David S. Ebert

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EDUCATION

THE OHIO STATE UNIVERSITY, Columbus, OH
  Doctor of Philosophy, Computer Science, June 1991
  Areas of Study: Computer Graphics, Distributed Processing, Numerical Analysis
  Dissertation: "Solid Spaces: A Unified Approach to Describing Object Attributes," Advisor: Rick Parent
THE OHIO STATE UNIVERSITY, Columbus, OH
  Master of Science, Computer Science, December 1987
THE OHIO STATE UNIVERSITY, Columbus, OH
  Bachelor of Science, Computer Science, June 1986, Summa Cum Laude

PROFESSIONAL EXPERIENCE

SILICON VALLEY PROFESSOR OF ELECTRICAL AND COMPUTER ENGINEERING
December 2009 to present
PROFESSOR
July 2006 to present
IEEE FELLOW
2009 to present
ENTREPRENEUR LEADERSHIP ACADEMY FELLOW
August 2014 – July 2015
UNIVERSITY FACULTY SCHOLAR
August 2006 to July 2011
ASSOCIATE PROFESSOR
December 2000 to June 2006
School of Electrical and Computer Engineering
Purdue University, West Lafayette, IN
  • Developed funded research program in computer graphics and visualization (current
    funding approx. $6M).
  • Created the DHS-funded Purdue University Regional Visualization and Analytics Center.
  • Developed and taught computer graphics curriculum; taught operating systems courses.
  • Advised undergraduate and graduate students, Master's theses, and Ph.D. dissertations.

ASSOCIATE PROFESSOR
July 1998 to January 2001
ASSISTANT PROFESSOR
August 1993 to June 1998
Computer Science and Electrical Engineering Department
University of Maryland Baltimore County
  • Developed research program in volumetric displays, scientific, information, and medical visualization.
  • Developed and taught computer graphics curriculum; taught database courses.
  • Advised undergraduate and graduate students, Master's projects, theses, and Ph.D. dissertations.
  • Appointed to University of Maryland Institute for Advanced Computer Studies, 1993-94.

VISITING ASSOCIATE PROFESSOR, 2000
Computer Science Department, Stanford University
  • Collaborated on real-time shading language project with Dr. Pat Hanrahan during sabbatical.

EDITOR IN CHIEF
January 2003 - December 2006
ASSOCIATE EDITOR IN CHIEF
January 2002 - December 2002
IEEE Transactions on Visualization and Computer Graphics

GRAPHICS CONSULTANT, 2000, 2002, 2007
U.S. Patent and Trademark Office
  • Taught courses on computer graphics to patent examiners, Fall 2000, Spring 2002, Fall 2007.

GRAPHICS CONSULTANT, 2000 **-** 2001
Electronic Arts, Inc.
  • Consulted on real-time procedural modeling and rendering techniques.

VISUALIZATION CONSULTANT, 1999
American Association for the Advancement of Science
- Advised on visualization at the NSF EPSCOR workshop on domestic preparedness, March 1999.

VISUALIZATION CONSULTANT, 1998
National Library of Medicine, Bethesda, MD
- Instructed staff on volume visualization techniques and consulted on volume rendering from photographic database of the Visible Man.

VISUALIZATION CONSULTANT, 1998
Mitsubishi Information Technology Center America, Cambridge, MA
- Consulted on real-time volume rendering for surgical simulator.

VISITING SCIENTIST, 1995, 1997
NASA Goddard Space Flight Center, Greenbelt, MD
- Provided expertise on visualization and animation techniques for space physics visualization, atmospheric visualization, and the GLOBE project.

SUMMER FACULTY FELLOW, June 1994 to August 1994, June to August 1995
NASA Goddard Space Flight Center, Greenbelt, MD
- Developed visualization software for ocean modeling and space physics data.

INSTRUCTOR, September 1991 to June 1993
Department of Computer and Information Science, The Ohio State University
- Taught advanced operating systems, operating systems, database, and computer graphics courses.
- Coordinated senior level operating systems course.

GRADUATE TEACHING ASSOCIATE, June 1987 to June 1991
Department of Computer and Information Science, The Ohio State University
- Developed and maintained EDGE graphics software library for computer graphics courses.
- Co-developed animation language and distributed rendering software for use in graphics research.

GRANTS

1. Ebert, D., Malik, A., "Social Media Analytics and Reporting Toolkit (SMART) For Augmenting First Responder Situational Awareness," Department of Homeland Security, $500,000, December 2017-June 2019.

2. Ebert, D., Butzke, C., Schulze, D., "Arequipa Sustainable Viticulture and Enology Center (ASVEC): Elevating the Peruvian grape and wine industry into a global competitor," National University of Saint Augustine, $346,592, October 2017 – June 2019.

3. Delp, E., Reibman, A., Flynn, P., Ebert, D., "Video Analytics," DHS CINA Center, November 2017 – December 2018, $210,000.

4. Ebert, D., VACCINE Tools for Plugfest, Department of Homeland Security, $147,505, December 2017 – December 2018.

5. Ebert, D., Butzke, C., Schulze, D., Habib, A., "Harnessing Technology and Information Fusion to Enable Resilient and Sustainable Food-Water Balance Under Evolving Environmental Conditions," Purdue Big Ideas Challenge, $299,998, April 2017- March 2019.

6. Ebert, D., "Visual Analytics Summer Training for Morgan State Students," Morgan State University, $7979, June-July 2017.

7. Ebert, D., Delp, E., "Criminal Intelligence and Network Analytics Kick-Off," DHS, $2,500, August – September 2017.

8. Ebert, D., "VACCINE Center Funding," Department of Homeland Security Center of Excellence, $700,000, July 2016 – June 2017 ($24,000,000 total Center funding since inception).

9. Ebert, D., "U.S. Air Force Academy Visual Analytics Education Workshop," Department of Homeland Security, $50,000, July 2016 – June 2017.

10. Delp, E., Ebert, D., "vBOLO: Video Be On The Look Out For Technology Development," Department of Homeland Security, $80,000, July 2016 – June 2017.

11. Ebert, D., "Student CES show/ Technology Roadmap grant," Department of Homeland Security, $10,000, July 2016 – June 2017.

12. Ebert, L., Ebert, D., "STTR Phase I: Visual Information eNvironment for Effective agricultural management and Sustainability," National Science Foundation IIP (Award 1549525), January 2016-December 2016.

13. Ebert, D., Crawford, M., Peroulis, D., Owens, P., Butzke, C., "FEW: Technology and Information Fusion Needs to Address the Food, Energy, Water Systems (FEWS) Nexus Challenges, National Science Foundation CNS (Award 1541863), $60,105, August 2015-July 2016.

14. Ebert D, Beck K, "VACCINE Center Funding," Department of Homeland Security Center of Excellence, $1,700,000, July 2015 – June 2016 ($22,000,000 total Center funding since inception).

15. Ebert, D., "VACCINE Center Supplemental Projects Funding," Department of Homeland Security Center of Excellence, $770,586 July 2015 – June 2016.
16. Tuinstra, M., Crawford, M., Delp, E., Habib, A., Ebert, D., "Automated Sorghum Phenotyping and Trait Development Platform," ARPA-E, $6,500,000, August 2015- August 2018.
17. Ebert D, Beck K, "VACCINE Center Funding," Department of Homeland Security Center of Excellence, $1,742,539, July 2014 – June 2015.
18. Ebert D, Beck K, "VACCINE Center Supplemental Projects Funding," Department of Homeland Security Center of Excellence, $842,431, July 2014 – June 2015.
19. Ebert D, "Kauffman Fund Continuation Grant," Purdue University, $5,000, August 2014 – August 2015.
20. Ebert, D., Beck, K., "Predictive Analytics Visual Analytics User Experience, U.S. Government, $566,858, September 2013 – February 2015.
21. Ebert, D., Delp, E., Beck, K., "VACCINE Center Funding and Supplemental Projects," Department of Homeland Security Center of Excellence, $3,506,075, January 2013 – July 2014.
22. Ebert, D., Beck, K., "Visual Analytics Summer Program," Morgan State University, $25,000, July 2013.
23. Ebert, D., Beck, K., "Port Resiliency Visual Analytics," Stevens Institute of Technology, $30,000, July 2013 – July 2014.
24. Pijanowski, B., Dolby, N., Ebert, D., Morales, C., Nowack, R., Shepardson, D., Thomas, R., "A Big Data, Giant Screens and Open Ears Project (A Category 1 Proposal)," Purdue Vice President of Research, $471,777, (visual analytics portion $95,548), September 2013 – December 2014.
25. Ebert, D., Collins, T., Delp, E., "VACCINE – supplemental projects," Department of Homeland Security Center of Excellence, $1,234,999, January 2012 – March 2013.
26. Ebert, D., "Visual Analytics for Coastal Operations," United States Coast Guard, $54,708, July 2012 – March 2013.
27. Ebert, D., Collins, T., "Visual Analytics for Operational Risk Assessment and Search and Rescue Operations," United States Coast Guard, $97,004, January 2012 – January 2013.
28. Ebert, D., MacDonald, D., "FODAVA II – The Science of Interaction Workshop, National Science Foundation, $49,000, August 2011 – August 2012.
29. Elliott, S., Ebert, D., Bertino, E., "Biometric Uniqueness and Permanence Analysis," 558,307, Department of Homeland Security, May 2011 – May 2013.
30. Ebert, D., Collins, T., "Visual Analytics for Security Applications," Department of Homeland Security, $750,000, April 1, 2011 – March 31, 2013.
31. Ebert, D., "Resource Allocation Modeling Through Game Theory for Deterrence and Prevention Projects," United States Coast Guard, 160,000, January 2011 – September 2011.
32. Ebert, D., "Office of Intelligence and Analysis – Fusion Center Data Analysis and Assessment", Grant # 105444, July 2011-July 2012, $99,913.74.
33. Ebert, D., "VACCINE Communications Supplement Workplan," Grant # 105696, July 2011 – June 2012, $27,539.01.
34. Ebert, D., Collins, T., Delp, E., "VACCINE – supplemental projects," Department of Homeland Security Center of Excellence, $891,412, January 2011 – March 31, 2012.
35. Ghafoor, A., Aref, W., Ebert, D., Maciejewski, R., "Development of a Real-Time Infectious Disease Surveillance and Response System for Pakistan: Responding to Human Well-Being in Times of Threat," Defense Threat Reduction Agency, $1,600,000, June 2010 – May 2015.
36. DeLaurentis, D, Ebert, D., "Agent-Based Enhanced C2BMC Architecture," Missile Defense Agency, $1,266,078, August 2010 – October 2012.
37. Boushey, C., Craig, B., Delp, E., Ebert, D., Lukes, K., "Improving Dietary Assessment," National Cancer Care Institute, NIH, $133,410, August 2010 – July 2011.
38. Boushey, C., Craig, B., Delp, E., Ebert, D., Lukes, K., "Improving Dietary Assessment in Adolescents," National Institutes of Health, $562,164, September 2010 – August 2011.
39. Ebert, D., "Purdue University Program for Homeland Security - Science, Technology, Engineering, and Mathematics (HS-STEM) Career Development," Department of Homeland Security, $500,000, January 2011 – December 2013.
40. Harrison, M., Ebert, D., "Warfighter Cancer Care Engineering," Indiana University, $1,208,307, September 2010 – October 2012
41. Ebert, D., Collins, C., "VACCINE – supplemental projects," Department of Homeland Security Center of Excellence, $4,555,391, April 2010 – March 2015.
42. Ebert, D., "Visual Analytics for Rift Valley Fever Disease Modeling and Economic Impact Modeling," Texas A&M, $73,196, October 2008 – September 2010.
43. Ebert, D., Cason, T., Hummels, D., Savikhin, A., "TLS – Applied Visual Analysis for Economic Decision-Making" National Science Foundation, $376,984, September 2009 – August 2012.
44. Gaither, K., Ebert, D., Clyne, J., Pascucci, V., "Enabling Transformational Science and Engineering through Integrated Collaborative Visualization and Data Analysis for the National User Community," National Science Foundation, $7,000,000, August 2009 – July 2012.
45. Ebert, D., "Improving Query Performance in Large Analytic Databases" Department of Homeland Security, $100,000, July 2009 – March 2010
46. Ebert, D., Collins, C., Elmqvist, N., Delp, P., Cleveland, W., "Visual Analytics for Command, Control, and Interoperability Environments (VACCINE)," Department of Homeland Security Center of Excellence, $15,000,000, April 2009 – March 2015.

