

Department of Computer Science
College of Engineering
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Research Overview

Research in human-centered data science, with a focus on visual computing, an area of computing that handles images, 2D/3D models and the interaction between humans and data that can be represented visually. Emphasis on automated techniques, computational representations, and theoretical principles for scientific modeling and data visualization.

Education

Ph.D., Computer Science, Brown University, 2007.

Data-Driven Predictive Modeling of Diarthrodial Joints

Research in computer graphics and visualization for biological applications. Created novel computational modeling, visualization, and analysis tools which are needed to model anatomical joints and their variation with disease progression.

Sc.M., Computer Science, Brown University, 2001.

Estimating Ligament Lengths from Bone Kinematics and Surfaces

M.S., Computer Science & Electrical Engineering, Politehnica University, Romania, 1998.

KQML – Communication among Intelligent Agent Systems

B.S., Computer Science & Electrical Engineering, Politehnica University, Romania, 1997.

Time-delay Neural Network System for Speech Recognition

Experience and Appointments

Current:

Professor, Department of Computer Science, University of Illinois Chicago

Aug 2022 – current.

University of Illinois Scholar 2023-2026.

Computational research into the theory and practice of visual computing, with practical applications in science and engineering. Multiple outstanding research honors, including a Test of Time Award and a University Scholar award across the three campuses (Chicago, Springfield, Urbana). Faculty Fellow of the Year in the Honors College. Specific research projects include: visual data science, computational oncology, biological image analysis, theoretical foundations of data visualization, explainable machine learning, HPC ensemble visual analysis, biomedical visualization.

Project management (multi-site), fund raising, grant management (multi-\$M), interdisciplinary collaboration, public communication, results dissemination, software engineering, software deployment, teaching, advising, mentoring, committee steering and chairing, graduate admissions directing, reviewing.

Director, Institute for Health Data Science Research, University of Illinois Chicago

Feb 2024 – current

Founder and Director (with Andrew Boyd) of an interdisciplinary institute that combines healthcare and data science research across the two UIC campuses (medical and non-medical). Research teams spanning multiple colleges pursue innovative and significant projects that ensure everyone, regardless of background or circumstance, benefits from the transformative potential impact of AI, data science, and computing on medicine. Return-to-investment after the first 2 years of operation is 5:1 through financial external awards made to early stage investigators mentored by the institute.

Director of Graduate Admissions and Co-Director of Graduate Studies, Department of Computer Science, UIC

Aug 2022 – current

Inter-institutional graduate admissions data collection and comparative analysis, fee waiver petition and negotiations, cooperation with the Office for Admissions, the Office for Academic Enrollment, and the College Associate Deans, admission decision management, outreach. Alternate for Director of Graduate Studies in cooperation with the Graduate College, degree-related exam committee formation, and dissertation form approval. Measures have resulted in significant increases in the number of doctoral applications received (100% increase, i.e., doubled) and doctoral admission yield (10% increase).

UIC Cancer Center, member.

2019 – current

Discovery Partners Institute, member.

2019 – 2026

Past:

Associate Professor, Department of Computer Science, University of Illinois at Chicago, Jan 2015 – Aug 2022.

Computational research into robust, scalable and effective computer science and visualization tools to solve problems in science and engineering. Multiple outstanding research honors. Multiple NSF and NIH RO1 awards. Specific research projects include: computational oncology, medical imaging, biology visualization, theoretical foundations in visualization, machine learning for the visualization of large scale tensor-valued fields, and usability of large, immersive displays to biomed and to collaborative applications. Another award, at the College level, for teaching excellence.

Project management (multi-site), fund raising, grant management (multi-\$M), interdisciplinary collaboration, public communication, results dissemination, software engineering, software deployment, teaching, advising, mentoring, committee steering and chairing, reviewing.

Visiting Scientist, Technical University of Vienna, Austria

Feb 2022 – May 2022

Courtesy appointment during sabbatical leave from UIC (Spring 2022)

Visiting Scholar, New York University, Tandon School of Engineering, NY

Aug 2021 – Dec 2021

Courtesy appointment during sabbatical leave from UIC (Fall 2021)

Visiting Faculty, Robotics Institute, Carnegie Mellon University, May 2014 – Dec 2014.

Computational modeling research to help solve problems in robotics and computer animation.

Joint Assistant Professor, Department of Computational and Systems Biology, University of Pittsburgh School of Medicine, Secondary Appointment, 2009 – 2014.

Visualization, modeling and simulation for rule-based biochemical systems.

Adjunct Assistant Professor of Computer Science, Robotics Institute, Carnegie Mellon University, 2007 – 2014.

Computational modeling research to help solve problems in robotics and computer animation.

Assistant Professor, Department of Computer Science, University of Pittsburgh, July 2007 – Sept 2014.

Founder and Director of the Interdisciplinary Visualization Lab. Twice Pitt Faculty Honoree for most outstanding research accomplishments. NSF CAREER Award. Three Outstanding Paper awards. One US patent, preceded by technology transfer to industry. Excellent record in rising federal funding for research. One NSF Graduate Fellowship to my student. Six Teaching Awards, five based on student feedback and one at the Provost level. Founder and advisor to the Pitt Women in CS student organization; outreach activities. Departmental tenure recommendation, thank you. Moved on.

