Timothy A. Davis
February 2022

Contact Information

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Education

Ph.D., Computer Science (December 1998)
North Carolina State University, Raleigh, NC
Advisor: Dr. Edward W. Davis
Dissertation: *Rendering Ray-Traced Animations with Frame Coherence in a Distributed Computing Environment*

M.C.S., Computer Science (August 1989)
University of Virginia, Charlottesville, VA
Research Area: Real-time Graphics Image Transmission over a Token-ring Network

B.S., Computer Science and Mathematics (May 1987)
College of William of Mary, Williamsburg, VA

Experience

Lecturer, Department of Computer Science, William & Mary, Williamsburg, VA (2016-Present).
Taught undergraduate courses in introductory Python, discrete mathematics, algorithms, computer organization, programming languages, finite automata, and computer animation.

Associate Professor, Computer Science Dept., Clemson University, Clemson, SC (2005-2016).
Assistant Professor, Computer Science Dept., Clemson University, Clemson, SC (1999-2005).
Performed research in areas of computer graphics, virtual reality and perception, brain-computer interface (BCI), and distributed computing. Directed the multidisciplinary DPA (Digital Production Arts) program. Taught courses in advanced graphics, computer animation, compositing, virtual reality, Java, and C/C++.

Computer Scientist, Environmental Protection Agency, Research Triangle Park, NC (1998-1999).
(EPA Post-doctoral fellowship). Conducted research in the integration of multiple environmental models for scientific visualization and computation purposes.

Instructor, North Carolina State University, Raleigh, NC (1995-1998).
Taught five semesters of a sophomore-level discrete mathematics course and one semester of a junior-level data structures course.

Research Assistant, North Carolina State University, Raleigh, NC (1994, 1997).
Performed literature search of parallel algorithms and distributed computing performance models in support of an atmospheric modeling project sponsored by the EPA.

Experience (cont.)

Research Affiliate, North Carolina State University, Raleigh, NC (1994-1996).
Provided programming support in system control and vision algorithms for an interdisciplinary team developing a Mars rover vehicle at NCSU's Mars Mission Research Center.

Computer Engineer, National Aeronautics and Space Administration (NASA) Goddard Space Flight Center, Greenbelt, MD (1989-1993).
Participated in all phases of the software development lifecycle for NASA's Tracking Data and Relay Satellite System (TDRSS) Network Control Center. Designed, implemented, tested, and composed documentation for GUI applications and LAN software (currently in operation) written in C and C++ to support numerous satellite projects, as well as all space shuttle missions. Headed project team in redesign of operations workstation software. Managed Software Engineering and Research Facility (SERF) computer laboratory. Held Secret security clearance.

Instructor, Prince George's Community College, Largo, MD (1992-1993).
Taught introductory courses in C programming, and in working with personal computers.

Publications

E. Ebrahimi, B. M. Altenhoff, L. Hartman, A. Jones, S. V. Babu, C. C. Pagano, and T. A. Davis, "Effects of Visual and Proprioceptive Information on Depth Judgments in Closed-Loop Visuo-Motor Calibration," *ACM Symposium on Applied Perception (SAP) 2014.*, August 2014, pp. 103-110.

P. E. Napieralski, B. M. Altenhoff, J. W. Bertrand, L. O. Long, S. V. Babu, C. C. Pagano, T. A. Davis, "An Evaluation of Immersive Viewing on Spatial Knowledge Acquisition in Spherical Panoramic Environments," *Virtual Reality*, 2014.

B. Liu and T. A. Davis, "Game Asset Considerations for Facial Animation," *2013 18th International Conference on Computer Games (CGAMES)*, July 2013, pp. 159-163. (IEEE TCSIM Best Student Paper)

B. Liu and T. A. Davis, "A Hybrid Control Scheme for Facial Rigging," *2013 18th International Conference on Computer Games (CGAMES)*, July 2013, pp. 164-167.

B. M. Altenhoff, P. E. Napieralski, L. O. Long, J. W. Bertrand, C. C. Pagano, S. V. Babu, J. Kern, and T. A. Davis, "Effects of Calibration to Visual and Haptic Feedback on Near-Field Depth Perception in an Immersive Virtual Environment," *ACM Symposium on Applied Perception (SAP) 2012*.