47. Ebert, D., "Purdue University Program for Homeland Security - Science, Technology, Engineering, and Mathematics (HS-STEM) Career Development," Department of Homeland Security, $300,000, October 2008 – September 2011.
48. Collins, T., Aaltonen, P., Burns, M., Collins, W., Ebert, D., Hankins, D., McGlothlin, J., "Year 2 Pandemic Influenza Exercise Preparedness Program: Planning and Execution of Tabletop and Functional Exercises, $904,935, Dec. 2007 – Aug. 2008.
49. Amass, S., Ebert, D., "Purdue University Program for Homeland Security - Science, Technology, Engineering, and Mathematics (HS-STEM) Career Development," Department of Homeland Security, $500,000, Nov. 2007 - Nov 2010.
50. Ebert, D., "Text Extraction and Data Visualization for Pet Health Surveillance," Lawrence Livermore National Labs, $40,000, Sep 2007 - Dec 2007.
51. Ebert, D., "Novel Presentation Methods for Technical Data," Air Force Research Lab, $117,000, May 2007 - Nov. 2008.
52. Boushey, C., Craig, B., Delp, E., Ebert, D., Lutes, K., "Improving Dietary Assessment Methods Using the Cell Phone and Digital Imaging," National Cancer Institute, NIH, $1,950,110, July 2007 - June 2011.
53. Boushey, C., Craig, B., Delp, E., Ebert, D., Lutes, K., "Improving Diet and Physical Activity Assessment in Adolescents," NIH, $915,000, July 2007 - June 2010.
54. Pekny, J., Doebbeling, B., Harrison, M., (Ebert, D. - SI), "Developing a Hierarchical System Based Approach to Improving Cancer Care: Establishing an Indiana Prototype for Next-Generation Colorectal Cancer Prevention and Treatment," Regenstrief Foundation, $1,350,000, July 2007 - June 2008.
55. Collins, T. (PI), Ebert, D. (PI), Coyle, E., Delp, E., Krogmeier, J., Smith, T., "C4ISR Testbed Support for Muscatatuck Urban Warfare Training Center, Dept. of the Army, $1,643,336, August 2006 - August 2007.
56. Ebert, D., Ouzzani, M., Cleveland, W., "Integration and Analysis of Health Data For Indiana Pandemic Influenza Plans," Indiana State Department of Health, $51,200, May 2006 - August 2006.
57. Ebert, D., Cleveland, W., Chaturvedi, A., Elmagarmid, A., Clifton, C. Overhage, M., "Purdue University Regional Visualization and Analytics Center," DHS, January 2006 - June 2008.
58. Ebert, D., "Interactive Illustrative Visualization," Adobe Systems, $60,000, January 2005 - March 2007.
59. Engel, B., Jafvert, C., Govindaraju, R., Prabhakar, S., Zhao, L., Ebert, D., "C4E4: Cyberinfrastructure for End-to-End Environmental Explorations," NSF DBI ($500,000) October 2006 - September 2010.
60. Ebert, D., Lasher-Trapp, S., "An Advanced Interactive Multifield, Multisource Atmospheric Visual Analysis Environment," NSF SEIII program, $686,163, July 2005-June 2010.
61. Ebert, D., "Task Adaptable Display of Information for Training, Maintenance, and Emergency Response," AFOSR, $199,841, July 2005 - December 2006.
62. Ebert, D., "Interactive Cloud Modeling and Animation Software," Purdue University Trask Trust Fund, $38,714, June 2004 - June 2006.
63. Ebert, D., Tan, H., "Quantifying and Increasing Information Transmission with Data Perceptualization," NSF ACIR Program, $285,134, September 2003 - August 2007.
64. Levit, J., Ebert, D., Hansen, C., "Advanced Weather Data Visualization," NSF ACIR Program, $298,311, August 2002 - August 2007.
65. Lundstrom, M., Hess, K., Sameh, A., Bottum, J., Pekny, J., "Network for Computational Nanotechnology," NSF EEC, $16,500,000, September 2002 - October 2010 (Ebert SI in visualization ~$500K).
66. Hoffman, C., Ebert, D., Sameh, A., Grama, A., Bottom, J., "Acquisition of Equipment for Purdue Envision Center for Data Perceptualization," NSF MRI Program, $862,011, September 2002 - August 2005.
67. Ebert, D. (PI), Marcum, D., Gaither, K., Hart, J., Rheingans, P., Fedkiw, R., "ITR/AP+IM: Procedural Representation and Visualization Enabling Personalized Computational Fluid Dynamics," NSF ITR Program (ACI) ($3,419,155), September 2001 - August 2007.
68. Tan, H., Ebert, D., Pizlo, Z., Hirleman, E., Maciejewski, A., "Haptic Texture Perception and Rendering for Personal Robotics," NSF IIS 0098443 ($310,101), August 2001 - July 2004.
69. Rheingans, P., Ebert, D., "ITR: Volume Illustration: Non-Photorealistic Rendering of Volume Models", NSF ITR Program (ACI) ($448,863), September 2000 - August 20004.
70. Rheingans, P., Ebert, D., "Visualization of Mobile Information Access Patterns," Aether Systems Inc. ($40,000), September 2000 - June 2001.
71. Ebert, D., "Visualization and Software Architectures for Volumetric Displays," National Science Foundation 9978032 ($305,645), September 1999 - August 2004.
72. Ebert, D., "The Use of Maya as a Research Platform for Procedural Modeling and Animation," Alias/Wavefront ($250,000 software), September 1998 - May 2000.
73. Ebert, D., "Volumetric Display of Earth and Space Science Data," NASA GSFC ($43,982), January 1998 - June 2000.
74. Ebert, D., "Staging of Prostate Cancer," Catholic University of America ($8000), consulting agreement to NIH grant project, Yue Wang (PI), January 1998 - December 1999.
75. Nicholas, C., Ebert, D., Miller, E., "Architectures for Data Driven Information Processing," Department of Defense ($2,998,378), June 1997 - May 2002.
76. Ebert, D., "Volumetric Display of Earth and Space Science Data," NASA GSFC ($7667), June 1997 - September 1997.
77. Roberts, D., Ebert, D., Goldstein, M., Treinish, L., Spicer, D., "Desktop Stereoscopic Visualization and Analysis of Multi-dimensional Data Sets," NASA ($541,300), January 1997 - May 2003. (UMBC/Purdue portion ~$190,000).
78. Ebert, D. "Enhanced Accurate Medical Volume Rendering," Johns Hopkins University Medical Center ($4,058), July 1996 - August 1996.

79. Ebert, D. "BFRL HTML Conversion and Automation," NIST Building and Fire Research Lab, ($14,909), May 1995.
80. Ebert, D., "Interactive Stereo Volume Visualization for Space Physics Data," NASA Goddard Space Flight Center ($69,571), March 1995 - June 1997.
81. Ebert, D., "RIA: Realistic Interactive Visualization for Computational Fluid Dynamics," NSF RIA CCR-9409243 ($61,168), September 1994.
82. Ebert, D., "Realistic Interactive Visualization for Computational Flows," UMBC DRIF AWARD ($4500), May 1994.

PATENTS
1. US Patent No. 8,924,332 – "Forecasting Hotspots Using Predictive Visual Analytics," issued on December 30, 2014.
2. US Patent No. 8,882,664 – "Animal Symptom Visual Analytics," issued on November 11, 2014.
3. US Patent No. 8,849,728 – "Visual Analytics Law Enforcement Tools," issued on September 30, 2014.
4. US Patent No. 8,605,592 – "Dietary assessment system and method," issued on December 10, 2013.
5. US Patent No. 8,363,913 – "Dietary assessment system and method," issued on January 29, 2013.
6. US Patent No. 8,115,766 – "System and Methods for Rendering Flows and Volumes," issued on February 14, 2012.
7. US Patent No. 7,724,258 – "Computer Modeling and Animation of Natural Phenomena," issued on May 25, 2010.

REFEREED JOURNAL PUBLICATIONS (including refereed video journals)
1. Zhang, J., Wang, Y., Molino, P., Li, L., & Ebert, D. S., "Manifold: A Model-Agnostic Framework for Interpretation and Diagnosis of Machine Learning Models." *IEEE Transactions on Visualization and Computer Graphics,* to appear 2018.
2. Kim, S., Jeong, S., Woo, I., Jang, Y, Maciejewski, R., Ebert, D., "Data Flow Analysis and Visualization for Spatiotemporal Statistical Data without Trajectory Information," *IEEE Transactions on Visualization and Computer Graphics,* 2018.
3. Tay, L., Ng, V., Malik, A., Zhang, A., Zhang, J., Chae, J., Ebert, D., Ding, Y., Zhao, J., "Big Data Visualizations in Organizational Sciences," *Organizational Research Methods (ORM),* 2017.
4. Weber, G., Carpendale, S., Ebert, D., Fisher, B., Hagen, H., Schneiderman, B., Ynnerman, A., "Apply or Die: On the Role and Assessment of Application Papers in Visualization," *IEEE Computer Graphics and Applications,* 2017.
5. Xia, J., Hou, Y., Chen, V., Qian, C., Ebert, D., Chen, W., "Visualizing Rank Time Series of Wikipedia Top Viewed Pages," *IEEE Computer Graphics and Applications,* 2017.
6. Ko, S., Cho, I., Afzal, S., Yau, C., Chae, J., Malik, A., Beck, K., Jang, Y., Ribarsky, W., Ebert, D., "A Survey on Visual Analysis Approaches for Financial Data", *Computer Graphics Forum 35(3),* 2016.
7. Zhang, J., Ahlbrand, B., Malik, A., Chae, C., Min, Z., Ko, S., Ebert, D. "A Visual Analytics Framework for Microblog Data Analysis at Multiple Scales of Aggregation," *Computer Graphics Forum 35(3),* 2016.
8. Towers, S., Afzal, S., Bernal, G., Bliss, N., Brown, S., Espinoza, B., ..., Ebert, D., "Mass media and the contagion of fear: the case of ebola in America," *PloS one*, *10*(6), e0129179, 2015.
9. Malik, A., Maciejewski, R., Towers, S., McCullough, S., Ebert, D., "Proactive Spatiotemporal Resource Allocation and Predictive Visual Analytics for Community Policing and Law Enforcement," *IEEE Transactions on Visualization and Computer Graphics* (Proceedings of IEEE VAST 2014), 2014.
10. Ko, S., Zhao, J., Xia, J., Afzal S., Wang X., Abram G., Elmqvist N., Kne L., Riper, D., Gaither K., Kennedy, S., Tolone, W., Ribarsky W., Ebert, D, "VASA: Interactive Computational Steering of Large Asynchronous Simulation Pipelines for Societal Infrastructure," *IEEE Transactions on Visualization and Computer Graphics* (Proceedings of IEEE VAST), 2014.
11. Chae, J., Thom, D., Jang, Y., Kim, S., Ertl, T., Ebert, D., "Visual Analytics of Microblog Data for Public Behavior Response Analysis in Disaster Events", extended journal paper, *Computers and Graphics*, 2013.
12. Walton, S., Berger, K., Ebert, D., Chen, M., "Vehicle Object Retargeting from Dynamic Traffic Videos for Real-Time Visualization," *The Visual Computer,* 2013.
13. Owen, G., Domik, G., Ebert, D., Kohlhammer, J., Rushmeier, H., Sousa Santos, B., Weiskopf, D., "How Visualization Courses Have Changed over the Past 10 Years," *IEEE Computer Graphics and Applications,* 2013.
14. Chen, V., Razip, A., Ko, S., Qian, C., Ebert, D., "Multi-aspect Visual Analytics on Large-scale High-dimensional Cyber Security Data," *Information Visualization,* 2013.
15. Kim, S., Maciejewski, R., Malik, A., Jang, Y., Isenberg, T., Ebert, D., "Bristle Maps: A Multivariate Abstraction Technique for Geovisualization," *IEEE Transactions on Visualization and Computer Graphics,* 2013.
16. Afzal, S., Maciejewski, R., Jang, Y., Elmqvist, N., Ebert, D., "Spatial Text Visualization Using Automatic Typographic Maps," *IEEE Transactions on Visualization and Computer Graphics (Proceedings IEEE Information Visualization),* 2012.
17. Malik, A., Maciejewski, R., Jang, Y., Oliveros, S., Yang, Y., Maule, B., White, M., Ebert, D., "A Visual Analytics Process for Maritime Response, Resource Allocation and Risk Assessment." *Information Visualization,* 2012.
18. Maciejewski, R., Jang, Y., Leitte, H., Woo, I., Gaither, K., Ebert, D., "Abstracting Attribute Space for Transfer Function Design," *IEEE Transactions on Visualization and Computer Graphics,* 2012.
19. Ko, S., Jang, Y., Maciejewski, R., Ebert, D., "MarketAnalyzer: An Interactive Visual Analytics System for Analyzing Competitive Advantage Using Point of Sale Data," *Computer Graphics Forum (Proceedings of IEEE/Eurographics EuroVis 2012,* 2012.
20. Daugherty, B. Schap, T., Ettienne-Gittens, R., Zhu, F., Bosch, M., Delp, E., Ebert, D., Kerr, D., Boushey, C., "Novel technologies for assessing dietary intake: Evaluating the usability of a mobile telephone food record among adults and adolescents," *Journal of Medical Internet Research,* 2012.