Specific research projects include visualization of large scale vector-valued and tensor-valued fields, visual integration of spatial and non-spatial information, visualization and cross-registration of large-scale, multivariate data, intelligent algorithms for automated tracking of orthopaedic data, geometric tools for tissue modeling and simulation.

Project management, lab management and directing, fund raising, grant management, interdisciplinary collaboration, public communication, results dissemination, software engineering, software deployment, teaching, advising and mentoring.

Research Assistant, Brown University, 2000 – 2007.

Interdisciplinary work in articulation modeling and visualization (CS, Bioengineering, Orthopedics, Evolutionary Biology).

CS Faculty-Graduate Liaison, Brown University, 2003 – 2005.

Lobbied and raised funding for grad student interests.

Instructor, Brown University, 2004.

“Interactive Computer Graphics”, full graduate/undergraduate class responsibility together with fellow graduate students M. McGuire and T. Moscovich

Teaching Assistant, Brown University, 2003.

“Interactive Computer Graphics”. Led seminars and help-sessions, guest-lectured, mentored final projects.

Research intern, Philips Research, Netherlands, Summer 1998.

Designed and implemented a geometry compression engine for video-games.

Lab instructor, Politehnica University, Romania, 1997 – 1999.

Introductory Programming, Data Structures and Algorithms, Scientific Computing, Parallel Processing. Taught seminars and labs, designed and graded assignments and independent-study projects.

Intern, Electromagnetica Ltd, Romania, Summers 1992, 1994.

Programmed parts of a VLSI-circuit design project.

Honors and Awards

2026 **Distinguished Contributor designation, IEEE Computer Society**

Best Paper Award, Information Systems, ACM Symposium on Applied Computing 2026

2025 **IEEE VIS BioMedVis Challenge Award of Merit**

- 2024 **NIH [CIDH Chartered Study Section](#) member appointment 2024-2028**
Faculty Fellow of the Year, Honors College UIC
- 2023 **University Scholar, University of Illinois System** (Chicago, Springfield, Urbana-Champaign)
Computing Research Association Leadership Academy selection
University of Illinois Faculty Awardee (for University Scholar award)
- 2022 **UIC College of Engineering Teaching Award**¹
University of Illinois Faculty Awardee (for Test of Time award)
- 2021 **Test of Time Award, Ten-years most impactful biovis paper, ISMB 2021**²
NIH Chartered Reviewer Group Nomination
Faculty Fellow of the Year Nomination, UIC Honors College
- 2017 **National Institutes of Health R01 Award**, Early Stage Investigator
IEEE Visual Analytics Science and Technology (VAST) Challenge 2017 Honorable Mention (MC2), IEEE VIS 2017
IEEE Visual Analytics Science and Technology (VAST) Challenge 2017 Honorable Mention (MC3), IEEE VIS 2017
UIC College of Engineering Young Researcher of the Year award
IEEE Senior Member
- 2016 **IEEE VGTC Visualization Pioneers Group (VPG) Data Visualization Contest Honorable Mention**, IEEE VIS 2016
- 2013 **IEEE Biology Visualization Data Contest Visualization Award**, IEEE BioVis 2013
- 2013 Pitt CS Teaching Award Nomination, Graduate seminar level
- 2012 **IEEE Large Data Analysis and Visualization Honorable Mention** (Best-Paper Runner-Up Award), IEEE LDAV 2012

¹ “The recipients of the teaching award are traditionally recognized for their excellence in teaching and their contributions to the curriculum. In addition, some of the awardees have rapidly adopted new technologies, modalities, and innovative thinking to achieve learning objectives as UIC transitioned to remote learning [during the COVID-19 pandemic].” (UIC Faculty Affairs notification).

² Test of Time Awards are prestigious awards in Computer Science, made to the most impactful research paper published in N years at a specific conference; in this case, 10 years at the flagship conference in computational biology.

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- 2012 Desire2Learn Edge Challenge shortlist (\$25K teaching-industry competition)
 - 2012 **Computing Research Association-W Advanced Career Mentoring Workshop Travel Award**
 - 2012 Pitt CS Teaching Award, Graduate course level
 - 2011 **IEEE Biology Visualization Best Paper Award**, IEEE BioVis 2011; Pitt faculty honoree
 - 2011 Pitt CS Teaching Award, Upper-level undergraduate course
 - 2010 Pitt CS Teaching Award, Upper-level undergraduate course, top 4% in School of A&S
 - 2010 **National Science Foundation CAREER Award**; Pitt faculty honoree
 - 2009 Pitt Speaking in the Disciplines Fellowship
 - 2009 Pitt CS Teaching Award, Graduate course, top 4% in School of A&S
 - 2009 **Innovation in Education Award**, Pitt Provost's Advisory Council on Instructional Excellence
 - 2008 Pitt CS Teaching Award³, Graduate seminar
 - 2004 **ACM SIGGRAPH Student Research Competition semifinalist** – twice, first nomination with students Peter Sibley and Phil Montgomery; and second with students Ethan Bromberg and Arni Jonsson. Brown University Travel Grant and **ACM Travel Awards**.
 - 2001 **Pixar Fellowship**
 - 2000 **Microsoft Fellowship**
 - 1999 **Brown University Fellowship**
 - 1997,1996 **Romanian National 'Scholar Merit' Fellowship**
 - 1996 **Best Paper Award** at the Politehnica Bioengineering'96 Scientific Session

Journal Publications⁴

³ Pitt CS Teaching Awards reward most-effective teaching at specific levels during the previous academic year; measured using the University-conducted student-evaluations of courses and instructors.