B. M. Altenhoff, P. E. Napieralski, L. O. Long, J. W. Bertrand, C. C. Pagano, S. V. Babu, and T. A. Davis, "Effects of Immersion on Spatial Updating in Virtual Panoramas," (Short Poster Paper) *ACM Symposium on Applied Perception (SAP) 2012*.

J. I. Ekandem, T. A. Davis, I. Alvarez, M. T. James and J. E. Gilbert, "Evaluating the Ergonomics of BCI Devices for Research and Experimentation," *Ergonomics, Vol. 55, No. 5*, May 2012, pp. 592-598.

T. A. Davis, "A Summer Science Experience with Computer Graphics for Secondary Students," *SIGCSE 2012*, March 2012, pp. 295-300.

Publications (cont.)

P. E. Napieralski, B. M. Altenhoff, J. W. Bertrand, L. O. Long, S. V. Babu, C. C. Pagano, J. Kern, and T. A. Davis, "Comparing Near Field Distance Perception in Real and Virtual Environments Using Both Verbal and Action Responses," *ACM Transactions on Applied Perception, Vol. 8, No. 3*, August 2011, pp. 18.1-18.19. (Top 5 Paper Award)

T. A. Davis and D. H. House, "The Art and Science of Digital Production Arts," *Eurographics 2011 - Education Papers*, Llandudno, Wales, pp. 17-22.

J. Wang, T. A. Davis, P. Srimani, and J. M. Westall, "Undergraduate Database Instruction with MeTube," *ITiCSE 2010*, June 2010.

J. Wang, P. Srimani, T. A. Davis, and J. M. Westall, "MeTube: A Novel Way to Introduce Database to Undergraduates," *39th IEEE Frontiers in Education*, San Antonio, TX, October, 2009.

T. A. Davis and S. Matzko, "A Graphics-Based Approach to Data Structures," *SIGCSE Bulletin, Vol. 40, No. 3 (Proceedings of ITiCSE 2008)*, June 2008.

T. A. Davis, "Graphics-Based Learning in First-Year Computer Science," *Computer Graphics forum,* Vol. 26, No. 4, December 2007.

A. T. Duchowski and T. A. Davis, "Teaching Algorithms and Data Structures through Graphics," (Education Program), *Eurographics 2007*, Prague, Czech Republic, September 2007.

T. A. Davis, R. M. Geist, S. Matzko, and J. M. Westall, "τεχνη: Trial Phase for the New Curriculum," *SIGCSE Bulletin, Vol. 39, No. 1 (Proceedings of SIGCSE 2007)*, March 2007.

S. Matzko and T. A. Davis, "Pair Design in Undergraduate Labs," *Journal of Computing in Small Colleges, Vol. 22, No. 2*, December 2006.

T. A. Davis, "Graphics-Based Learning in First-Year Computer Science," (Education Program), *Eurographics 2006*, Vienna, Austria, September 2006, (Best Paper Award, Education Program).

S. Matzko and T. A. Davis, "Using Graphics Research to Teach Freshman Computer Science," *SIGGRAPH Educators Program*, August 2006.

J. Staples and T. A. Davis, "Motion Capture for the Masses," *INFOCOMP Journal of Computer Science*, July 2006.

S. Matzko and T. A. Davis, "Teaching CS1 with Graphics and C," *SIGCSE Bulletin, Vol. 38, No. 3 (Proceedings of ITiCSE 2006)*, June 2006.

T. A. Davis and J. Kundert-Gibbs, "The Role of Computer Science in Digital Production Arts," *SIGCSE Bulletin, Vol. 38, No. 3 (Proceedings of ITiCSE 2006)*, June 2006.

E. Siomacco, J. Kundert-Gibbs, and T. A. Davis, "Developing Efficient Character Pipeline Tools for Animation Production (Poster)," *ACM Southeast Conference*, March 2006.

J. Kundert-Gibbs (Ed.), *Maya: Secrets of the Pros 2*, Chapter co-author with B. Cummings, J. Kundert-Gibbs, J. Gardiner, and S. R. Johnson, "Non-Photorealistic Rendering," SYBEX Inc., CA, 2004.

Publications (cont.)

T. A. Davis, R. M. Geist, S. Matzko, and J. M. Westall "Course Development under τεχνη," (Education Program), *Eurographics 2004*, Grenoble, France, September 2004.