21. Livengood, P., Maciejewski, R., Chen, W., Ebert, D., "OmicsVis: An Interactive Tool for Visually Analyzing Metabolomics Data," *BMC Bioinformatics*, 2012.
22. Kwon, B., Javed, W., Ghani, S., Elmqvist, N., Yi, J., Ebert, D., "Evaluating the Role of Time in Investigative Analysis of Document Collections Manuscript Type," *IEEE Transactions on Visualization and Computer Graphics,* 2012.
23. Elmqvist, N., Ebert, D., "Leveraging Multidisciplinarity in a Visual Analytics Graduate Course," *IEEE Computer Graphics and Applications,* May/June 2012.
24. Lee, C., Chae, J., Schap, T., Kerr, D., Delp, E., Ebert, D., Boushey, C., "Comparison of Known Food Weights With Image-Based Portion Size Automated Estimation And Adolescents' Self-Reported Portion Size," Journal of Diabetes Science and Technology, Vol. 6., No. 2, March , 2012
25. Maciejewski, R., Pattath, A., Ko, S., Hafen, R., Cleveland, W., Ebert, D., "Automated Box-Cox Transformations for Improved Visual Encoding," *IEEE Transactions on Visualization and Computer Graphics,* 2012.
26. Woo, I., Maciejewski, R., Gaither, K. and Ebert, D., "Feature-driven Data Exploration for Volumetric Rendering," *IEEE Transactions on Visualization and Computer Graphics,* 2012.
27. Jang, Y., Gaither, K., Ebert, D., "Time-Varying Data Visualization Using Functional Representations," *IEEE Transactions on Visualization and Computer Graphics,* 2011.
28. Maciejewski, R., Livengood, P., Rudolph, S., Collins, T., Ebert, D., Brigantic, R., Corley, C., Muller, G., Sanders, S., "A Pandemic Influenza Modeling and Visualization Tool," *Journal of Visual Languages and Computing,* 2011.
29. Schap, T., Six, B., Delp, E., Ebert, D., Kerr, D., and Boushey, C., "Adolescents in the United States can identify familiar foods at time of consumption and when prompted with an image 14 hours post-prandial but poorly estimate portions," *Public Health Nutrition,*2011.
30. Maciejewski, R., Hafen, R., Rudolph, S., Larew, S., Mitchell, M., Cleveland, W., Ebert, D., "Forecasting Hotspots - A Predictive Analytics Approach, *IEEE Transactions on Visualization and Computer Graphics, 17(4)* 2011.
31. Lagae, A., Lefebvre, S., Cook, R., DeRose, T., Drettakis, G., Ebert, D., Lewis, J.P., Perlin, K., Zwicker, M., "A Survey of Procedural Noise Functions," *Computer Graphics Forum,* 2010.
32. Zhu, F., Bosch, M., Woo, I., Kim, S., Boushey, C., Ebert, D., Delp, E., "The Use of Mobile Devices in Aiding Dietary Assessment and Evaluation," *IEEE Journal of Selected Topics in Signal Processing,* 2010.
33. Arthur, D., Lasher-Trapp, A., Abdel-Haleem, A., Klosterman, N., and Ebert, D., "A New Three-Dimensional Visualization System for Combining Aircraft and Radar Data And Its Application To RICO Observations," J. Atmos. Oceanic Tech., 27, 2010.
34. Six, B., Schap, T., Zhu, F., Mariappan, A., Bosch, M., Delp, E., Ebert, D., Kerr, D., Boushey, C., "Evidence-Based Development of a Mobile Telephone Food Record," *Journal of the American Dietary Association,* 110:74-79, 2010.
35. Maciejewski, R., Rudolph, S., Hafen, R., Abusalah, A., Ouzzani, M., Cleveland, W., Grannis, S., Ebert, D., "A Visual Analytics Approach to Understanding Spatiotemporal Hotspots," *IEEE Transactions on Visualization and Computer Graphics,* 16(2), 2010.
36. Lu, A., Maciejewski, R., Ebert, D., "Volume Composition and Evaluation using Eye Tracking Data," *ACM Transactions on Applied Perception,*7(1), 2010.
37. Chen, W., Yan, Z., Zhang, Song, Crow, J., Ebert, D., McLaughlin, R., Mullins, K., Cooper, R., Ding, Z., Liao, J., "Modeling and Illustration of Muscle from Diffusion Tensor Images," *IEEE Transactions on Visualization and Computer Graphics,* Nov. 2009.
38. Maciejewski, R., Woo, I., Chen, W., Ebert, D., "Structuring Feature Space: A Non-Parametric Method for Volumetric Transfer Function Generation," *IEEE Transactions on Visualization and Computer Graphics,* Nov. 2009.
39. Robertson, G., Ebert, D., Eick, S., Keim, D., Joy, K., "Scale and Complexity in Visual Analytics," *Information Visualization* 2009.
40. Kasik, D., Ebert, D., Lebanon, G., Park, P, Pottenger, W., "Data Transformations and Representations for Computation and Visualization," *Information Visualization,* 2009.
41. Woo, I., Kim, S., Maciejewski, R., Thomas, K., Ropp, T., Ebert, D., "SDViz: A Context-Preserving Interactive Visualization System for Technical Diagrams," *Computer Graphics Forum (Proceedings of EuroVis 2009*), 2009.
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24. Ebert, D., "Procedural Volumetric Modeling and Animation of Clouds and Other Gaseous Phenomena," *SIGGRAPH 2001 Course Notes #47: Simulating Nature: Realistic and Interactive Techniques,* Chapter 5, August 2001.
25. Ebert, D., "Procedural Volumetric Cloud Modeling and Animation," *SIGGRAPH 2000 Course Notes #25: Simulating Nature: From Theory to Practice,* Chapter 5, July 2000.
26. Ebert, D., "Procedural Volumetric Cloud Modeling and Animation*," SIGGRAPH 99 Course Notes #26: Simulating Nature: From Theory to Practice,* Chapter 5, August 1999.
27. Ebert, D., "Procedural Volumetric Modeling and Texturing," *SIGGRAPH 98 Course Notes #16: Procedural Implicit Techniques for Modeling and Texturing,* Chapter 6, July 1998.
28. Ebert, D., "Procedural Volumetric Modeling and Texturing," *SIGGRAPH 97 Course Notes #33: New Frontiers in Modeling and Texturing,* Chapter 6, August 1997
29. Ebert, D., "Volumetric Procedural Modeling and Animation," *SIGGRAPH 96 Course Notes #10: Procedural Modeling and Animation Techniques,* Chapter 3, August 1996.
30. Ebert, D., "Procedural Modeling, Rendering, and Animation of Gases, Fluids, and Textures," *SIGGRAPH 95 Course Notes #33: Procedural Modeling, Texturing, and Animation Techniques*, August 1995.
31. Ebert, D., "Procedural Modeling and Animation of Gases and Fluids," *SIGGRAPH 94 Course Notes #8: Procedural Modeling, Texturing, and Rendering Techniques*, July 1994.
32. Ebert, D., "Procedural Gases," *SIGGRAPH '94 Course Notes#22: Modeling Natural Phenomena*, July 1994.
33. Ebert, D., "Procedural Modeling and Animation of Gases, Fluids, and Fire," *SIGGRAPH 93 Course Notes #44: Procedural Modeling and Rendering Techniques*, July 1993.
34. Ebert, D., "Modeling and Animating Gases and Fluids," *SIGGRAPH 92 Course Notes #23: Procedural Modeling and Rendering Techniques*, July 1992.

TECHNICAL REPORTS

1. Carlson, W., Ebert, D., Parent, R., and Boyer, K., "EDGE Library", OSU Technical Report, OSU-CISRC-01/90-TR-03, January 1990.
2. Ebert, D. and Parent, R., "Animation of Gaseous Phenomena Using Turbulent Flow Based Solid Texturing," OSU Technical Report, OSU-CISRC-08/89-TR36, August 1989.

INVITED PRESENTATIONS

1. Ebert, D., "Human-Computer Collaborative Decision Making Through Visual Analytics: Changing The World", University of Delaware, **Distinguished Lecture,** December 2017.
2. Ebert, D., "Human-Computer Collaborative Decision Making Through Visual Analytics: Changing The World," Big Data Congress 2017, **Invited Keynote,** November 2017.
3. Ebert, D., "Human-Computer Collaborative Decision Making for Public Safety and Resiliency," University of Maryland, November 2017.
4. Ebert, D., "Visual Analytics for Security Applications," EU 7th Framework Trillion Team Retreat, October 2017.
5. Ebert, D., "Human-Computer Collaborative Decision Making Through Visual Analytics," **Data Science Distinguished Lecture,** U.S. Government, August 2017.

6. Ebert, D., "Fundamentals and Applications of Visual Analytics." VACCINE Minority Serving Institution Faculty Summer Workshop, June 2017.
7. Ebert, D., Visual Analytics for Security Applications, 16th ADSA Conference, May 2017.
8. Ebert, D., "Changing the World with Visual Analytics," IEEE Pacific Visualization Conference, **Invitited Keynote**, April 2017.
9. Ebert, D., "Visual Analytics: Enabling Innovation in the Digital Age," **Invited Distinguished Lecture,** Sejong University, Seoul, Korea, April 2017.
10. Ebert, D., "Visual Analytics for Security Applications," U.S. Coast Guard D14, January 2017.
11. Ebert, D., "Visual Analytics for Biological and Scientific Discovery," Cold Spring Harbor National Labs, December 2016.
12. Ebert, D., "Empowering Effective Decision Making Through Visual Analytics," Purdue Global Defense and Security Summit, December 2016.
13. Ebert, D., "Empowering Effective Decision Making Through Visual Analytics," Oak Ridge National Labs, November 2016.
14. Ebert, D., "Visual Analytics Education: Introduction, Where, & When," United States Air Force Academy, October 2016.
15. Ebert, D., "Application Papers: One Size Doesn't Fit All," IEEE VIS 2017 panel on Application Papers, October 2016.
16. Ebert, D., "Ideas and Purdue Predictive and Financial Visual Analytics Work," U.S. Government Workshop on Financial Visual Analytics, June 2016.
17. Ebert, D., "Human-Computer Collaborative Decision Making." VACCINE Minority Serving Institution Faculty Summer Workshop, May 2016.
18. Ebert, D., "Evolving Foundations and Understanding of Visual Analytics Theory: The Past, Present And Future," **Invited Capstone,** *Symposium on Theoretical Foundation of Visual Analytics,* Alan Turing Institute, April 2016.
19. Ebert, D., "Human-Computer Collaborative Decision Making." City University, London, April 2016.
20. Ebert, D., "From Big Data to Data-Driven Policy and Decision Making: Empowering Effective Decision Making Through Visual Analytics," *49th Hawaiian International Conference on Systems Sciences*, January 2016.
21. Ebert, D., "Examples and Issues In Security Through Trusted Collaboration Over Social Networks," **Invited Keynote**, *IEEE GlobeComm Workshop: Social Collaborative Internet,* December 2015.
22. Ebert, D., "From Big Data to Data-Driven Policy and Decision Making: Empowering Effective Decision Making Through Visual Analytics," U.S. Air Force Academy, November 2015.
23. Ebert, D., "Technology and Information Fusion Needs to Address the Food, Energy, Water Systems (FEWS) Nexus Challenges," National Science Foundation Workshop, November 2015.
24. Ebert, D., **"**The Professional Ecology of Visualization," *IEEE VIS 2015* panel presentation, November 2015.
25. Ebert, D., Big Data Analytics: Solution for Data-Driven Decision Making," President's Back to Class Lecture, October 2015.
26. Ebert, D., "Visual Analytics for Strategic Decision Making," DHS Joint Task Force East, September 2015.
27. Ebert, D. Empowering Effective Decision Making Through Visual Analytics, Intergraph Systems, August 2015.
28. Ebert, D., "Data Driven Goals and Metrics for the Southern Border Initiative," Joint Task Force East Strategy Meeting, July, 2015.
29. Ebert, D., "Empowering Effective Decision Making Through Visual Analytics," TSA, June 2015.
30. Ebert, D.,"VACCINE: Empowering Effective Decision Making Through Visual Analytics," John Deere, May 2015.
31. Ebert, D., "Visualization and Analytics for Financial Security," Cyber Security in the Financial Services Industry, 2015, SWIFT Institute/University of Delaware, April 2015.
32. Ebert, D., "Beyond Big Data Analytics: Empowering Effective Decision Making Through Visual Analytics," **Distinguished Lecture,** Bethune-Cookman University, February 2015.
33. Ebert, D., "VACCINE: Advanced Interactive Visual Analytic Environments," General Electric, January 2015.
34. Ebert, D., "Empowering Effective Decision Making Through Visual Analytics," U.S. Citizenship and Immigration Services, Washington, D.C., December 2014.
35. Ebert, D., "Visual Analytics for Effective Decision Making," U.S. Coast Guard District Eight, New Orleans, LA, December, 2014.
36. Ebert, D., "Visual Analytics for Security Applications," *U.S. DHS Cybersecurity Division Summit,* Washington, DC, December 2014.
37. Ebert, D., "Beyond Big Data Analytics: Empowering Effective Decision Making Through Visual Analytics," **Distinguished Lecture,** School of Computing, Informatics, and Decision Systems Engineering, Arizona State University, November 2014.
38. Ebert, D., "Using Analytics to Stay Ahead of Crime" *International Association of Chiefs of Police Conference,* Orlando, FL, October 2014.
39. Ebert, D., "Leveraging Social Media to Improve Disaster Response and Recovery," *International Association of Chiefs of Police Conference,* Orlando, FL, October 2014.
40. Ebert, D., "Big Data and Visual Analytics: Decision-Makers of the Digital Age," President's Back To Class Lecture, Purdue University, October 2014.
41. Ebert, D., "Visual Analytics Solutions for Data-Driven Decision Making," U.S. Senate Homeland Security Appropriations Staff Briefing, October 2014.
42. Ebert, D., "Visual Analytics Solutions for Data-Driven Decision Making," U.S. Customs and Border Patrol Air Marine Operations Center, Riverside, CA., September 2014
43. Ebert, D., "Visual Analytics Solutions for Coast Guard Data-Driven Decision Making," U.S. Coast Guard Deputy Commandant of Operations Briefing, Washington, D.C., September 2014.