⁴ In most cases, the last author listed denotes the project leader. In rare cases where the project leader is not listed last, they are indicated with an asterisk – *. [JNN](#) is linked to the public, online pdf. With some journals' shift to online publishing, page numbers have become less common. Student/adviser names are underlined, going back to 2015.

J70. S. Zhao, M.N. Nipu, H. Fathollahian, H. Chen, A. Salahudeen, O. Karginova, G.E. Marai, Loom: Multi-Region Analysis of Spatial Transcriptomics with Local Neighborhoods and Global Trajectories, IEEE VIS'26, IEEE Trans. on Vis. and Comp. Graphics, Jan 2027

[J69](#). G. Carevic, R. Gaur, W. Floyd, C.Dede, L. McCullum, C. Marquez, S. A. Faiz, M. M. Badawy, A. Jethanandani, G. E. Marai, A.S.R. Mohamed, J. Mathew, G. Canahuate, N. Mohamed, J. Phan, S. Haidacher, S. Mirbahaeddin, M. Spiotto, A. Lee, K. Hutcheson, A. Moreno, C. D. Fuller, MD Anderson Head and Neck Cancer Symptom Working Group
Sleep-related symptoms are associated with survival in oropharyngeal cancer radiotherapy survivors: Temporal characterization of patient-reported outcomes in a large-scale prospective longitudinal cohort, Radiation Oncology, Sep 2026

J68. Z. Brumm, E. Anyimadu, M. Kohli, J. Silver, B. Manduchi, K. Hutcheson, A. Gulati, G.E. Marai, T. Crosby, C. Rosen, V. Young, G. Canahuate, Y. Ma,
MDADI as a Screening Tool for VFSS-Graded Swallowing Impairment in Head and Neck Cancer Patients, The Laryngoscope 2026

J67. H. Fathollahian, S. Zhao, N. Nipu, M. Salahshour, L. Duan, W. Tang, S. Boorboor, G. E. Marai. ConGAT: Context-Aware Graph Attention Visual Analysis for 3D Region of Interest Discovery in Multiplexed Microscopy Images.
The 16th EuroGraphics Symposium on Visual Computing for Biology and Medicine (VCBM) 2026, Ljubljana, Slovenia, Computers & Graphics 2026

J66. N. Nipu, S. Zhao, B. Maharathi, J.A. Loeb, G.E. Marai,
“Neurosurgery Network Pattern Analysis with 2nd Generation Ensembles”, Computer Graphics Forum, March 2026

J65. C. Floricel, Y. Wang, A. Wentzel, C. D. Fuller, G. E. Marai, M. E. Papka, G. Canahuate
“L-VISP: LSTM Visualization for Interpretable Symptom Prediction in Patient Cohorts”, Computer Graphics Forum, March 2026

J64. A.A. Salahudeen*, A.J. Zakkar, N. Perwaiz, V. Harikrishnan, W. Zhong, V. Narra, F. Yousef, D. Kim, M. Burrage-Burton, A. A. Lawal, V. K. Gadi, M. C. Korpics, S. J. Kim, Z. Chen, A. A. Khan, Y. Molina, Y. Dai, G. E. Marai, H. Meidani, R. H. Nguyen,
“A hybrid computer vision model to predict lung cancer in diverse populations” JCO Clinical Cancer Informatics, Feb 2026

J63. C. Chronis*, M. Chen, L. Du, S. Zhao, B. Ye, P. Delafrouz, H. Farooq, D. Chattopadhyay, G.E. Marai, Z. Shao, J. Liang, D.M. Czajkowsky,
“ChromPolymerDB: A High-Resolution Database of Single-Cell 3D Chromatin Structures for Functional Genomics”, NAR-02636-2025, Nucleic Acids Research, 2025

J62. S. Srabanti, G. E. Marai, F. Miranda,
“StreetWeave: A Declarative Grammar for Street-Overlaid Visualization of Multivariate Data”, IEEE Transactions on Visualization and Computer Graphics, Oct 2025

J61. N. West, S. Kamel, [A. Wentzel](#), Z. Kaffey, M. Abdelaal, G.E. Marai, G. Canahuate, X. Zhang, M. Chen, K. Wahid, J. Rigert, K. Brock, M. Chambers, A. Otun, R. Aponte-Wesson, R. He, M. Naser, K. Hutcheson, A. Mohamed, L. van Dijk, A. Moreno, S. Lai, C.D. Fuller, L. Humbert-Vidan
 “Clinical and dosimetric dataset of time-to-event normal tissue complication probability for osteoradionecrosis”
 Nature Scientific Data, Nov 2025

J60. E. Anyimadu, Y. Wang, A. C. Moreno, C. D. Fuller, X. Zhang, G. E. Marai, G. Canahuate,
 “Evaluating Dimensionality Reduction for Patient-Reported Outcome-Based Survival Modeling in Head and Neck Cancer Patients”, J of Clinical Oncology, Aug. 2025

J59. L. Humbert-Vidan, S. Kamel, A. Wentzel et al,
 Externally validated digital decision support tool for time-to-osteoradionecrosis risk-stratification using right-censored multi-institutional observational cohorts, Radiotherapy and Oncology, pp. 1-9, 207, Elsevier 2025.

