erik Sudderth
 - CS Executive Committee
 - Chair, CS Computing Vision Committee
- 2010 Brown RISD Dual Degree (BRDD) Steering Committee
 - Freshmen and Sophomore Advising
 - BRDD Student Advising

Undergraduate and Graduate CS Academic Advising

Magnetic Resonance Facility (MRF) Executive Cmomitee

MRF Science Advisory Board

Center for Computation and Visualization (CCV) Advisory Committee

Faculty Mentoring: Savvas Koushiappas (Physics), Benjamin Raphael

CCV Executive Director Search Interviewing

Chair, CS Computing Vision Committee

CS Examinations Committee

Hosted seminar/colloquium speakers: Miriah Meyer, Won-Ki Jeong, Ofer Pasternak

2009 Brown RISD Dual Degree (BRDD) Steering Committee

Freshmen and Sophomore Advising

BRDD Student Advising

Center for Computation and Visualization (CCV) Advisory Committee

Magnetic Resonance Facility (MRF) Executive Cmomitee

MRF Science Advisory Board

2008 Chair (Winter), CS Faculty Search Committee

Member (Fall), CS Faculty Search Committee

CS Computing/Facilities Committee

Brown RISD Dual Degree (BRDD) Steering Committee

Freshmen and Sophomore Advising

BRDD Student Advising

Center for Computation and Visualization (CCV) Advisory Committee

Magnetic Resonance Facility (MRF) Executive Committee

MRF Science Advisory Board

BSP search committee (MR Physicist)

2007 Chair, CS Faculty Search Committee

Chair, CS Computing/Facilities Committee

Freshmen and Sophomore Advising

Center for Computation and Visualization (CCV) Advisory Committee

Magnetic Resonance Facility (MRF) Executive Committee

MRF Science Advisory Board

BSP search committee

Hosted seminar/colloquium speakers: Gordon Kindlmann, Van Wedeen

2006 University Resources Committee (URC)

Search Committee for university Chief Information Officer and Vice President of CIS

Chair, CS Computing/Facilities Committee

Managed Compilation of All Departmental Research Results for NRC Review

Search Committee for CS Department Manager

Search Committee for CS Faculty

CS ad hoc Brochure Visual-Design Committee

Freshmen Advising

Center for Computation and Visualization (CCV) Advisory Committee

Magnetic Resonance Facility (MRF) Executive Committee

MRF Science Advisory Board

Brain Science Program (BSP) Executive Committee

Wriston Fellowship Selection Committee

Writing Fellows Advisory Board

Hosted seminar/colloquium speakers: David C. Banks, TJ Janken-Kelly, Robert S. Laramée, Frederic Leymarie, Andy Lomas.

2005 University Resources Committee (URC)

Magnetic Resonance Facility (MRF) Executive Committee

MRF Science Advisory Board

Center for Computation and Visualization (CCV) Advisory Committee

CCV Director Search Committee

Brain Science Program (BSP) Executive Committee

- Committee for Inter-Institutional Cooperation (CIC) (Brown/RISD)
- Wriston Fellowship Selection Committee
- Chair, CS Computing/Facilities Committee
- CS ad hoc web upgrade committee
- Hosted seminar/colloquium speakers: Donald House, Arie Kaufmann, Gideon May, Dmitri Metaxis, Colin Ware
- Moderated Royce Fellows' Seminar
- 2004 University Resources Committee (URC)
 - Magnetic Resonance Facility (MRF) Executive Committee
 - MRF Search Committee
 - Center for Computation and Visualization (CCV) Advisory Committee
 - Committee for Inter-Institutional Cooperation (CIC) (Brown/RISD)
 - Medical School Applicant Interviewing
 - CS Curriculum Committee
 - CS Facilities Committee
 - CS ad hoc administrative staff search committee
 - Hosted seminar/colloquium speakers: Derek Jones, John Allman, Hanspeter Pfister, Kelly Gaither, Tom Raidler, and Robert Moorhead
- 2003 Magnetic Resonance Facility (MRF) Executive Committee
 - MRF Search Committee
 - Brown/RISD ad hoc committee on collaboration and newly created standing Committee for Inter-Institutional Cooperation (CIC)
 - Ad hoc Computational Initiative Committee
 - CS Graduate Admissions Committee
 - CS ad hoc Teaching Load Committee
 - Hosted seminar/colloquium speakers: Iain Woodhouse, Dean Turner, Felice Frankel, Beth Meyerand, Xianfeng Gu, Robert Moorhead, Daniel Weiskopf, Philip Fu, Robert Haimes, Raghu Machiraju, Colin Ware
- 2002 Magnetic Resonance Facility Executive Committee

- Brown/RISD committee on collaboration
- CS Graduate Admissions Committee
- Hosted seminar/colloquium speakers: Tarn Tanner, Greg Little
- 2001 CS Graduate Admissions Committee
- Magnetic Resonance Facility Executive Committee
- Brain Science Program Web Site Committee
- Brain Science Program Graduate Advisory and Admissions Committee
- Brain Science Program Brochure Committee
- Hosted seminar/colloquium speaker: davidkremers (Caltech)
- Undergraduate and graduate academic advising
- 2000 Chaired CS Graduate Recruiting Committee
- CS Graduate Admissions Committee
- Magnetic Resonance Facility Executive Committee
- Brain Science Program Web Site Committee
- Brain Science Program Graduate Advisory and Admissions Committee
- Brain Science Program Brochure Committee
- Hosted seminar/colloquium speakers: Peter Basser (NIH), Chris Johnson (U. Utah), Maurizio Forte (Florence).
- Committee to develop speaker series on “What Physics can Measure: What Biologists Want to Measure”
- Committee to develop speaker series on Simulation and Visualization.
- Undergraduate and graduate academic advising
- 1999 Chaired CS Graduate Recruiting Committee
- CS Graduate Admissions Committee
- Brain Science Program Web Site Committee
- Brain Science Program Graduate Advisory Committee
- Hosted seminar/colloquium speakers: Felice Frankel (MIT and Victoria Interrante (U. Minn.)
- Hosted a department Town Meeting

1998 CS Graduate Recruiting Committee

Undergraduate and graduate academic advising

Helped make available color printing and slide-making to the department.

Memberships IEEE Fellow, ACM.

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