44. Ebert, D., "Visual Analytics Solutions for Data-Driven Decision Making," Federal Emergency Management Agency, Washington, D.C., August 2014.
45. Ebert, D., "Visual Analytics Solutions for The Real World," Visual Analytics Minority Serving Institution Faculty Workshop, Baltimore, MD, July 2014.
46. Ebert, D., "Visual Analytics Solutions for Data-Driven Decision Making," U.S. Coast Guard Pacific Area Command STIR Workshop, Alameda, CA, June, 2014.
47. Ebert, D., "Visualization Literacy: Research Challenges Do You See What I See?," Eurovis Visualization Literacy Workshop, Swansea, Wales, June 2014.
48. Ebert, D., Beck, K., "VACCINE and Visual Analytics Solutions," DHS Science Policy and Analysis Research Division, May 2014.
49. Ebert, D., "Visual Analytics: The Power To Solve Big Data Challenges Through Interaction And Visual Reasoning," *American Psychological Sciences Conference,* San Francisco, May 2014.
50. Ebert, D., "Empowering Discovery and Decision Making Through Visual Analytics," Eduvis Summit 2014, **Invited Keynote Talk,** Austin, TX, May 2014.
51. Ebert, D., "Empowering Effective Decision Making Through Visual Analytics, Georgia Tech School of Computing, Invited Lecture, April, 2014.
52. Ebert, D., "Visual Analytics: The Right Solution for Big Data and Global Challenges," Boeing Data Analytics Community of Excellence, **Invited Distinguished Lecture**, March 2014.
53. Ebert, D., "VACCINE and Visual Analytics Solutions," Joint Interagency Task Force South Briefing, March 2014.
54. Ebert, D., "COAST Case Study," DHS S&T Data Workshop, Washington, D.C., February 2014.
55. Ebert, D., "Visual Analytics For Shared, Synchronized Situational Awareness," U.S. Coast Guard Atlantic Area Command Briefing, Portsmouth, VA, February 2014.
56. Ebert, D., "VACCINE First Responder Technology," DHS University Centers of Excellence Innovation Showcase, U.S. Department of Homeland Security, Washington, D.C., February 2014.
57. Ebert, D., "Visual Analytics for Cybersecurity, OeRC Oxford, December 2013.
58. Ebert, D., "Big Data, Visualization and Risk-Based Decision Making," National Strategic Maritime Risk Stakeholders Alliance Meeting, November, 2013.
59. Ebert, D., "Visual Analytics for Investigation and Law Enforcement," U.S, Immigrations and Customs Enforcement, October, 2013.
60. Ebert, D., "Visual Analytics for Security, Privacy, and Safety: Approaches, Lessons Learned, Opportunities, and Challenges", *IEEE Visualization for Security Symposium (Vizsec),* **Invited Keynote Talk,** October 2013.
61. Ebert, D., "Visual Analytics: Overcoming Challenges to Create Tools for Decision Making," *IEEE Public Health's Wicked Problems: Can Infovis Save Lives Workshop,* October 2013.
62. Ebert, D., "Evaluation: Multistep and Multilevel," IEEE VIS Conference Panel on Evaluation for Visualization, October 2013.
63. Ebert, D., "Visual Analytics: The Right Solution for Big Data and Global Challenges," **Invited Distinguished Lecture,** School of Informatics, Indiana University, September 2013.
64. Ebert, D., "Visual Analytics Solutions for Big Data: Perspectives and Examples from VACCINE," Department of Energy Big Data Workshop, **Invited Distinguished Lecture**, Argonne National Lab, IL, May 2013.
65. Ebert, D., "Visual Analytics Solutions for Big Data and Global Challenges," **Invited Distinguished Lecture,** OeRC Oxford University, UK, April 2013.
66. Ebert, D., "Visual Analytics Applications for Law Enforcement," Indiana State Police, April 2013.
67. Ebert, D., "Visual Analytics for Decision Making," DHS Intelligence and Analysis, Washington, D.C., April 2013.
68. Ebert, D., "Innovation with Impact," Siemens Healthcare Webinar, March 2013.
69. Ebert, D., "Transitioning GARI to Law Enforcement and ICE", DHS Center of Excellence Congressional Orientation Webinar, Washington, D.C., March, 2013.
70. Ebert, D., "Visual Analytics: A Lifeboat in the Big Data Ocean: Interpreting Visualized Data for Defense and Government," Big Data for Defense and Intelligence Summit, Washington, D.C., **Invited Keynote Talk,** February 2013.
71. Ebert, D., "Predictive Visual Analytics," U.S. Customs and Immigration Service Volume Projection Committee, Washington, D.C., February, 2013.
72. Ebert, D., "Visual Analytics for Financial Analytics, Fraud, and Decision Making," U.S. Customs and Immigration Service Fraud and National Security Division, Washington, D.C., February, 2013.
73. Ebert, D., "Visual Analytics for Effective Planning, Analysis, and Decision Making," Central Intelligence Agency, Washington, D.C., February, 2013.
74. Ebert, D., "Visual Analytics for Decision Making," Department of Homeland Security First Responder Group, Washington, D.C., January, 2013.
75. Ebert, D., "Visual Analytics for Decision Making," Department of Homeland Security Cybersecurity Division, Washington, D.C., January, 2013.
76. Ebert, D., "Visual Analytics: A Lifeboat in the Big Data Ocean," Hawaiian International Conference on Systems Science, Maui, HI, January, 2013.
77. Ebert, D., "Visual Analytics in Public Health," Visualization and Analysis for Public Health Surveillance Workshop, Lahore, Pakistan, December 2013.

78. Ebert, D., "Visual Analytics for Risk-Based Decision Making: Anytime and Anywhere," 2012 Maritime Risk Symposium, Los Angeles, CA, November 2012.
79. Ebert, D., "Spatiotemporal Visualization and Analysis of Gang-related Criminal Activity Using Mobile Imaging," American Public Health Association Annual Meeting, San Francisco, CA, October 2012.
80. Ebert, D., "Visual Analytics for Decision Making," Immigration and Customs Enforcement Headquarters, Washington, DC, October 2012.
81. Ebert, D., "Visual Analytics for Decision Making," Department of Homeland Security Headquarters, Washington, DC, October 2012.
82. Ebert, D., "Risk-based Financial Visual Analytics," *IEEE Visualization 2012*, Financial Visual Analytics Panel, Seattle, WA, October 2012.
83. Ebert, D., "Visual Analytics for Law Enforcement," Indiana State Police, Indianapolis, IN, September 2012.
84. Ebert, D., Maciejewski, R., "From Foundations to Applications of Visual Analytics," 2nd Annual UKVAC International Visual Analytics Summer School, London, UK, September 2012.
85. Ebert, D., "How Can Visual Analytics Help Cartography," **Keynote talk,** Oxford University Workshop on Challenges in Geospatial Visualization, Oxford, England, August 2012.
86. Ebert, D, "Fundamentals of Visual Analytics," **Keynote Talk,** Vancouver Visual Analytics Summer School, Vancouver, CA, July 2012.
87. Ebert, D., "VACCINE, A DHS S&T Center of Excellence," United States Coast Guard Innovation Showcase, Washington, DC, June 2012.
88. Ebert, D., "Visual Analytics and Decision Making," Visual Analytics for Policy Making Workshop, Victoria, BC, June 2012.
89. Ebert, D., "Overview of VACCINE Projects and Capabilities," Ohio State Highway Patrol, May 2012.
90. Ebert, D., "Teaching Visual Analytics: Leveraging Multidisciplinarity," *Eurographics 2012 Panel,* Cagliari, Italy, May 2012.
91. Ebert, D., "Visual Analytics: From Situational Awareness to Risk-Based Decision Making," Financial Risk Visual Analytics Workshop, Banff, CA, May 2012.
92. Ebert, D., "Visual Analytics: Powering Discovery, Innovation, and Decision Making (Much more than Big Data Analytics plus Visualization), **Keynote talk,** *ISCRAM 2012, Information Systems for Crisis Response and Management,* Vancouver, BC, April 2012.
93. Ebert, D., "Visual Analytics: Powering Discovery, Innovation, and Decision Making (Much more than Big Data Analytics plus Visualization)," **Keynote talk,** *BRAVA 2012, 1ˢᵗ Brazilian Visual Analytics Workshop,* Sao Paulo, Brazil, March 2012.
94. Ebert, D., "Visualization and Analytics for Geospatial and Temporal Data," Ohio State Highway Patrol, Columbus, OH, March 2012.
95. Ebert, D., "Visual Analytics for Command Control and Interoperability Environments," U.S. Department of Homeland Security Science and Technology All Hands Meeting, Washington, DC, March 2012.
96. Ebert, D., "Predictive Visual Analytics for Discovery and Decision Making," **Keynote Talk,** Eli Lilly Corporate Research Symposium, Indianapolis, IN, January 2012.
97. Ebert, D., "Visual Analytics for Decision Making," HICSS Tutorial on Visual Analytics, HICSS 2012, Maui, HI, January 2012.
98. Ebert, D., "Visual Analytics Applications for Decision Making: From Research to End-User," **Keynote Talk,** NSF FODAVA Meeting, Atlanta, GA, December 2011.
99. Ebert, D., "Visual Analytics for Transportation Security," U.S. Transportation Security Agency Headquarters, Washington, DC, December 2011.
100. Ebert, D., "Visual Analytics for Public Health and Safety," NATO Workshop on Visualization and Health, Vancouver, CA, November 2011.
101. Ebert, D., "Risk-Based Visual Analytics for Maritime Resource Allocation," *2ⁿᵈ USCG Maritime Risk Symposium,* Piscataway, NJ, November 2011.
102. Ebert, D., "Visual Analytics to Enable Effective Policy and Decision Making," IEEE Visweek Panel on Visual Analytics for Policy Making*, IEEE Visweek 2011 Conference,* Portsmouth, VA, October 2011.
103. Ebert, D., "Predictive and Proactive Visual Analytics," US Coast Guard Atlantic Area Command, Portsmouth, VA September 2011.
104. Ebert, D., "Visual Analytics to Enable Discovery and Decision Making: Potential, Challenges, and Directions," Consortium for Supercomputing Advisory Council: Challenges and Future of High-Performance Computing, Washington, DC., September 2011.
105. Ebert, D., "Predictive and Proactive Visual Analytics," *ACM SIGKDD 2012 Conference Tutorial,* San Diego, CA, August 2011.
106. Ebert, D., "Visual Analytics for Command, Control, and Interoperability Environments," U.S. Transportation Safety Agency, Washington, DC, August 2012.
107. Ebert, D., "Predictive Interactive Visual Analytics for Homeland Security, State of Ohio Intelligence Fusion Center, Columbus, OH, July 2011.
108. Ebert, D., "Predictive Interactive Visual Analytics for Homeland Security," U.S. Transportation Safety Agency, Indianapolis, IN, June 2011.
109. Ebert, D., "Visual Analytics at Scale," Scientific Visualization Workshop, Dagstuhl Germany, June 2011.
110. Ebert, D., "Visual Analytics at Scale," VAC Consortium Meeting, College Park, MD, May 2011.