T. A. Davis, R. Geist, S. Matzko, and J. M Westall, "Visual Learning through the τεχνη Project," (Position Paper), *Eurographics/ACM SIGGRAPH Workshop on Computer Graphics Education 2004*, Hangzhou, China, June 2004.

S. Wang, T. A. Davis, R. M. Geist, J. M. Westall, and J. Kundert-Gibbs, "Digital Production Arts: Coming Soon to a College Near You!" *42nd ACM Southeast Conference*, Huntsville, AL, April 2004.

T. A. Davis, R. M. Geist, S. Matzko, and J. M. Westall, "τεχνη: A First Step," *SIGCSE Bulletin, Vol. 34, No. 1, (Proceedings of SIGCSE 2004)*, March 2004.

T. A. Davis, K. Pestka, and A. Kaplan, "KScope: A Modularized Tool for 3D Visualization of Object-Oriented Programs," *VISSOFT 2003 (IEEE 2nd Annual Workshop on Visualizing Software for Understanding and Analysis)*, Amsterdam, The Netherlands, September 2003.

T. A. Davis and S. P. Ficklin, "Interactive Dynamic Environments Using Image-Based Modelling and Rendering," (Short Presentation), *Eurographics 2003*, Granada, Spain, September 2003.

T. A. Davis and S. R. Johnson, "Lip-Synching in *Sourdough*," (Slides & Video Program), *Eurographics 2003*, Granada, Spain, September 2003.

T. A. Davis and J. A. Richards, "Distributed Rendering across Remote File Systems," *41st ACM Southeast Conference*, Savannah, GA, March 2003.

A. G. Chalmers, E. Reinhard , and T. A. Davis (Eds.), *Practical Parallel Rendering*. Chapter co-author with E. Reinhard "Parallel Rendering with Coherence." A. K. Peters, MA, 2002.

J. Kundert-Gibbs (Ed.), *Maya: Secrets of the Pros*, Chapter co-author with J. Richards, "Distributed Rendering," SYBEX Inc., CA, 2002.

B. P. Sorge and T. A. Davis, "Real-Time Procedural Animation of Trees with Foliage," *ACM Southeast Conference*, Raleigh, NC, May 2002.

J. T. Barron, B. P. Sorge, and T. A. Davis, "Real-Time Procedural Animation of Trees," (Short Presentation), *Eurographics 2001*, Manchester, England, September 2001.

T. A. Davis and E. W. Davis, "Exploiting Frame Coherence with the Temporal Depth Buffer in a Distributed Computing Environment," *IEEE Parallel Visualization and Graphics Symposium 1999*, San Francisco, CA, October 1999.

T. A. Davis and E. W. Davis, "A Parallel Frame Coherence Algorithm for Ray-Traced Animations," *Second Eurographics Workshop on Parallel Graphics and Visualization*, Rennes, France, October 1998.

T. A. Davis and E. W. Davis, "Rendering Computer Animations on a Network of Workstations," *IEEE International Parallel Processing Symposium*, Orlando, FL, March 1998.

Publications (cont.)

T. A. Davis, "Generating Computer Animations with Frame Coherence in a Distributed Computing Environment," *ACM Southeast Conference*, Atlanta, GA, April 1998. (Best Graduate Student Paper Award)

T. A. Davis, "Parallelizing Graphics Applications with PVM and MPI," *Proceedings of the 1997 Cluster Computing Conference*, Atlanta, GA, March 1997.

J. R. Wang, T. A. Davis, and G. K. Lee, "Implementation of the Canny Edge Detection Algorithm for a Stereo Vision System," *Proceedings of the 1996 ISCA International Conference on Computer Applications in Industry and Engineering*, Orlando, FL, 1996.

CK Chao, S. Lee, Y.-G. Yang, J. R. Wang, T. A. Davis, and G. K. Lee, "A Modular Distributed Computer Architecture for the MMRC Rover," *Proceedings of the 1996 ISCA International Conference on Parallel and Distributed Computing Systems*, San Francisco, CA, 1996.

T. A. Davis and E. W. Davis, "An Annotated Bibliography on Using Parallel Processing Systems (With Emphasis on Topics Related to Air Quality Modeling)," North Carolina State University Computer Science Technical Report No. TR-97-02, August 1994.

T. A. Davis, W. T. Strayer, and A. C. Weaver, "Transmitting Graphics Images over a Local Area Network," University of Virginia Computer Science Technical Report No. TR-90-31, November 1990.