J58. E.A. Anyimadu, Y. Wang, C. Floricel, S. Kamel, A.C. Moreno, C.D. Fuller, X. Zhang, G.E. Marai, G.M. Canahuate,
 “PRO-based Stratification Improves Model Prediction for Toxicity and Survival of Head and Neck Cancer Patients”, pp. 1-10, IEEE Journal of Biomedical and Health Informatics 2024.
 10.1109/JBHI.2024.3515092

[J57.](#) T. Baumgartl*, M. Ghoniem*, T. von Landesberger*, G.E. Marai*, S. Miksch*, S. Scheithauer*, N. Srivastava*,
 “Empowering Communities: Tailored Pandemic Data Visualization for Varied Tasks and Users”
 pp.1-8, IEEE Comp Graph. App, Jan 2025

[J56.](#) [A. Wentzel](#), S. Attia, X. Zhang, G. Canahuate, C.D. Fuller, G.E. Marai,
 “DITTO: A Visual Digital Twin for Interventions and Temporal Treatment Outcomes in Head and Neck Cancer”, pp. 1-11, IEEE Trans. Vis. Comp. Graphics, Jan 2025 / VIS 2024

[J55.](#) J. Trelles, [A. Wentzel](#), W. Berrios, H. Shatkay, G.E. Marai
 “BI-LAVA: Biocuration with Hierarchical Image Labeling through Active Learning and Visual Analytics”
 pp.1-15, Comp. Graph. Forum 2024

[J54.](#) A. Johnson, L. Renambot, G.E. Marai, D. Tsoupikova, M.E. Papka, L. Long, D. Plepys, J. Talandis, M.D. Brown*, J. Leigh, D.J. Sandin, T.A. DeFanti,
 “Electronic Visualization Laboratory’s 50th Anniversary Retrospective: Look to the Future, Build on the Past”, pp. 1-51, Presence: Virtual and Augmented Reality, MIT Press 2024.

[J53.](#) [A. Wentzel](#), L. Levine, V. Dhariwal, Z. Fatemi, A.Bhattacharya, B. Di Eugenio, A. Rojecki, E. Zheleva, G.E. Marai,
 “MOTIV: Visual Exploration of Moral Framing in Social Media”, pp. 1-14, Computer Graphics Forum 2024.

[J52.](#) [M. Mantovani](#), [A. Wentzel](#), J. Trelles, J. Michaelis, G.E. Marai
 “Kiviat Defense: An Empirical Evaluation of Visual Encoding Effectiveness in Multivariate Data Similarity Detection”,
 Journal of Imaging Science and Technology, Jan 2024.

[J51.](#) [J. Trelles Trabucco](#), C. Arighi, H. Shatkay, G. E. Marai
 “Enhancing biomedical search interfaces with images”
 Bioinformatics Advances, July 2023

- [J50.](#) C. Floricel, A. Wentzel, A. Mohamed, C.D. Fuller, G. Canahuate, G.E. Marai, "Roses Have Thorns: Understanding the Downside of Oncological Care Delivery Through Visual Analytics and Sequential Rule Mining", pp. 1-11, IEEE Trans. Vis. Comp. Graphics, Jan 2024 / VIS 2023 (IF 5.23)
- [J49.](#) A. Wentzel, A. S. R. Mohamed, M. Naser, L. V. van Dijk, K. Hutcheson, A. Moreno, C. D. Fuller, G. Canahuate, G.E. Marai, "Multi-Organ Spatial Stratification of 3-D Dose Distributions Improves Risk Prediction of Long-Term Self-Reported Severe Symptoms in Oropharyngeal Cancer Patients Receiving Radiotherapy: Development of a Pre-Treatment Decision Support Tool" Frontiers in Oncology, section Head and Neck Cancer, July 2023 (IF 4.7)
- [J48.](#) G. Canahuate, A. Wentzel, A. S. R. Mohamed, L. V. van Dijk, D. M. Vock, B. Elgohari, H. Elhalawani, C. D. Fuller, G. E. Marai "Spatially-aware clustering improves AJCC-8 risk stratification performance in oropharyngeal carcinomas", Oral Oncology, July 2023 (IF 3.0)
- [J47.](#) A. Wentzel, C. Floricel, G. Canahuate, M. Naser, A. Mohamed, C.D. Fuller, L. Van Dijk, G.E. Marai, "DASS Good: Explainable Data Mining of Oncology Imaging and Toxicity Data", pp. 1-13, Computer Graphics Forum 2023 / EuroVis, June 2023 (IF 2.36)
- [J46.](#) A. L. Politowicz; A. T. Burks; Y. Dong; Y. M. Htwe; S. M. Dudek; G. E. Marai*; P. Belvitch* "Alveolus Analysis: A Web Browser-based Tool to Analyze Lung Intravital Microscopy" BMC Pulmonary Medicine, Mar 2023
- [J45.](#) L. V. van Dijk, A. S. R. Mohamed, S. Ahmed, N. Nipu, G. E. Marai, K. Wahid, N. M. Sijtsema, B. Gunn, A. S. Garden, J. A. Langendijk, C. D. Fuller "Head and Neck Cancer Predictive Risk Estimator to Determine Control and Therapeutic Outcomes of Radiotherapy (HNC-PREDICTOR) Development, international multi-institutional validation, and web-implementation of clinic-ready model-based risk stratification for head and neck cancer" European Journal of Cancer, 2022 (IF: 10)
- [J44.](#) N. Nipu, C. Floricel, N. Naghashzadeh, R. Paoli, G. E. Marai "Visual Analysis and Detection of Contrails in Aircraft Engine Simulations", pp. 1-11, IEEE Trans. Vis. Comp. Graphics, Jan 2023 / VIS 2022
- [J43.](#) E. Tardini, X. Zhang, G. Canahuate, A. Wentzel, A.S.R. Mohamed, L.van Dijk, C.D. Fuller, G.E. Marai "Optimal Treatment Selection in Sequential Systemic and Locoregional Therapy of Oropharyngeal Squamous Carcinomas: Deep Q-Learning With a Patient-Physician Digital Twin Dyad", pp. 1-21, J of Medical Internet Research, Vol 24(4) April 2022
- [J42.](#) C. Floricel, N. Nipu, A. Wentzel, M. Biggs, G. Canahuate, A.S.R. Mohamed, L. van Dijk, C.D. Fuller, G.E. Marai "THALIS: Human-Machine Analysis of Longitudinal Symptoms in Cancer Therapy" IEEE Trans. Vis. Comp. Graphics /VIS 2021
- [J41.](#) P. Li, G. Zhang, X. Jiang, J. Trelles Trabucco, D. Raciti, C. Smith, M. Ringwald, G. E. Marai, C. Arighi, H. Shatkay "Utilizing Image and Caption Information for Biomedical Document Classification", Bioinformatics, 2021