111. Ebert, D., "Interactive Visual Analytics for Crisis Management," US/Sweden Visual Analytics for Floods and Pandemics Workshop, Norrkoping, Sweden, April 2011.
112. Ebert, D., "Predictive Interactive Visual Analytics for Planning, Response, and Resiliency," DHS University Programs Summit, Washington, DC, March 2011.
113. Ebert, D., Maciejewski, R., "Visual Analytics in Healthcare Applications," North Carolina Bio-Preparedness Collaborative Webinar, March 2011.
114. Ebert, D., "Visual Analytics for Cascading Infrastructure Effects," *US/Germany Visual Analytics for Security Applications Workshop,* Berlin, Germany, February 2011.
115. Ebert, D., "Fundamentals and Applications of Visual Analytics," *HICSS 2011 Visual Analytics Tutorial*, January 2011.
116. Ebert, D., "Visual Analytics for Command, Control, and Interoperability Environments," *USCG Maritime Risk Symposium,* Los Angeles, CA, November 2010.
117. Ebert, D., "Visual Analytics at Scale: Challenges and Directions," *Exascale Visualization and Analysis Workshop* at IEEE Visweek 2010, Salt lake City, UT, October 2010.
118. Ebert, D., "Visual Analytics for Public Safety," DHS*/DRDC Public Safety Visual Analytics Workshop*, Vancouver, Canada, September 2010.
119. Ebert, D., "From Foundations to Applications of Visual Analytics," *Visual Analytics Summer School,* Middlesex, England, September 2010.
120. Ebert, D., "Visual Analytics for Strategic Planning, Response, Risk Management, and Recovery," *Welsh Assembly Government Visual Analytics Symposium,* Cardiff, Wales, September 2010.
121. Ebert, D., "Visual Analytics for the Health Sector," VAC Consortium, College Park, Md., September 2010.
122. Ebert, D., "Fundamentals of Visual Analytics," *SIGGRAPH 2010*, Los Angeles, CA, July 2010.
123. Ebert, D., "Visual Analytics for Command, Control, and Interoperability Environments," Justice Institute of British Columbia, Vancouver, Canada, July 2010.
124. Ebert, D., "Visual Analytics' Differentiating Challenges," EuroVAST 2010 **Keynote Talk**, Bordeaux, France, June 2010.
125. Ebert, D., "Visual Analytics: Powering Discovery, Innovation, and Action in the Digital Age," **Distinguished Lecture,** Purdue Silicon Valley Alumni Association, Palo Alto, CA, May 2010.
126. Ebert, D., "Proactive and Predictive Visual Analytics," National Research Council, Washington, D.C., May 2010.
127. Ebert, D., "Proactive and Predictive Visual Analytics," Air Force Research Lab, Dayton, OH, May 2010.
128. Ebert, D., "Visual Analytics: Powering Discovery, Innovation, and Action in the Digital Age," **Distinguished Lecture,** Charlotte Visualization Center, University of North Carolina Charlotte, April 2010.
129. Ebert, D., "Visual Analytics: Crucial for the Digital Information Age," **Distinguished Lecture,** RIVIC Visual Computing Graduate School, Swansea, Wales, April 2010.
130. Ebert, D., "Visual Analytics for Command, Control, and Interoperability Environments," Midwest Anti-Terrorism Advisory Council, U.S. Attorney's Office, Chicago, IL, March 2010.
131. Ebert, D., "Visual Analytics for Command, Control, and Interoperability Environments", DHS University Programs Summit, Washington, DC, March 2010
132. Ebert, D., "Visual Analytics: Powering Discovery, Innovation, and Action in the Digital Age," Jackson State University, January, 2010.
133. Ebert, D., Maciejewski, R., "Public Health Data Exploration, Analysis, Modeling, and Prediction Using Visual Analytics," U. S. Department of Health and Human Services, January 2010.
134. Ebert, D., "Visual Analytics: Powering Discovery, Decisions, and Actions from Floods of Data," **Distinguished Lecture,** Department of Computer Science and Engineering, The Ohio State University, October, 2009.
135. Ebert, D., Maciejewski, R., "Data Modeling and Exploration Using Visual Analytics," National Defense University, October, 2009.
136. Ebert, D., "Visual Analytics for Safety and Security," Middlesex University, September 2009.
137. Ebert, D., "Visual Analytics for Crisis Response and Emergency Management," Joint US/Germany Visual Analytics Conference, Konstanz, Germany, June 2009.
138. Ebert, D., "Visual Analytics: Powering Transformational Science and Engineering from Floods of Data," Microsoft Research Asia, April 2009.
139. Ebert, D., "Visual Analytics: Powering Transformational Science and Engineering from Floods of Data," **Keynote talk,** *DFG-SPP Scalable Visual Analytics Program* kick-off meeting, Germany, December 2008.
140. Ebert, D., "Health and Biosurveillance Visual Analytics," DHS Forum on Science and Biothreats Workshop, November 2008.
141. Ebert, D., "Health Visual Analytic Solutions," Visual Analytics Consortium Meeting, November 2008.
142. Ebert, D., "Visual Analytics Research Challenges for Security and Safety," Safety and Security Education and Research (SASER) Conference, October 2008.
143. Ebert, D., "Visual Analytics: More Than Just Visualization," IEEE Visweek Panel on "The Interdisciplinary Science of Visual Analytics, October 2008.
144. Ebert, D., "The Breadth and Depth of Visual Analytics," NSF Foundations of Data Analysis and Visualization Analytics Workshop, invited speaker, September 2008.
145. Ebert, D., "Visual Analytics: The Intelligent Evolution of Visualization," **Keynote Talk,** *Smart Graphics 2008,* September 2008.
146. Ebert, D., Maciejewski, R., "PURVAC Health Analytics and Visualization Overview," CDC Webinar, August 2008

147. Ebert, D., "Visual Analytics for Exploration and Discovery", *SIAM Workshop on Visualization and Analytics for Science Discovery,* July 2008.
148. Ebert, D., "Visual Analytics: From Definition to Applications," *DHS Stakeholders Summit,* June 2008.
149. Ebert, D., "Mobiquitous Graphics and Visualization: More Than Just Fun and Games?," **Keynote Talk,** *Graphics Interface 2008*, May 2008.
150. Ebert, D., "Visual Analytics for Discovery, Exploration, and Decision Making," Vienna Institute of Technology, April 2008.
151. Ebert, D., "Illustrative Visualization," Tutorial presentation at *Eurographics 2008,* April 2008.
152. Ebert, D., "Reasoning and Knowing Your Data: How Visual Analytics Can Help," Analytic Methodology Network Workshop, April 2008.
153. Ebert, D., "Visual Analytics: Considerations to Move from Research to Practice," Canadian Network for Visual Analytics' *Science and Application of Visual Analytics Workshop,* February 2008.
154. Ebert, D., "Mobile Analytics for Command & Control, Emergency Response, and Law Enforcement," National Visualization and Analytics Consortium Meeting, November, 2007.
155. Ebert, D., "Knowledge In, Knowledge Out: How Much Knowledge is Needed to Develop Insightful Visualizations," **keynote address**, *Knowledge-Assisted Visualization Workshop 2007,* October 2007.
156. Ebert, D., "Visual Analytics," *International Society for Disease Surveillance Conference - Analytics Workshop,* October 2007.
157. Ebert, D., "Visual Analytics as an Interdisciplinary Nexus," Texas Advanced Computing Center, August, 2007.
158. Ebert, D., "Visual Computing and Analysis as an Interdisciplinary Nexus," Battelle Pacific Northwest National Lab, May, 2007.
159. Ebert, D., "Visual Computing and Analysis as an Interdisciplinary Nexus," Clemson University, April, 2007.
160. Ebert, D., "Visual Analytics for Command and Control: Creating Actionable, Relevant Information from Multisource, Evolving Data," *DHS University Summit,* March 2007.
161. Ebert, D., "An Insider's View of the Publication Process," Panel: Publishing Your Visualization Research, *IEEE Visualization 2006,* 2006.
162. Ebert, D., "Visual Analytics Curriculum," Panel: Visual Analytics Education, *IEEE Symposium on Visual Analytics Science and Technology 2006,* 2006.
163. Ebert, D., "Purdue University Regional Visualization and Analytics Center - An Overview," Microsoft Research, April 2006.
164. Ebert, D., "Extending Graphics and Visualization to Visual Analytics," Boeing, April 2006.
165. Ebert, D., "Extending Graphics and Visualization to Visual Analytics," Simon Fraser University, March 2006.
166. Ebert, D., "Extending Graphics and Visualization to Visual Analytics," Pacific Northwest National Laboratories, February 2006.
167. Ebert, D., "Is Seeing Believing? How to Think Visually and Analyze with Both Your Eyes and Brain," Hoosier Association of Science Teachers Inc. (HASTI) 2006 Conference, February 2006.
168. Ebert, D., "Extending Graphics and Visualization to Visual Analytics," University of Minnesota, October 2005.
169. Ebert, D., "Interactive Volume Illustration for Medical and Surgical Training," Adobe, Inc., October 2005.
170. Ebert, D., "Extending Graphics and Visualization to Visual Analysis," National Center for Supercomputer Applications / University of Illinois, September 2005.
171. Ebert, D., "Interactive Volume Illustration for Medical and Surgical Training," *American Medical Illustration Conference,* July 2005.
172. Ebert, D., "Perception and Design Principles for Visual Analytics," *Fraunhofer IGD Workshop on Visual Analytics,* June 2005.
173. Ebert, D., "Education and Computational Science," *NIH/NSF Spring 2005 Workshop on Visualization Research Challenges,* May 2005.
174. Ebert, D., "Improved Task-Specific Visual Representation of Data Enabling Actionable Visual Analytics," *Working Together: Research & Development Partnerships in Homeland Security,* April 2005.
175. Ebert, D., "Advanced Graphical Methods for Information Conveyance," University of Notre Dame, November 2004.
176. Ebert, D., "Advanced Graphical Methods for Information Conveyance," **Distinguished Lecture**, Indiana University - Purdue University Indianapolis, October 2004.
177. Ebert, D., "Effective Image Generation Techniques for Visualization," Panel: The Future Visualization Platform, *IEEE Visualization 2004,* October 2004.
178. Ebert, D., "Effective Information Transmission," Panel: In the Eye of The Beholder: The Role of Perception in Scientific Visualization, *IEEE Visualization 2004,* October 2004.
179. Ebert, D., "Advanced Methods for Information Conveyance," University of New Mexico, August 2004.
180. Ebert, D., "Weather, Clouds, and Perceptualization," University of Stuttgart, May 2004.
181. Ebert, D., "Weather, Clouds, and Perceptualization," Mitsubishi Electronic Research Lab, May 2004.
182. Ebert, D., "Recent Research in Volume Rendering and Simulation," Digital Domain, December 2003.
183. Ebert, D., "Recent Research in Volume Rendering and Simulation," Rhythm & Hues, December 2003.
184. Ebert, D., "The Next Leap in Computer Graphics and Visualization Research," Department of Computer Science, University of New Mexico, November 2003.
185. Ebert, D., "The Next Leap in Computer Graphics and Visualization Research," Department of Computer and Information Science **Distinguished Lecture,** The Ohio State University, October 2003.
186. Ebert, D., "Perceptualization vs. Visualization: Information Transmission is the Key," *IEEE Visualization 2003 Panel: Do I*

Really See a Bone?, October 2003.