Courses and Panels

J.-J. Bourdin, T. A. Davis, and E. F. Anderson, "Panel: How Should We Teach Computer Graphics?" *Eurographics 2011 – Education Program*, Llandudno, Wales, April 2011.

T. A. Davis, A. G. Chalmers, T. Kato, and E. Reinhard, "Course: Practical Parallel Rendering," *SIGGRAPH 2002*, San Antonio, TX, July 2002.

T. A. Davis, A. G. Chalmers, T. Kato, and E. Reinhard, "Course: Practical Parallel Processing for Today's Rendering Challenges," *SIGGRAPH 2001*, Los Angeles, CA, August 2001.

T. A. Davis, A. G. Chalmers, and H. W. Jensen, "Course: Practical Parallel Processing for Realistic Rendering," *SIGGRAPH 2000*, New Orleans, LA, July 2000.

Grants

J. Tessendorf and T. A. Davis, "Gaming Assets for BMW Models," sponsored by BMW, August 2012 – July 2013, $30,000.

J. Bottum, J. Cash, T. A. Davis, J. Pepin, and J. Gemmill, "EAGER: TIGER – Tight Integration of Grid Enabled Researchers," sponsored by NSF OCI Cyberinfrastructure, Grant 1063579, October 2010 – September 2012, $299,887.

T. A. Davis and D. Donar, "Tom & Jake," sponsored by the South Carolina Film Commission, July 2009 – June 2010, $100,000.

T. A. Davis and D. Donar, "Appalachian Dreams," sponsored by the South Carolina Film Commission, July 2008 – June 2009, $75,000.

D. B. Battisto, R. Pak, D. Allison, T. A. Davis, V. Blouin, D. Willoughby, A. T. Duchowski, and P. Watt, "Patient Room for the Future Prototype Research Initiative," sponsored by Department of Defense through Spartanburg Regional Health System, Grant W81XWH-07-2-0060, June 2007 – January 2009, $363,678.

J. M. Westall, R. M. Geist, T. A. Davis, A. T. Duchowski, P. Srimani, and J. Z. Wang, "CPATH EAE: τεχνη -- Evaluation, Adoption, and Extension," sponsored by NSF CISE Pathways to Integrated Undergraduate Computing Education, Grant 0722313, August 2007 – July 2010, $453,673.

R. M. Geist, R. J. Schalkoff, J. M. Westall, T. A. Davis, P. Srimani, B. C. Dean, and D. L. Woodard, "An Experimental Supercomputer from Commodity Components," sponsored by NVIDIA Corporation/Clemson University Research Investment Fund Program, February 2007 – June 2007, $140,000.

T. A. Davis, A. T. Duchowski, R. M. Geist, J. M. Westall, and J. Kundert-Gibbs, "Graphics Research for Undergraduates," sponsored by NSF Research Education Innovation Program, Grant EIA-0305318 (supplement), July 2003 – June 2006, $23,438.

T. A. Davis, "Supporting Hardware for the Zmini Camera," sponsored by NSF Research Resources Program, Grant CNS-0423584 (supplement), August 2005 – July 2007, $5,748.

T. A. Davis and J. Kundert-Gibbs, "Shooting in 3D with the Zmini Camera," sponsored by NSF Research Resources Program, Grant CNS-0423584, August 2004 – July 2006, $40,000.

R. M. Geist, J. M. Westall, J. J. Martin, T. A. Davis, and J. Kundert-Gibbs, "IBM Parallel Processing Laboratory," sponsored by IBM, June 2004, $124,808.

T. A. Davis, Workshop on Computer Graphics Education, sponsored by ACM/NSF (travel funds), June 2004, $1,865.

T. A. Davis, A. T. Duchowski, R. M. Geist, J. M. Westall, and J. Kundert-Gibbs, "τεχνη: A New Approach to the B.A. Degree in Computer Science," sponsored by NSF Education Innovation Program, Grant EIA-0305318, July 2003 – June 2007, $330,000.

T. A. Davis, "Auto-Rigging: From Model to Skeleton," sponsored by Clemson University, Research Grant Committee, January 2003 – November 2003, $3,000.

Grants (cont.)