- [J40.](#) [A. Wentzel](#), [T. Luciani](#), L. V. van Dijk, [N. Taku](#), B. Elgohari, A.S.R. Mohamed, G. Canahuate, C. D. Fuller, D. Vock, G.E. Marai
“Precision association of lymphatic disease spread with radiation-associated toxicity in oropharyngeal squamous carcinomas”
J. Radiotherapy & Oncology 2021
- [J39.](#) [H. Patel](#), D. Vock, G.E. Marai, C.D. Fuller, A. Mohamed, G. Canahuate,
“Oropharyngeal cancer patient stratification using random forest based-learning over high-dimensional radiomic features”
Scientific Reports, 2021.
- [J38.](#) [S. McKearnan](#), D. Vock*, G.E. Marai, G. Canahuate, C.D. Fuller, J. Wolfson,
“Feature Selection for Support Vector Regression Using a Genetic Algorithm”
Biostatistics, 2021.
- [J37.](#) [A. Wentzel](#), [P. Hanula](#), L. V. van Dijk, A. S. Mohamed, B. Elgohari, C. Cardenas, C. D. Fuller, D. Vock, G. Canahuate, G.E. Marai,
“Precision toxicity correlates of tumor spatial proximity to organs at risk in cancer patients receiving intensity-modulated radiotherapy”
J. Radiotherapy & Oncology, 2020
- [J36.](#) [J. Tosado](#), [L. Zdilar](#), H. Elhalawani, B. Elgohari, D. Vock, G. E. Marai, C. D. Fuller, A. S. Mohamed, G. Canahuate,
“Clustering of Largely Right-Censored Oropharyngeal Head and Neck Cancer Patients for Discriminative Groupings to Improve Outcome Prediction”
Scientific Reports, 2020
- [J35.](#) [T. Luciani](#), [A. Wentzel](#), B. Elgohari, H. Elhalawani, A. Mohamed, G. Canahuate, D.M. Vock, C.D. Fuller, G.E. Marai,
“A Spatial Neighborhood Methodology for Computing and Analyzing Lymph Node Carcinoma Similarity in Precision Medicine”
Journal of Biomedical Informatics, Feb. 2020
- [J34.](#) [A. Wentzel](#), [P. Hanula](#), [T. Luciani](#), B. Elgohary, G. Canahuate. D. Vock, C.D. Fuller, G.E. Marai
“Cohort-based T-SSIM Visual Computing for Radiation Therapy Prediction and Exploration”,
IEEE Trans. Vis. and Comp. Graph., pp. 1-11, Jan. 2020, IEEE VIS 2019
- [J33.](#) G.E. Marai*, B. Pinaud, K. Buehler, A. Lex, J.H. Morris
“Ten simple rules to create biological network figures for communication”
PLOS Computational Biology, pp. 1-17, Aug. 2019
- [J32.](#) [J. Trabucco](#), [A. Rottigni](#), [M. Cavallo](#), D. Bailey, J. Patton, G.E. Marai
“User perspective and higher cognitive task-loads influence movement and performance in immersive training environments”
BMC Biomedical Engineering, pp.1-14, Aug. 2019
- [J31.](#) K. Christopherson, A. Ghosh, A.S.R. Mohamed, M. Kamal Jomaa, G. B. Gunn, G. E. Marai, G. Canahuate, H. El Halawani, D. Vock, J. Kalpathy-Cramer, T. Dale, J. Messer, A. S. Garden, S. J. Frank, J. Lewin, S. Y. Lai, W. H. Morrison, J. Phan, N. Gross, R. Ferrarotto, R. S. Weber, D. I. Rosenthal, K. Hutcheson, C. D. Fuller
“Chronic Radiation-Associated Dysphagia in Oropharyngeal Cancer Survivors: Towards Age-Adjusted Dose Constraints for Deglutitive Muscles”
Clinical and Translational Radiation Oncology, Vol. 18, pp. 16–22, Sept. 2019