187. Ebert, D., "Procedural Cloud Modeling and Interactive Visualization, University of Washington, October 2003.
188. Ebert, D., "Research and Challenges in Volume Visualization and Procedural Techniques," Nvidia Corporation, September 2003.
189. Ebert, D., "The Next Leap in Computer Graphics and Visualization Research," Purdue Alumni Technical Exchange Breakfast, September 2003.
190. Ebert, D., "Research and Challenges in Volume Visualization and Procedural Techniques," ACM SIGGRAPH Campfire (Workshop) on *Visualization Meets Visual Effects*, September 2003.
191. Ebert, D., "Informative Interactive Volume Visualization Research," Army Research Lab Symposium, June 2003.
192. Ebert, D., "New Interactive Volume Visualization Research," *Dagstuhl Conference on Scientific Visualization: Extracting Information and Knowledge from Scientific Data Sets,* June 2003.
193. Ebert, D., "The Next Leap in Computer Graphics and Visualization Research," ETH Zurich, May 2003.
194. Ebert, D., "If Visualization is So Great, Why Doesn't Everyone Use It?" Vissym 2003 **Keynote address**, May 2003.
195. Ebert, D., "Interactive Volumetric Effects, Procedural Effects, and Simulation of Natural Phenomena," Electronic Arts, May 2003.
196. Ebert, D., "Interactive Volumetric Effects, Procedural Effects, and Simulation of Natural Phenomena," Mainframe Computer Graphics, May 2003.
197. Ebert, D., "The Future of Graphics and Visualization," University of California, Riverside, April 2003.
198. Ebert, D., "Interactive Volumetric Effects," Pacific Data Images / Dreamworks, December 2002.
199. Ebert, D., "Visualization as an Enabling Technology", *Vision, Modeling and Visualization 2002 Panel on the Future of Visualization,* November 2002.
200. Ebert, D., "Perceptualization: A Complete Approach to Visualization and Computer Graphics," University of Stuttgart, November 2002.
201. Ebert, D., "Perceptualization: A Complete Approach to Visualization and Computer Graphics," Georgia Institute of Technology, September 2002.
202. Ebert, D., "Graphics as an Enabling Technology," *SIGGRAPH 2002 Panel: The Future of Computer Graphics: An Enabling Technology?,* July 2002.
203. Ebert, D. "Procedural Techniques and Real-Time Graphics," ACM SIGGRAPH Campfire on Production of 3D Graphics, June 2002.
204. Ebert, D., "Perceptualization: Techniques for Effective Image Generation, Visualization, and Communication of Information," **Keynote talk,** Vision, Modeling, And Visualization 2001 Conference, Stuttgart, Germany, November 2001.
205. Ebert, D., "Procedural Volumetric Clouds: Modeling, Animation, and Real-Time Techniques," University of Stuttgart, November 2001.
206. Ebert, D., "Perceptualization: Techniques for Effective Image Generation, Visualization, and Communication of Information," University of Utah, Computer Science Colloquium, October 2001.
207. Ebert, D., "Perception, Proceduralism, and Amazing Interactive Graphics," CGW Panel on "The Next Big Thing in Computer Graphics," *SIGGRAPH 2001,* August 2001.
208. Ebert, D., "Beyond Realism: Procedural Techniques, Visualization, and Interactive Procedural Modeling and Animation," University Linkorrping, Sweden, June 2001.
209. Ebert, D., "Beyond Realism: Procedural Techniques, Visualization, and Interactive Procedural Modeling and Animation," University Kaiserslautern, Germany, May 2001.
210. Ebert, D. "New Advances in Computer Graphics and Visualization Techniques," Purdue ECE Industrial Affiliates Workshop, March 2001.
211. Ebert, D. "Beyond Realism: Procedural Techniques, Visualization, and Interactive Procedural Modeling and Animation," Purdue ACM SIGGRAPH student chapter, March 2001.
212. Ebert, D. "Realtime Procedural Texturing and Modeling," Electronic Arts, Inc., September 2000.
213. Ebert, D., "Photorealistic and Non-photorealistic Volumetric Procedural Modeling and Rendering," Mitsubishi Electronic Research Lab, July 2000.
214. Ebert, D., "Volume Visualization and Procedural Techniques for Graphics," United States Patent and Trademark Office, June 2000.
215. Ebert, D., "Procedural Techniques and Volume Graphics," Dagstuhl Visualization Seminar, May 2000.
216. Ebert, D., "Volume Visualization with a Real-Time Shading Language," Stanford University CS department, May 2000.
217. Ebert, D., "Effective Visualization Utilizing Perceptual Cues," Washington DC SIGGRAPH chapter, February 2000.
218. Ebert, D., "Effective Visualization Utilizing Perceptual Cues," Computer Science Department, Mississippi State University, November 1999.
219. Ebert, D., "Effective Visualization Utilizing Perceptual Cues," Mitsubishi Electronic Research Lab, October 1999.
220. Ebert, D., "Effective Visualization Utilizing Perceptual Cues," NSF Engineering Research Center, Mississippi State University, July 1999.
221. Ebert, D., "Scientific and Information Visualization," Army Research Lab, December 1998.
222. Ebert, D., "Perceptually-motivated Information Visualization," Department of Defense, November 1998.
223. Ebert, D., "Future of Information Visualization," Johns Hopkins University Applied Physics Lab Cybertech Lecture Series, November 1998.

224. Ebert, D., "Volumetric Procedural Modeling for Realistic Scene Generation," Blue Sky/VIFX and Cinesite, July 1998.
225. Ebert, D., "Visualization," Lister Hill Research Center, National Library of Medicine, series of 5 lectures, June 1998.
226. Ebert, D., "Perceptually-motivated Information Visualization," College of Library Science, University of Maryland College Park, December 1997.
227. Ebert, D., "Minimally-immersive Information Visualization," Computer Science Department, University of Maryland College Park, November 1997.
228. Ebert, D., "Volumetric Procedural Modeling," Computer Science Department, University of Pennsylvania, October 1997.
229. Ebert, D., "Minimally-immersive Scientific and Information Visualization," San Diego Supercomputer Center, September 1997.
230. Ebert, D., "Perceptually-motivated Information Visualization," P1000 Information Visualization Workshop, April 1997.
231. Ebert, D., "Introduction to Visualization," Northrop Grumman, February 1997.
232. Ebert, D., "Realistic Visualization and Modeling," UMBC Mechanical Engineering Department, February 1997.
233. Ebert, D., "Texturing and Modeling: Procedural Techniques for Realistic Computer Graphics," Computer Literacy Bookshop, January 1997.
234. Ebert, D., "Volumetric Procedural Modeling and Realistic Visualization," Case Western Reserve University, April 1996.
235. Ebert, D., "Volumetric Procedural Modeling and Realistic Visualization," Clemson University, April 1996.
236. Ebert, D., "Realistic Interactive Medical Visualization," ISIS, Georgetown University Medical Center, November 1995.
237. Ebert, D., "Realistic Scientific Visualization," NASA Goddard Space Flight Center, June 1995.
238. Ebert, D., "Procedural Gas Modeling and Animation," George Washington University, April 1995.
239. Ebert, D., "Rendering, Animation, and Visualization of Gaseous Phenomena," Washington D.C. SIGGRAPH, February 1994.
240. Ebert, D., "Rendering, Animation, and Realistic Visualization of Gases," NASA Goddard Space Flight Center, January 1994.
241. Ebert, D., "Rendering and Animation of Gaseous Phenomena," IBM T. J. Watson Research Center, April 1992.

COURSES

1. Ebert, D., "Visual Analytics," *2007 Syndromic Surveillance Conference Workshop on Analytics/Informatics,* November 2007.
2. Viola, I., Costa Sousa, M., Bruckner, S., Ebert, D., Correa, C., "Illustrative Display and Interaction in Visualization," course presented at *IEEE Visualization 2007,* October 2007.
3. Gaither, K. (organizer), Ebert, D., Papka, M., "Remote/Collaborative TeraScale Visualization on the TeraGrid," course presented at *IEEE Visualization 2006,* October 2006.
4. Viola, I., Costa Sousa, M., Ebert, D. (co-organizers), Andrews, B., Bruckner, S., Gooch, B., Preim, B., Svakhine, N., Stredney, D., "Illustrative Visualization" course presented at *IEEE Visualization 2006,* October 2006.
5. Viola, I. (organizer), Bruckner, S., Costa Sousa, M., Ebert, D., "Illustrative Visualization," course presented at *Eurographics 2006,* September 2006.
6. Ebert, D., Costa Sousa, M. (co-organizers), Andrews, B., Bruckner, S., Gooch, B., Svakhine, N., Stredney, D., Viola, I., "Illustrative Visualization for Medicine and Flows," course presented at *ACM SIGGRAPH 2006,* July 2006.
7. Viola, I., Groeller, E., Hadwiger, M., Preim, B., Costa Sousa, M., Ebert, D., Stredney, D., "Illustrative Visualization," course presented at *IEEE Visualization 2005,* September 2005.
8. Viola, I., Groeller, E., Preim, B., Ebert, D., Buelher, K., Hadwiger, M., "Illustrative Visualization," course presented at *Eurographics 2005,* August 2005.
9. Costa-Sousa, M., Ebert, D., Gooch, A., Stredney, D., "Computer-Generated Medical, Technical, and Scientific Illustration," course presented at *SIGGRAPH 2005,* August 2005.
10. Gaither, K., Ebert, D., Hagen, H., Jang, J., Nielson, G., "Procedural Encoding of Scattered Data, Theory and Applications," course presented at *IEEE Visualization 2004,* October 2004.
11. Ebert, D., (chair), Deussen, O., Fedkiw, R., Musgrave, F., Prusinkiewicz, P., Roble, D., Stam, J., Tessendorf, J., "The Elements of Nature: Interactive and Realistic Techniques", course to be presented at *SIGGRAPH 2004,* August, 2004
12. Ebert, D., (chair), Deussen, O., Fedkiw, R., Musgrave, F., Prusinkiewicz, P., Stam, J., "Simulating Nature: Realistic and Interactive Techniques," course presented at *SIGGRAPH 2003,* July 2003.
13. Sousa, M., Achorn, B., Carpendale, S., Ebert, D., Interrante, V., Gooch, B., Streit, L., Teece, D., Veryovka, O., "Theory and Practice of Non-Photorealistic Graphics: Algorithms, Methods, and Production Systems," course presented at *SIGGRAPH 2003,* July 2003.
14. Ebert, D., Gross, M., Wyvill, B.,"Alternative Representations of Geometry," course presented at *SIGGRAPH 2002,* July 2002.
15. Ebert, D., (chair), Deussen, O., Fedkiw, R., Musgrave, F., Prusinkiewicz, P., Stam, J., Tessendorf, J., "Simulating Nature: Realistic and Interactive Techniques," course presented at *SIGGRAPH 2002,* July 2002.
16. Ebert, D., (chair), Fedkiw, R., Musgrave, F., Prusinkiewicz, P., Stam, J., Tessendorf, J., "Simulating Nature: Realistic and Interactive Techniques," course presented at *SIGGRAPH 2001,* August 2001.
17. Ebert, D., (chair), Musgrave, F., Prusinkiewicz, P., Stam, J., Tessendorf, J., "Simulating Nature: From Theory to Practice," course presented at *SIGGRAPH 2000,* July 2000.
18. Ebert, D., (chair), Foster, N., Musgrave, F., Prusinkiewicz, P., Tessendorf, J., Vincelette, S., "Simulating Nature: From Theory to Practice," course presented at *SIGGRAPH 99,* August 1999.
19. Ebert, D. (co-chair), Hart, J. (co-chair), Bloomenthal, J., Fleischer, K., Heckbert, P., Pederson, H., Prusinkiewicz, P., "New Frontiers in Modeling and Texturing," course presented at *SIGGRAPH 98,* July 1998.
20. Ebert, D. (co-chair), Hart, J. (co-chair), Bloomenthal, J., Fleischer, K., Heckbert, P., Pederson, H., Prusinkiewicz, P., "New

Frontiers in Modeling and Texturing," course presented at *SIGGRAPH 97,* August 1997.

21. Ebert, D. (chair), Hart, J., Musgrave, F., Perlin, K., Sims, K., and Wyvill, B. "Procedural Modeling and Animation Techniques," course presented at *SIGGRAPH 96,* August 1996.
22. Ebert, D. (chair), Hart, J., Musgrave, F., Perlin, K., Sims, K., and Wyvill, B. "Procedural Modeling, Texturing, and Animation Techniques," course presented at *SIGGRAPH 95,* August 1995.
23. Ebert, D. (chair), Musgrave, F., Peachey, D., Perlin, K., Worley, S., and Wyvill, B. "Procedural Modeling, Texturing, and Rendering Techniques," course presented at *SIGGRAPH 94,* July 1994.
24. Ebert, D., Fournier, A., Gardner, G., Musgrave, K., Prusinkiewicz, P., "Modeling Natural Phenomena," course presented at *SIGGRAPH 94,* July 1994.
25. Ebert, D. (chair), Musgrave, F., Peachey, D., and Perlin, K., " Procedural Modeling and Rendering Techniques," course presented at *SIGGRAPH 93,* July 1993.
26. Ebert, D. (chair), Musgrave, F., Peachey, D., and Perlin, K., " Procedural Modeling and Rendering Techniques," course presented at *SIGGRAPH 92*, July 1992.