S. Wang, S. Cross, T. A. Davis, R. M. Geist, D. Hartman, and J. M. Westall, "Investigation in Space-Time Photography," sponsored by the Commission on Higher Education's (CHE) South Carolina Research Initiative Grant Program, September 2001 – November 2001, $47,700.

R. M. Geist, T. A. Davis, A. Ogale, and J. M. Westall, "Real-time Visualization of Polymer Flows," sponsored by NASA through the South Carolina Space Grant Consortium at the College of Charleston, January 2000 – December 2000, $25,000.

Honors and Awards

IEEE TCSIM Best Student Paper Award, *2013 18th International Conference on Computer Games (CGAMES)*

Best Animation, *Fire in the Water*, Greenville International Film Festival (2013)

Glory Award, *Fire in the Water*, Greenville International Film Festival (2013)

Best Animation, *Wycinanki*, Greenville International Film Festival (2012)

Top 5 Paper, *Symposium on Applied Perception in Graphics and Visualization (APGV) 2011*

Best Animation Award, *Appalachian Dreams*, *2010 Mexico International Film Festival*

Best Micro Film, *Appalachian Dreams, Appalachian Film Festival*

Audience Favorite Animation Award, *Schildermenneke*, *Charleston International Film Festival* (2009)

Best Paper, *Eurographics Education Program* (2006)

Pixar Animation Award – Runner Up, *First Impressions*, *Eurographics Animation Festival* (2005)

Tenure (2005)

Outstanding Faculty Award, Computer Science African American Alliance (2004)

Best Animation – 2nd Prize, *Sourdough*, *Flicks on 66 Animation Festival* (2003)

Best Animation – 2nd Prize, *Retrofit*, *ACM Southeast Digital Animation Festival* (2003) (Independent Awards Panel)

Best-Selling Book at SIGGRAPH 2002, *Maya: Secrets of the Pros* (Contributing Author)

Back Cover Image, *Proceedings of the IEEE Parallel Visualization and Graphics Symposium 1999*

Best Graduate Student Paper Award, ACM Southeast Conference, (1998)

Upsilon Pi Epsilon Honor Society in the Computing Sciences (1994-1998)

Letter of Recognition for Outstanding Teaching Assistant (1996, 1997)

Computer Animations

J. Barry, T. Curtis, M. Madigan, V. Nearing, and K. Stritzinger, (T. A. Davis, Faculty Mentor),
QA*ARMA
SIGGRAPH 2014 Dailies, Vancouver, BC, August, 2014.

A. Anderson, A. Beaty, M. Morland, B. Sledge, and Z. Ye, (T. A. Davis, Faculty Mentor),
Robo+Repair
SIGGRAPH 2014 Dailies, Vancouver, BC, August, 2014.

T. Curtis, M. Morland, A. Anderson, B. Buckley, C. Thomas, D. Donar, and T. A. Davis (Producer),
Fire in the Water
Greenville International Film Festival, Charleston, SC, April, 2013. (Glory, Award, Best Animation)

I. Rindos, C. Johnson, D. Donar, and T. A. Davis (Producer), *Wycinanki*
Greenville International Film Festival, Charleston, SC, April, 2012. (Best Animation)

P. Wisessing, C. Johnson, I, Rindos, A. Bangalore, D. Donar, and T. A. Davis (Producer), *Gravitons*
Charleston International Film Festival, Charleston, SC, May 2011.
Red Stick International Animation Festival, Baton Rouge, LA, November 2010.

S. Chen, S. Cooney, S. Yu, M. Volonte, R. Cushman, D. Donar, and T. A. Davis (Producer), *Golden Fish*
Charleston International Film Festival, Charleston, SC, May 2011.

D. Donar, Z. Inks, and T. A. Davis (Producer), *Appalachian Dreams*
Southern Lens (PBS), October 2010.
Virginia Film Festival, Charlottesville, VA, November 2010.
Southern Appalachian Film Fest, Kinsport, TN, October 2010.
Bumbershot Music and Arts Festival, Seattle, WA, July 2010.
Piccolo Spoleto Festival, Charleston, SC, June 2010.
Appalachian Film Festival, Huntington, WV, May 2010, (Best Micro Film).
2010 Mexico International Film Festival, Rosarito, Mexico, May 2010, (Best Animation Award).
Charleston International Film Festival, Charleston, SC, April 2010.