- [J30.](#) B. Lee, K. Isaacs, D. Albers Szafir, G.E. Marai, C. Turkay, M. Tory, S. Carpendale, A. Endert
“Broadening Intellectual Diversity in Visualization Research Papers”,
IEEE Computer Graphics and Applications, pp. 1-9, July/Aug 2019
- [J29.](#) G.E. Marai, J. Leigh, A. Johnson
“Immersive Analytics Lessons from the Electronic Visualization Laboratory: A 25-Year Perspective”
IEEE Computer Graphics and Applications, pp. 1-13, May/June 2019
- [J28.](#) J. Trelles, D. Lee, S. Derrible, G.E. Marai,
“Visual Analysis of a Smart City's Energy Consumption”,
Multimodal Technologies and Interaction Special Issue on Interactive Visualizations for Sustainability,
pp.1-13, May 2019.
- [J27.](#) P. Hanula, K. Piekutowski, J. Aguilera, G.E. Marai,
“DarkSky Halos: Use-Based Exploration of Dark Matter Formation Data in a Hybrid Immersive Virtual
Environment”
Frontiers in Robotics and AI, section Virtual Environments, Feb 2019, pp. 1-20
- [J26.](#) T. Luciani, A. Burks, C. Sugiyama, J. Komperda, G.E. Marai
“Details first, show context, overview last: Supporting Exploration of Viscous Fingers in Large-Scale
Ensemble Simulations”,
IEEE Trans. on Vis. and Comp. Graphics, pp.1-10, IEEE VIS 2018
- [J25.](#) S.P. Ng, B. A. Dyer, J. Kalpathy-Cramer, A.S.R. Mohamed, M.J. Awan, G.B. Gunn, J. Phan, M.
Zafereo, J.M. Debnam, C. M. Lewis, R. R. Colen, M. E. Kupferman, N. Guha-Thakurta, G. Canahuate,
G.E. Marai, D. Vock, B. Hamilton, J. Holland, C.E. Cardenas, S. Y. Lai, D. I. Rosenthal, C. D. Fuller.
“A Prospective In Silico Analysis of Interdisciplinary and Interobserver Spatial Variability in Post-
Operative Target Delineation of High-Risk Oral Cavity Cancers: Does Physician Specialty Matter?”
Clinical and Translational Radiation Oncology 2018, pp. 1-26, 2018
- [J24.](#) L. Zdilar, D. Vock, G.E. Marai, C.D. Fuller, A.S.R. Mohamed, H. Elhalawani, B. Elgohari,
G.Canahuate
“Evaluating the effect of right-censored endpoint transformation for radiomic feature selection of data
from patients with oropharyngeal cancer”
J Clinical Oncology Clinical Cancer Informatics 2018, pp 1-19, 2018
- [J23.](#) H. Elhalawani, T. A Lin, S. Volpe, A. S.R. Mohamed, A.L. White, J. Zafereo, A. Wong, J. E. Berends,
S. Abohashem, B. Williams, J. M. Aymard, A. Kanwar, S. Perni, C. D. Rock, L. Cooksey, S. Campbell, P.
Yang, K. Nguyen, R. Ger, C. E. Cardenas, X. Fave, C. Sansone, G. Piantadosi, S. Marrone, R. Liu, C.
Huang, K. Yu, T. Li, Y. Yu, Y. Zhang, H. Zhu, J S. Morris, V Baladandayuthapani, J W. Shumway, A
Ghosh, A Pöhlmann, H Phoulady, V Goyal, G Canahuate, G. E Marai, D Vock, S Y. Lai, D S. Mackin, L E.
Court, J. Freymann, K. Farahani, J. Kalpathy-Cramer, C.D. Fuller
“Machine Learning Applications in Head and Neck Radiation Oncology: Lessons from Open-Source
Radiomics Challenges”,
Frontiers in Oncology, Vol. 8, Section: Radiation Oncology, 2018 (IF 4.6)
- [J22.](#) G.E. Marai*, C. Ma, A. Burks, F. Pellolio, G. Canahuate, D. Vock, A.S.R. Mohamed, C.D. Fuller,
“Precision Risk Analysis of Cancer Therapy with Interactive Nomograms and Survival Plots”, pp. 1-13,
IEEE Transactions on Visualization and Computer Graphics, 2018 (IF 2.8)
- [J21.](#) C. Ma, F. Pellolio, D. Llano, R. Kenyon, G.E. Marai
“RemBrain: Exploring Dynamic Biospatial Networks with Mosaic-Matrices and Mirror Glyphs”, Journal
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[J20.](#) G.E. Marai

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C--. H. Fathollahian, S. Zhao, N. Nipu, M. Salahshour, L. Duan, W. Tang, S. Boorboor, G. E. Marai.
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C44. S. Zhao, E. A. Anyimadu, Z. G. Brumm, Y. Ma, C. D. Fuller, X. Zhang, G. E. Marai, and G. Canahuate,
 Dysphagia Risk Stratification in Head and Neck Cancer via Two-Stage PRO-Clinical Stacking, ICMLA 2026 (<25% acceptance rate), Rochester, MI, Oct. 2026

C43. F. Kamleh, A. Johnson, G.E. Marai,
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C42. N. Nipu, G. Johnson, C. Roth, D. Rogers, S. R. Starkenburg, C. R. Steadman, G. E. Marai,
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 H. Jambor, B. Kozlikova , G. E. Marai, M. Siwek, A. van den Brandt (alphabetical order)
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C40. Y. Wang, E. Anyimadu, C. D. Fuller, A. C. Moreno, X. Zhang, G. E. Marai, G. Canahuate, "Improving Survival Prediction of Head and Neck Cancer Patients by Modeling Long-term Symptom Burden", IEEE Conference on Health Informatics (ICHI) June 2026.