Ph.D. DISSERTATIONS SUPERVISED

1. Afzal, S., "Text-Based Spatial And Temporal Visualizations And Their Applications In Visual Analytics", December, 2017.
2. Chae, J., "Visual Analytics Of Location-Based Social Networks For Decision Support," December 2016.
3. Malik, A., "Assisted Decision Making Using Multivariate Spatiotemporal Data Through The Application Of Visual Analytics," August 2014.
4. Ko, S., "Aided Decision-Making Through Visual Analytics Systems for Large Multivariate, Spatiotemporal, Hierarchical, and Network Data," August 2014.
5. Woo, I., "Information-Assisted Data Exploration, Analysis And Visualization Techniques," December 2012.
6. Kim, S., "Context-Adaptive Illustrative Visualization And Analytics Techniques," May 2012.
7. Pattath, A., "Interactive Visualization for Mobile Visual Analytics", December 2010.
8. Maciejewski, R., "Exploring Multivariate Data through the Application of Visual Analytics," December 2009.
9. Song, Y., "Multi-Variate Scientific Data Visualization and Analytics," April 2009.
10. Jang, Y., "Interactive Procedural Visualization of Terabyte Datasets," March 2007.
11. Svakhine, N., "Interactive Illustrative Medical Visualization," February 2007.
12. Lu, A., "Volume Illustration," July 2005.
13. Riley, K., "Efficient Graphics Hardware-Accelerated, Atmospheric Rendering and Multi-field Weather Visualization," May 2005.
14. Grasso, M. "Speech Input in Multimodal Environments: Effects of Perceptual Structure on Speed, Accuracy, and Acceptance," co-advised with Tim Finin, May 1997.

MASTER'S THESES SUPERVISED

1. Oliveros-Torres, S., "Interactive Multivariate Data Exploration For Risk-Based Decision Making," May 2013.
2. Livengood, P., "Comparative Visual Analytic Techniques for Mass Spectrometry Data," December 2009.
3. Ostmo, K., "Automatic Portion Estimation and Visual Refinement in Mobile Dietary Assessment," April 2009.
4. Qiao, Wei, "VolQD: Graphics Hardware Accelerated Interactive Visual Analytics of Multi-Million Atom Nanoelectronics Simulations," December 2005.
5. Schpok, J., "Hardware-Accelerated Gas Rendering with Simulation Features as Interactive Modeling Primitives," May 2005.
6. Maciejewski, R., "Exploring the Value of Adding Haptic and Stereoscopic Rendering to Volume Rendering," August 2004.
7. Smith, B., "Realistic Simulation of Curling and Breaking Waves," February 2002.
8. Morris, C., "Non-Photorealistic Direct Volume Rendering Using Stippling Techniques," January 2001.
9. Bedwell, E., "Artificial Evolution of Implicit Surfaces," May 1999.

MASTER'S PROJECTS SUPERVISED

1. Kukla, J., "Visualization Using Superquadric Shapes," August 2000.
2. Rhudy, R. "Extracting Implicit Volumes from Scalar Voxel Arrays," May 2000.
3. Ju, Y., "An Information Visualization Agent," May 1999.
4. Ruchigartha, "Simulation of Cloud Formation Using MAYA-based Particles," May 1999.
5. Panda, P., "Visualization of Continuous Data Using Shape in Glyph-based Visualization," June 1998.
6. Chen, P., "Simulation of Cloud Formation," June 1998.
7. Hu, T., "Implementation of Data Viewer and Dividing Cubes Algorithm," June 1998.
8. Yuan, H., "Experience with Simulation of Primitives in Cloud Formation," June 1998.
9. Liao, N., "Accuracy of Volume Visualization of Medical Data," December 1996.
10. Zhang, Z., "A New Visualization Algorithm for Curvilinear Grid Volumes," December 1996.
11. Lin, T., "Animation of L-System based 3-D Plant Growing in Java," December 1996.
12. Helfrick, D., "A New Technique for Resampling Curvilinear Volumes," December 1995.
13. Buttrum, J., "Rendering of Curvilinear Volumes," May 1995.
14. Bawa, R., "Rendering of Surface Based Objects Using Shadow Table Techniques," May 1994.

REFEREED FILMS, IMAGES, ARTWORK

1. Schpok, J., Ebert, D., volume cloud modeling and rendering software used for computer generated feature film, *Valiant,* August 19, 2005 U.S. release, Disney Pictures.
2. Tan, H., Ebert, D., et al., "The sensingChair," *SIGGRAPH 2001 Emerging Technologies Program,* August 2001.
3. Ebert, D., Images and several quotes in "Powerful Procedures" article by Diana Mahoney in August 1999 issue of *Computer Graphics World.*
4. Ebert, D. Kukla, J., Bedwell, E., Wrights, S., "A Cloud is Born," *ACM SIGGRAPH 97 Electronic Theater* (accepted 58 out of 586) and *ACM SIGGRAPH Video Review,* 1997. (Computer animation). Also shown on French Public Television, Japanese Public Television, MGM Grand, Brazilian Television, NicoGraph. Featured *in Animation World Magazine.*
5. Ebert, D. 3 images and several quotes used in "Volume Visualization" article by Diana Mahoney in July 1997 issue of *CGW* (Computer Graphics World).
6. Ebert, D., 3 images and several quotes used in "Procedural Animation" article by Diana Mahoney in May 1997 issue of *CGW* (Computer Graphics World).
7. Ebert, D., "Volumetric Procedural Cloud," (invited) *SIGGRAPH 97 Educators Slide Set.*
8. Ebert, D., Shaw, C., Zwa, A., and Roberts, D. "Two-handed Interactive Stereoscopic Visualization," (videotape) *IEEE Visualization '96 Conference Videotape,* October 1996.
9. Ebert, D., "Volumetric Implicit Cumulus Cloud," *SIGGRAPH 96 Technical Slide Set,* slide #10, August 1996.
10. Starr, C., Strong, G., Ebert, D., Eringis, M., and Goldfarb, J., "GLOBE Project Animation," 32 seconds, April 1995. Aired on CNN and Fox.
11. Ebert, D., "Procedural Animation Techniques," *SIGGRAPH 95 Courses CDROM,* August 1995.
12. Ebert, D. and Yagel, R. "Volume Rendering Methods for Computational Fluid Dynamics Visualization," *IEEE Visualization '94 Video Proceedings*, October 1994.
13. Ebert, D., "Procedural Animation," *SIGGRAPH 94 Course Videotape*, July 1994.
14. Ebert, D., "ArtGallery I," (computer generated image) in *Introduction to Computers and Information Systems* by Syzmanski & Syzmanski, 2nd edition, Macmillan Publishing Company, 1994.
15. Ebert, D. "Art Gallery I," New England Fine Art Institute, "State of the Art '93" Exhibition, May 28-31, 1993.
16. Ebert, D. and Ebert, J. "Getting Into Art I," New England Fine Art Institute, "State of the Art '93" Exhibition, May 1993.
17. Ebert, D., "Windy Tea," *SIGGRAPH '92 Technical Slide Set*, July 1992.
18. Ebert, D., "Hot Tea," *SIGGRAPH '91 Technical Slide Set*, slide #72, *SIGGRAPH '91 Appointment Calendar*, August 1991.
19. Ebert, D., "ArtGallery I," in slide set accompanying *Integrated Computer Graphics* by Bruce Mielke, West Publishing Company, 1991.
20. Ebert, D., Cover Image, *IEEE Computer Graphics and Applications,* Vol. 10, No. 5, September 1990.
21. Ebert, D., "Steam and Shadows," *SIGGRAPH '90 Technical Slide Set*, slide #10, August 1990.
22. Ebert, D., Ebert, J., and Boyer, K., "Getting Into Art," (animation), CIS Department, The Ohio State University, May 1990. Shown at SIGGRAPH '90 Animation Screening Room, Eurographics 90 (Switzerland), Imagina 91 (Monte Carlo).
23. Ebert, D., "ArtGallery I," (computer generated image) in *Introduction to Computers and Information Systems* by Syzmanski, Macmillan Publishing Company, 1990.
24. Ebert, D., Boyer, K., and Roble, D., "Once a Pawn a Foggy Knight...," (computer generated animation). In *SIGGRAPH Video Review* 54,November 1989. Shown at SIGGRAPH '89 Animation Screening Room, Eurographics 89 (Germany), Online Film Festival '89 (England), NCGA 90, Computer Animation 90 (Switzerland), Graphics Interface 90 (Canada).
25. Ebert, D., "ArtGallery I," *SIGGRAPH '89 Technical Slide Set*, slide #54, August 1989.
26. Ebert, D., "Once a Pawn a Foggy Knight," *SIGGRAPH '89 Technical Slide Set,* slide #60, August 1989.

CONFERENCE ACTIVITIES

1. Program Committee, *IEEE VAST,* 2018.
2. Program Committee, *Eurovis 2018.*
3. Program Committee, *IEEE SciVis,* 2017.
4. Program Committee, *Eurovis 2017.*
5. Program Committee, *IEEE VAST,* 2017.
6. Papers Committee, Eurographics 2017.
7. Minitrack co-chair, HICSS, 2012-2018.
8. Papers Committee, *ACM/IEEE Supercomputing 2015,* November 2015.
9. Steering Committee, *Eurovis,* 2014-2017.
10. Program Committee, *Eurovis 2015,* June 2015.
11. Papers Committee, *Eurographics 2015,* May 2015.
12. Papers Co-Chair, *IEEE VAST 2014,* November 2014.
13. Program Committee and workshop Co-Chair, *Eurovis 2014,* June 2014.
14. Papers Committee, *Eurographics 2014,* May 2014.
15. Program Committee, *IEEE Visual Analytics Science and Technology (VAST) Conference 2013,* 2013.
16. Chair, *IEEE VAST* Steering Committee, 2011-2014.
17. Program Committee, *Eurovis 2013,* June 2013.
18. Papers Committee, *Eurographics 2013,* May 2013.