A. Triplett, D. Donar, and T. A. Davis (Producer), *Silhouette*
Charleston International Film Festival, Charleston, SC, April 2010.
Women's Film Institute, Tour: San Francisco, New York, and Los Angeles, August-October 2009.

R. Cushman, K. Pease, P. Roeder, L. Smith, L. Sun, D. Donar, and T. A. Davis (Producer), *Fall*
Charleston International Film Festival, Charleston, SC, April 2010.

B. Murray, A. Triplett, D. Donar, and T. A. Davis (Producer), *Schildermenneke*
Charleston International Film Festival, Charleston, SC, April 2009, (Audience Favorite Animation Award).
Red Stick International Animation Festival, Baton Rouge, LA, April 2009.

T. Steele, A. Blank, N. Marra, Z. Trabookis, D. Donar, and T. A. Davis (Producer), *Cereal Killer*
Red Stick International Animation Festival, Baton Rouge, LA, April 2009.
ACM Southeast Digital Animation Festival, Clemson, SC, April 2009.
Eurographics 2007 Animation Theatre, Prague, Czech Republic, September 2007.

Computer Animations (cont.)

J. Lequire, C. Ramasamy, M. Guy, D. Donar, and T. A. Davis (Producer), *Goli*
Red Stick International Animation Festival, Baton Rouge, LA, April 2009.

T. Eaddy, J. Lequire, D. Morella, M. Rose, J. van Winkle, D. Donar, and T. A. Davis
(Producer), *What's Fur Dinner?*
Southeast Digital Animation Festival, Clemson, SC, March 2009.
Eurographics 2007 Animation Theatre, Prague, Czech Republic, September 2007.

A. Blank, J. van Winkle, M. Rose, T. Eaddy, T. Murray, W. Robinson, and T. A. Davis
(Producer), *Exit*
Southeast Digital Animation Festival, Clemson, SC, March 2009.

J. Kelley, R. Parek, M. Rose, and T. A. Davis (Director), *La Femme avec une Fleur*
ACM Southeast Digital Animation Festival, Winston-Salem, NC, March 2007.
Eurographics 2006 Animation Theatre, Vienna, Austria, September 2006.

S. Bushman, J. Gardiner, M. Larkins, J. Orara, E. Siomacco, T. A. Davis (Producer), *First
Impressions*
Eurographics 2005 Animation Theatre, Dublin, Ireland, September 2005 (Pixar Animation Award
– Runner Up).

J. Brola, R. Johnson, D. Wright, and T. A. Davis (Director), *Sourdough*
Eurographics 2003 Slides & Video Program, Granada, Spain, September 2003.
Flicks on 66 Animation Festival, Albuquerque, NM, July 2003, (Best Animation – 2nd Prize).
ACM Southeast Digital Animation Festival, Savannah, GA, March 2003.

J. Barron, M. Bryant, B. Sorge T. A. Davis (Producer), *Retrofit*
ACM Southeast Digital Animation Festival, Savannah, GA, March 2003, (Best Animation – 2nd
Prize).

Activities

Member, Undergraduate Curriculum Committee (2016-Present)
Member, Undergraduate Outreach Committee (2021-Present)
Member, Building Committee (2019-Present)
Member, NSF Broadening Participation in Computing Departmental Plan (2022)

Juror, SIGGRAPH Computer Animation Festival (2015)
Associate Director, Digital Production Arts (2011-2015)
Member, Digital Production Arts Board (2000-2015)
Member, Awards Committee (2010-2015)
Member, Space Committee (2014-2015)
Faculty Mentor, DreamWorks Animation Summer Program (2013)
Panelist, NSF Evaluation Panel for Expedition in Computing Proposals (2013)
Reviewer, *ACM Transactions on Computing Education* (2013)
Member, Undergraduate Curriculum Committee (2012-2013)
Associate Chair, Short Papers, INTERACT 2011 (2011)
Interim Director, Digital Production Arts Program (2006-2010)
Chair, ACM Southeast Digital Animation Festival (2009)
Book Reviewer, McGraw-Hill (2001), Morgan Kaufmann (2002, 2004-2006)
Faculty Advisor, Clemson Linux Users' Group (2003-2004)
Program Committee, ACM Southeast Digital Animation Festival (2003-2004)
Reviewer, ACM Southeast Conference (2003)
Referee, SIGGRAPH Courses Program (1999-2002)
Panelist, NSF Evaluation Panel for ITR Proposals (2002)
Reviewer, ACM Symposium on Applied Computing (2002)
Session Chair, ACM Southeast Conference (2002)
Reviewer, *Journal of Parallel and Distributed Computing* (1999)
Participant, Mentored Teaching Assistantship Program (1996)
Student Representative, Scholarship and Financial Aid Committee (1997)
Student Volunteer, Supercomputing '95 and Supercomputing '96
Member, Association for Computing Machinery (ACM) (1999-Present)
Member, ACM SIGGRAPH (1999-Present)
Member, Eurographics (2000-2013)