C39. E. Anyimadu, X. Zhang, C.D. Fuller, G. E. Marai, G. Canahuate, "Advancing Normal Tissue Complication Probability Modeling with Supervised Contrastive Learning for Predicting Osteoradionecrosis", ASH Track (Applied Computing in Healthcare) at the ACM Symposium on Applied Computing (SAC) 2026, Thessaloniki Greece, March 2026. (23% acceptance rate) **Best Paper Award**

C38. F. Botto, G. Canhuate, X. Zhang, C. D. Fuller, G. E. Marai, "FlavorCharter: Development of a Smartphone App for Quantifying Food Flavor", Workshop on Computational Gastronomy: Data Science for Food and Cooking (CoGamy) at the International Conference on Data Mining (ICDM) 2025, pp. 1-7, Washington DC, November 12 2025.

C--. S. Srabanti, G. E. Marai, F. Miranda, "StreetWeave: A Declarative Grammar for Street-Overlaid Visualization of Multivariate Data", IEEE VIS 2025, Vienna, Austria, Nov. 2025

C37. E. Anyimadu, X. Zhang, C.D. Fuller, G. E. Marai, G. Canahuate, "Attention-Augmented Bi-Directional LSTM for Improved Forecasting of Patient-Reported Outcomes", BHI 2025 IEEE-EMBS International Conference on Biomedical and Health Informatics, Atlanta, Georgia, October 26-29, 2025.

C36. N. Nipu, L. van Dijk, G. Canahuate, C.D. Fuller, G.E. Marai, "Lessons from the Development and Deployment of an Interactive Oncological Risk Estimator", VAHC 2025 (16th workshop on Visual Analytics in Healthcare), in conjunction with [IEEE VIS 2025](#), Vienna, Austria, pp. 1-7, November 2025.

C35. N. Nipu, A. Wentzel, N. Heshmati Molaei, N. Sangi, X. Zhang, G. Canahuate, C. D. Fuller, G. E. Marai, "mEnergy: Development of a Novel mHealth Multi-device Platform for Near Real-time Remote Assessment of Energy Disorders", pp.1-7, The 47th Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC) 2025 (podium presentation)

C34. L. Renambot, M. Papka, J. Talandis, M. Brown, G.E. Marai, L. Long, F. Miranda, D. Tsoupikova, D. Plepys, N. Soni, "Immersive Analytics at the Electronic Visualization Laboratory, IEEE VR 2025 Workshop on "Immersive Visualization Laboratories - Past, Present and Future", pp. 1-4, 2025

C33. Anyimadu, E.A., Wang, Y., Florice, C., Kamel, S., Moreno, A.C., Fuller, C.D., Zhang, X., Marai, G. and Canahuate, G.M., "PRO-based Stratification Improves Model Prediction for Toxicity and Survival of Head and Neck Cancer Patients". In *IEEE-EMBS International Conference on Biomedical and Health Informatics*, 2024.

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C32. E. A. Anyimadu, C.D. Fuller, X. Zhang, G.E. Marai, G. Canahuate "Collaborative Filtering for the Imputation of Patient Reported Outcomes", 35th Database and Expert Systems Applications Conference (DEXA 2024), Naples, Italy, Aug 2024

C--. M. Mantovani, A. Wentzel, J. Trelles, J. Michaelis, G.E. Marai
 “Kiviat Defense: An Empirical Evaluation of Visual Encoding Effectiveness in Multivariate Data Similarity Detection”,
 Electronic Imaging 2024, January 2024, Burlingame, CA. (cross-listed under journal publications above)

C31. J. Trelles, C. Floricel, C. Arighi, H. Shatkay, D. Raciti, M. Ringwald, G.E. Marai,
 “MouseScholar: Evaluating an Image+Text Search System for Biocuration”,
 IEEE International Conference on Bioinformatics and Biomedicine (BIBM) 2023, December 2023, Istanbul, Turkey (19% acceptance rate)

C30. A. Wentzel, L. Levine, V. Dhariwal, Z. Fatemi, A. Bhattacharya, B. Di Eugenio, A. Rojecki, E. Zheleva, G. E. Marai,
 “A Lens to Pandemic Stay at Home Attitudes”,
 IEEE VIS Workshop on Visualization for Pandemic and Emergency Responses 2023 (Vis4PandEmRes), Oct. 2023, Melbourne, Australia (30% acceptance rate)

C29. Y. Wang, L. Van Dijk, A. S. R. Mohamed, M. Naser, C. D. Fuller, X. Zhang, G. E. Marai, G. Canahuate, “Improving prediction of late symptoms using LSTM and patient-reported outcomes for head and neck cancer patients”, pp. 1-10, IEEE-ICHI The 11th IEEE International Conference on Healthcare Informatics 2023, Houston TX.