19. Program Committee, *Eurovis 2013,* June 2013.
20. Papers Committee, *Eurographics 2013,* May 2013.
21. Program Committee, *IEEE SciVis Conference, IEEE Visweek*, October2012.
22. Program Committee, *IEEE Visual Analytics Science and Technology (VAST) Symposium 2012,* October 2012.
23. Program Committee, *Eurographics NPAR* 2012 *Conference,* June 2012.
24. Program Committee, *Eurographics Computational Aesthetics Conference*, June 2012.
25. Program Committee, *Eurovis 2012,* June 2012.
26. Papers Committee, *Eurographics 2012,* May 2012.
27. Program Committee, *IEEE Visual Analytics Science and Technology (VAST) Symposium 2011,* October 2011.
28. Program Committee, *IEEE Visualization 2011, October 2011.*
29. Program Committee, *Eurographics Computational Aesthetics Conference*, June 2012.
30. Program Committee, *Eurovis 2011,* June 2011.
31. Program Committee, *IEEE Visual Analytics Science and Technology (VAST) Symposium 2010,* October 2010.
32. Program Committee, *IEEE Visualization 2010, October 2010.*
33. Program Committee, *Eurovis 2010,* June 2010.
34. Paper s Co-Chair, *IEEE Visual Analytics Science and Technology (VAST) Symposium 2009,* October 2009.
35. Program Committee, *IEEE Visualization 2009, October 2009.*
36. Program Committee, *Eurovis 2009,* June 2009.
37. Area Co-Chair, *Eurographics 2009,* April 2009.
38. Conference Co-Chair, *IEEE Visual Analytics Science and Technology (VAST) Symposium 2008,* October 2008.
39. Papers Committee, *ACM SIGGRAPH 2008,* August 2008.
40. Program Committee, *Eurovis 2008,* May 2008.
41. Program Committee, *International Conference on Mobile and Ubiquitous Multimedia (MUM 2007),* 2007.
42. Program Co-chair, Eurographics Workshop on Natural Phenomena, September 2007.
43. Co-organizer, NSF Workshop "Enabling Science Discoveries Through Visual Exploration," September 2007.
44. Program Committee and Papers Committee, *IEEE Visualization 2007.*
45. Program Committee and Area Chair, *IEEE Visual Analytics Science and Technology Workshop (VAST 2007),* 2007.
46. Program Committee, *Eurographics NPAR* conference, 2007.
47. Program Committee, *Eurovis 2007,* May 2007.
48. Program Committee and Papers Committee, *IEEE Visualization 2006.*
49. Program Committee, *IEEE Visual Analytics Science and Technology Workshop (VAST 2006),* 2006.
50. Program Committee, *International Conference on Mobile and Ubiquitous Multimedia (MUM 2006),* 2006.
51. Papers Committee, ACM *SIGGRAPH 2006,* July 2006.
52. Program Committee, *Volume Graphics 2006,* June 2006.
53. Program Committee, *Eurovis 2006,* May 2006.
54. Program Committee, *Interactive 3D Graphics (I3D) 2006,* 2006.
55. Program Committee and Papers Committee, *IEEE Visualization 2005.*
56. Papers Committee, *ACM SIGGRAPH 2005,* August 2005.
57. Computer Animation Festival Committee and Jury, *ACM SIGGRAPH 2005,* August 2005.
58. Program Committee, *Eurovis 2005,* May 2005.
59. Program Committee, *Computer Graphics International,* June 2005.
60. Program Committee, *Volume Graphics 2005,* June 2005.
61. Program Committee, *Interactive 3D Graphics (I3D) 2005,* 2005.
62. Program Committee, *Point Based Graphics 2005,* 2005.
63. Program Committee, *IEEE Volume Visualization Symposium,* October 2004.
64. Program Committee, *Computer Graphics and Imaging,* August 2004.
65. Program Committee, *Computer Animation and Social Agents,* July 2004.
66. Program Committee, *Symposium on Point Based Graphics,* June 2004.
67. Program Committee, *VisSym 2004: Joint Eurographics - IEEE TCCG Symposium on Visualization*, May 2004.
68. Chair, ACM SIGGRAPH Campfire (workshop) on *Visualization Meets Visual Effects,* September 2003.
69. Program Committee, *Pacific Graphics 2003,* October 2003.
70. Program Committee, *Computer Animation and Social Agents,* July 2003.
71. Program Committee, *VisSym 2003: Joint Eurographics - IEEE TCCG Symposium on Visualization*, May 2003.
72. Program Committee, *Web3D 2003 Symposium,* 8th International Conference on 3D Web Technology, 2003.
73. Program Committee, *1st International Conference on Mobile and Ubiquitous Multimedia,* 2002.
74. Program Committee, *MVMP 2002,* 4th MVMP International Conference on Mobile Multimedia, 2002.
75. Program Committee, *Vision, Modeling, and Visualization,* 2002.
76. Program Committee and Papers Committee, *IEEE Visualization 2002.*
77. Conference Co-chair, *VisSym 2002: Joint Eurographics - IEEE TCCG Symposium on Visualization,* May 2002.
78. Panels Committee, ACM *SIGGRAPH 2002,* July 2002.
79. Program Committee, *Web3D 2002 Symposium,* 7th International Conference on 3D Web Technology, 2002.
80. Program Committee and Papers Committee, *IEEE Visualization 2001.*

81. Conference Co-chair, *VisSym 2001: Joint EUROGRAPHICS - IEEE TCCG Symposium on Visualization,* May 2001.
82. Program Committee, *Volume Graphics Workshop VG'01,* June 2001.
83. Co-organizer, *Workshop on New Paradigms in Information Visualization and Manipulation,* November 2000.
84. Program Co-Chair, *IEEE Visualization 2000,* October 2000.
85. Emerging Technologies Committee, ACM *SIGGRAPH 2000,* July 2000.
86. Co-organizer, *Workshop on New Paradigms in Information Visualization and Manipulation,* November 1999
87. Papers Co-chair, *IEEE Visualization '99,* October 1999
88. Emerging Technologies Committee, ACM *SIGGRAPH 99,* August 1999
89. Program Committee, *Computer Graphics International,* June 1999
90. Program Committee, *Computer Animation 98, 99, 2000, 2001, 2002*
91. ACM SIGGRAPH Sketches Program Review Task Force, 1998
92. Co-organizer, *Workshop on New Paradigms in Information Visualization and Manipulation,* November 1998
93. Papers Co-chair, *IEEE Visualization '98,* October 1998
94. Sketches Committee, ACM *SIGGRAPH 98,* August 1998
95. Sketches Chair, ACM *SIGGRAPH 97,* August 1997
96. Co-organizer, *Workshop on New Paradigms in Information Visualization and Manipulation,* November 1997
97. Hot Topics Co-chair, *IEEE Visualization '97,* October 1997
98. Co-organizer, *Workshop on New Paradigms in Information Visualization and Manipulation,* November 1996
99. Hot Topics Chair, *IEEE Visualization '96,* October 1996
100. Conference Committee, *IEEE Volume Visualization Symposium,* October 1996
101. Courses Committee, ACM *SIGGRAPH 96,* August 1996
102. Co-organizer, *Workshop on New Paradigms in Information Visualization and Manipulation,* December 1995
103. Demonstrations Co-Chair, *IEEE Visualization '95,* November 1995
104. Conference Committee, *IEEE Volume Visualization Symposium,* October 1994

EDITORIAL BOARDS / SOCIETY SERVICE
1. IEEE Computer Society Board of Governors, member, 2017-2019.
2. IEEE Computer Society Publications Board, member 2017-2018.
3. IEEE Products and Services Committee, member 2017-2018.
4. IEEE Computer Society First Vice President, 2016.
5. IEEE Computer Society Vice President Publications, 2016.
6. IEEE Publications Services and Products Board, member, 2016
7. IEEE TAB Periodicals Committee, member 2016.
8. Computer Research Association, Board of Directors, member, 2015-2018.
9. Computer Research Association, Government Affairs committee, member 2015-2017.
10. IEEE Computer Society Second Vice President, 2015.
11. IEEE Computer Society Treasurer, 2015.
12. IEEE Computer Society Executive Committee, member, 2013-16.
13. IEEE Computer Society Executive Committee, Secretary, 2013-14.
14. IEEE Computer Society Publications Board, Integrity Chair, 2014-2015.
15. IEEE Computer Society Board of Governors, member, 2009-2016.
16. IEEE Technical Committee on Visualization and Graphics, Executive Committee member 1999-2016.
17. *IEEE Computer Graphics and Applications, Associate Editor,* 2007-2008.
18. *IEEE Transaction on Haptics,* Management Committee Member 2007-2013.
19. IEEE Computer Society Publications Board, Director at Large, 2007.
20. IEEE Publication Services and Products Board Ad Hoc Working Group on Minimum Editorial Quality Standards, 2006.
21. National Visualization and Analytics Center Research Agenda Panel, panelist 2004-2005.
22. NASA Technology Subcommittee of the Earth Science and Applications Advisory Committee, member 2003-2005.
23. ACM SIGGRAPH Conference Advisory Group, member, 2001-2002.
24. ACM SIGGRAPH Executive Committee, Director at Large, 2000-2002.
25. *IEEE Transactions on Visualization and Computer Graphics,* Editor in Chief, 2003-2007.
26. *IEEE Transactions on Visualization and Computer Graphics,* Associate Editor in Chief, 2001-002.
27. *IEEE Transactions on Visualization and Computer Graphics,* Associate Editor, 1999 – 2003.

AWARDS
1. **IEEE Computer Society vgTC Technical Achievement Award** (for seminal work in visual analytics), November 2016.
2. **IEEE VAST Challenge Honorable Mention MC2** (for "Visual analytics for detecting communication patterns," Hartner et. al) October 2015.
3. **United States Coast Guard Certificate of Merit,** VACCINE Social Media Analytics and Reporting Toolkit Project Team, August 2015.
4. **IEEE VAST Challenge Award,** Sponsor's Award for Novel Visualization, IEEE VAST Challenge, 2014 (for "Dodeca-Rings Map," Gua, C., Xu, S., Yu, J., Zhang, H., Wang, Q., Xia, J., Zhang, J., Chen, Y., Qian, C., Wang, C., Ebert, D.) November 2014.

5. Entrepreneur Leadership Academy Fellow, Purdue University 2014—2015.
6. **U. S. Coast Guard Meritorious Team Commendation**, U.S. Coast Guard, Port Resilience for Operational Tactical Enforcement to Combat Terrorism (PROTECT) Team, May 2013.
7. **Impact Award,** DHS S&T, 2012.
8. **Award of Excellence,** DHS S&T, 2012.
9. **Excellence Award,** U.S. Coast Guard, Atlantic Area Command Commander's Excellence Award, 2012.
10. **University Faculty Scholar,** Purdue University, 2006-2011.
11. **Nvidia Faculty Fellowship,** 2006-2008.
12. **Best Paper Finalist,** *IEEE Symposium on Visual Analytics Science and Technology (VAST),* October 2008, for "Understanding Syndromic Hotspots - A Visual Analytics Approach," (Maciejewski, R., Rudolph, S., Hafen, R., Abusalah, A., Yakout, M., Ouzzani, M., Cleveland, W., Grannis, S., Wade, M., Ebert, D.).
13. **Best Application Paper Finalist,** *IEEE Visualization 2006,* October 2006, for "Hub-Based Simulation and Graphics Hardware Accelerated Visualization for Nanotechnology Applications," (Qiao, W., McLennan, M., Kennell, R., Ebert, D., Klimeck, G.).
14. **Best Application Paper Finalist,** *IEEE Visualization 2005,* October 2005, for "VolQD: Direct Volume Rendering of Multi-million Atom Quantum Dot Simulations," (Qiao, W., Ebert, D.S., Entezari, A., Korkusinski, M., Klimeck, G.).
15. **Best Paper Finalist,** *IEEE Visualization 2004,* October 2004, for "Projecting Tetrahedra without Rendering Artifacts," (Kraus, M., Qiao, W., and Ebert, D. S.).
16. **Best Panel Award,** *IEEE Visualization 2003 Conference,* October 2003, for "Do I Really See a Bone?" (Machiraju, R., Stredney, D., Ebert, D., Crawfis, R., Johnson, C., Yoo, T.).
17. **Best Paper Award,** *IEEE Visualization 2002 Conference,* November 2002, for "Non-Photorealistic Volume Rendering Using Stippling Techniques," (Lu, A., Morris, C., Ebert, D., Rheingans, P., Hansen, C.).
18. **Best Paper Finalist,** *IEEE Visualization 2002 Conference,* November 2002, for "Interactive Translucent Volume Rendering and Procedural Modeling," (Kniss, J., Premoze, S., Hansen, C., Ebert, D.).
19. **Best Paper Award,** *IEEE Visualization 2000 Conference*, October 2000, for "Volume Illustration: Non-Photorealistic Rendering of Volume Models," (Ebert and Rheingans).
20. **Honorable Mention**, S.P.A.C.E. 90 (SIGGRAPH '90), Dallas, Texas for "Getting Into Art"
21. **Honorable Mention** in Student/Faculty Category, NCGA 90 Film Competition, Anaheim, California for "Once a Pawn a Foggy Knight..."
22. **First Place** in Student/Faculty Category**,** Eurographics 89 Animation Competition, Hamburg, Germany for "Once a Pawn a Foggy Knight..."
23. **Honorable Mention** in Student/Faculty Category**,** Online Film Festival 1989, London, England for "Once a Pawn a Foggy Knight..."
24. **Second Place**, S.P.A.C.E. 89 (SIGGRAPH '89), Boston, MA, for "Once a Pawn a Foggy Knight..."
25. **University Fellowship**, The Ohio State University, 1986-1987

REVIEWING
Journals
ACM Transactions on Graphics, IEEE Computer Graphics and Applications, The Visual Computer, IEEE Transactions on Visualization and Computer Graphics, Journal of Artificial Intelligence in Medicine, Computer Graphics Forum.
Conferences
ACM SIGGRAPH 1993-2006, Volume Visualization '93 - '95, IEEE Visualization '95 - 2008, Graphics Interface '93 - '95, 2003-5, IEEE Information Visualization '96 - '98, Computer Animation '98 - 2005, Implicit Surfaces '98, Computer Graphics International '99, Eurographics 1999, 2002-2008, Volume Graphics 2001-2008, Interactive 3D Graphics 2000-2008, Pacific Graphics 2003.
Grants / Proposals
NSF CISE Grant Panel Reviews, NSF ITR, NSF SBIR Grant Panel Review, NASA EOSDIS Proposals, NIST Technology Development Proposals, ASEE NRL Post-doctoral Fellowship program, AustrianAcademy of Science.

PROFESSIONAL MEMBERSHIPS
ACM - SIGGRAPH, IEEE - Computer Society, IEEE Fellow
Honorary Societies: Tau Beta Pi, Phi Kappa Phi, Alpha Lambda Delta, Phi Eta Sigma