Courses Taught

William & Mary
Computer Science - Undergraduate
CSCI 141 – Computational Problem Solving (2016-2021)
CSCI 243 – Discrete Structures in Computer Science (2013, 2017-2021)
CSCI 303 – Algorithms (2016-2021)
CSCI 304 – Computer Organization (2018-2022)
CSCI 312 – Principles of Programming Languages (2016, 2018-2021)
CSCI 417 – Computer Animation (2017, 2019-2020, 2022)
CSCI 423 – Finite Automata (2021)

Clemson University
Computer Science - Undergraduate
CPSC 101 – Introduction to Object-Oriented Programming with Java (1999)
CPSC 102 – Computer Science II (2006, 2009-2015)
CPSC 215 – Tools and Techniques for Software Development (C, C++, Unix) (2001-2003)
CPSC 411 – Virtual Reality (2002-2008)

Computer Science - Graduate
CPSC 611 – Virtual Reality (2002-2008)
CPSC 805 – Advanced Modeling Techniques in Computer Graphics (2000-2002, 2004-2007)
CPSC 981 – Graphics Seminar (2000-2001)

Digital Production Arts - Graduate
DPA 800 – An Intensive Introduction to Computer Science for MFAC (2000)
DPA 807 – 3D Modeling and Animation (2010-2011)
DPA 808 – Computer Animation (2001-2005)
DPA 809 – Rendering and Shading (2010-2015)
DPA 815 – Special Effects Compositing (2004-2014)
DPA 860 – Digital Production Arts Studio (1999-2013)
DPA 881 – RenderMan (2014)

North Carolina State University
Computer Science - Undergraduate
CSC 226 – Discrete Mathematics for Computer Scientists (1995, 1996, 1997, 1998, 1999)
CSC 230 – Introduction to C (1991, 1992)
CSC 316 – Data Structures and Algorithms (1996)

Former Advisees

Brianne Campbell, "Surfacing Jellyfish for *Peanut Butter Jelly*," MFA Thesis, May 2015.

Sarah Runge, "Character Surfacing and Feathering for *UFO*," MFA Thesis, December 2014.

Pisut Wisessing, "Getting Sandy: Creating Collapsing Sand Effects for *An Ode to Love*," MFA Thesis, August 2014.

Benjamin Sledge, "An Automated Build System for Articulated Characters," MFA Thesis, January 2014.

Brooke Buckley, "Lighting and Compositing for *Project Hero*," MFA Thesis, May 2014.

Mandy Madigan, "Lighting and Compositing for *QA-ARM-A*," MFA Thesis, January 2014.

Chaoren Li, "Exploration of Mouth Shading and Lighting in CG Production," MFA Thesis, May 2013.

Nicholas McElveen, "Creating Dynamic Grass for *Tartan Troubles*," MFA Thesis, May 2013.

Kiel Pease, "Integrating a Lighting System for a Short Animation that Requires Objective Light Movement," MFA Thesis, May 2013 (Rhythm & Hues).

Matias Volonte, "Methods for Producing Stereoscopic Imagery," MFA Thesis, August 2012 (Illusion Studios).

Shirley Yu, "The Stone People Effect: A Visual Effect in Houdini," MFA Thesis, August 2012.

Irena Rindos, "*Wycinanki*: Production of a Non-Photorealistic Rendered Short Film," MFA Thesis, August 2012.

Zachary Trabookis, "Rendering an Animated Tattoo Visual Effect," MFA Thesis, August 2012.

Ryan Prestridge, "Considerations for Creating a Believable Creature for the Short Film *Li Fe*," MFA Thesis, May 2012 (Rhythm & Hues).

Boqian Liu, "Game Asset Development Pipeline with a Focus on Facial Rigging and Animation," MFA Thesis, May 2012 (EA Games).

Michela Rose, "Impressionist Rendering of an Animated Painting," MFA Thesis, May 2012 (Sony Imageworks).

Casey Johnson, "Rigging and Texturing Considerations for the Short Film *Spider Fight*," MFA Thesis, December 2011 (Rhythm & Hues).

Leopold Smith, "Combining Procedural and Hand Modeling Techniques for Creating Animated Digital 3D Natural Environments," MFA Thesis, December 2011.

Micah Guy, "Integrating Pixologic ZBrush into an Autodesk Maya Pipeline," MFA Thesis, May 2011.

Martin Furness, "Typical and Alternative Practices of Cloth Simulation," MFA Thesis, May 2011 (Moving Picture Company, Disney Animation, Sony Imageworks).

Daniel Morella, "Stereoscopic Simulation for Animation and Special Effects," MFA Thesis, May 2011.

Lucas McDaniel, "Creating Touchscreen Graphics for Control Systems," MFA Thesis, August 2010.

Edgar Rodriguez, "Behavioral Animation for Maya Particles Using Steering Forces," MFA Thesis, August, 2010 (Pixar).

Bynum Murray, "Image-Based Modeling Techniques for Artistic Rendering," MFA Thesis, May 2010.

Ashley Triplett, "Using Technology to Create a Meaningful and Artistic Piece," MFA Thesis, December 2009.

William Robinson, "Single-Command Rendering Using Sun Grid Engine," MFA Thesis, August 2009.

Stanley Sims, "Molecular Level Visualization of Polymers," MFA Thesis, May 2008.

Kelly Gallagher, "Rendering Principal Direction Contour Lines with Oriented Textures," MS Thesis, August 2007.

Rupali Parekh, "Creating Convincing and Dramatic Light Transitions for Computer Animation," MFA Thesis, May 2007 (DreamWorks Animation).

Jeremy Hicks, "Visualization of Polymer Processing at the Continuum Level," MFA Thesis, May 2007.

Former Advisees (cont.)

Rachel Drews, "3D Architectural Previsualization Installation," MFA Thesis, December 2006 (Rhythm & Hues).

Joshua Staples, "MEL Script Motion Capture," MFA Thesis, May 2006 (Autodesk).

Serenthia Ross, "Using van Gogh's *Starry Night* to Create a Two-Dimensional Animation in a Three-Dimensional Virtual World," MFA Thesis, May 2006.

Nishanth R. Pendluru, "3D Shape Representation Using Principal Direction Oriented Textures," MS Thesis, December 2005 (Intel).

Daniel Ott, "Simulating a Virtual Fisheye Lens for the Production of Full-Dome Animations," MFA Thesis, December 2004.

Amit Barman, "Simulating an Atomic Explosion for Special Effects Production," MFA Thesis, December 2004.

Jin Pei, "Using Fluid Texture Maps to Generate Real-Time Fluid-Like Animation," MFA Thesis, August 2004 (Art Institute of Atlanta).

Brad Hollister, "A Three-Dimensional Auditory Display Using Outer Ear Impulse Responses," MS Paper, May 2004 (MOVES Institute).

Subhash Daga, MS, December 2003.

Kenneth Pestka, "KScope: A Modularized Tool for 3D Visualization of Object-Oriented Programs," MS Thesis, August 2003.

Stephen Ficklin, "Interactive Dynamic Environments Using Image-Based Modeling and Rendering," MS Thesis, May 2003.

Rebecca Johnson, "Impressionist Rendering," MFA Thesis, May 2003.

Jacob Richards, "Distributed Rendering across Remote File Systems," MFA Thesis, May 2003 (Blue Sky Studios).

Jennifer Brola, "Dynamically Controlled Crowds in an Animated Environment," MFA Thesis, December 2002 (Blue Sky Studios).

Christopher Jesudurai, MS, December 2002.

Deborah Wright, "Procedurally Animated Textures," MFA Thesis, May 2002.

Brian Sorge, "Real-Time Procedural Animation of Trees with Foliage," MS Paper, December 2001 (Digital Signal Corp.).

Matthew Hanna, "Virtual Interaction with Computer Simulated Particle Systems," MS Paper, August 2001.

Samuel Sampson, MS, August 2001.

Jeremy Barron, "Real-Time Procedural Animation of Trees," MS Thesis, May 2001 (Digital Signal Corp.).