C--. C. Floricel, A. Wentzel, A. Mohamed, C.D. Fuller, G. Canahuate, G.E. Marai,
 “Roses Have Thorns: Understanding the Downside of Oncological Care Delivery Through Visual Analytics and Sequential Rule Mining”, pp. 1-11, Melbourne, Australia,
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C--. A. Wentzel, C. Floricel, G. Canahuate, M. Naser, A. Mohamed, C.D. Fuller, L. Van Dijk, G.E. Marai,
 “DASS Good: Explainable Data Mining of Oncology Imaging and Toxicity Data”, pp. 1-13, Leipzig, Germany, EG EuroVis 2023 (cross-listed under journal publications above) (25% acceptance rate)

C28. Z. Fatemi, A. Bhattacharya, L. Levine, V. Dhariwal, A. Wentzel, B. Di Eugenio, G.E. Marai, A. Rojecki, E. Zheleva
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C--. N. Nipu, C. Floricel, N. Naghashzadeh, R. Paoli, G. E. Marai
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C27. S. Srabanti, M. Tran, V. Achim, C.D. Fuller, G. Canahuate, F. Miranda, G.E. Marai,
 “A tale of two centers: Visual exploration of health disparities in cancer care”, pp. 101-110. In *2022 IEEE 15th Pacific Visualization Symposium (PacificVis)*, April 2022.

C26. J. Trelles, P. Li, C. Arighi, D. Raciti, H. Shatkay, G.E. Marai,
 “ANIMO: Annotation of Biomed Image Modalities”, pp. 1069-1076,
 IEEE International Conference on Bioinformatics and Biomedicine (BIBM) 2021 (19% acceptance rate)

C25. S. Srabanti, G.E. Marai, F. Miranda
 “EnsembleVis: Visual Analysis of County-level Forecast Ensemble Models”
 IEEE VIS 2021 VAHC (Visual Analytics in HealthCare)

C--. C. Floricel, N. Nipu, A. Wentzel, M. Biggs, G. Canahuate, A.S.R. Mohamed, L. van Dijk, C.D. Fuller, G.E. Marai
 “THALIS: Human-Machine Analysis of Longitudinal Symptoms in Cancer Therapy”
 IEEE VIS 2021 (cross-listed as J42 above) (26% acceptance rate)

C24. Y. Wang, G.E. Marai, X. Zhang, A. Mohamed, L. Van Dijk, C.D. Fuller, G. Canahuate
 “Predicting late symptoms of head and neck cancer treatment using LSTM and patient reported outcomes”
 IDEAS 2021

C--. P. Li, G. Zhang, X. Jiang, J. Trelles Trabucco, D. Raciti, C. Smith, M. Ringwald, G. E. Marai, C. Arighi, H. Shatkay
 “Utilizing Image and Caption Information for Biomedical Document Classification”, Intelligent Systems for Molecular Biology ISMB/ECCB 2021 (cross listed as J41 above) (20% acceptance rate)

C23. M. Biggs, C. Floricel, L. Van Dijk, A. S. R. Mohamed, C.D. Fuller, G.E. Marai, X. Zhang, G. Canahuate
 “Identifying Symptom Clusters from Patient Reported Outcomes through Association Rule Mining”, Artificial Intelligence in Medicine in Europe (AIME) 2021.

C22. J. Trelles, P. Li, H. Shatkay, C. Arighi, G.E. Marai
 “Modality-Classification of Microscopy Images Using Shallow Variants of Deep Networks”
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C21. Wentzel A., Canahuate G., van Dijk L, Mohamed A, Fuller CD, Marai GE.
 “Explainable Spatial Clustering: Leveraging Spatial Data in Radiation Oncology”, pp. 1-5, IEEE VIS 2020.

C--. A. Wentzel, P. Hanula, T. Luciani, B. Elgohary, G. Canahuate. D. Vock, C.D. Fuller, G.E. Marai
 “Cohort-based T-SSIM Visual Computing for Radiation Therapy Prediction and Exploration”, pp. 1-11, IEEE VIS 2019 (cross-listed as J34 above)

C--. T. Luciani, A. Burks, C. Sugiyama, J. Komperda, G.E. Marai
 “Details first, show context, overview last: Supporting Exploration of Viscous Fingers in Large-Scale Ensemble Simulations”, pp.1-10,
 IEEE VIS 2018 (cross-listed as J26 above)

C--. C. Ma, F. Pellolio, D. Llano, R. Kenyon, G.E. Marai
 “RemBrain: Exploring Dynamic Biospatial Networks with Mosaic-Matrices and Mirror Glyphs”,
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C--. G.E. Marai
 “Activity-centered Domain Characterization for Problem-Driven Scientific Visualization”,
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C20. M. Thomas, T. Kanampallil, J. Abraham, GE Marai,
 “Echo: A Large Display Interactive Visualization of ICU Data for Effective Care Handoffs”, pp.1-8, The 8th IEEE Workshop on Visual Analytics in Healthcare VAHC’17, 2017.

- C19. V. Doshi, S. Tuteja, K. Bharadwaj, D. Tantillo, T. Marinnan, J. Patton, G.E. Marai,
 “StickySchedule: An Interactive Multi-user Application for Conference Scheduling on Large-scale Shared Displays”, pp. 1-8, The 6th ACM International Symposium on Pervasive Displays PerDis’17, 2017.
- C18. S. Kitsiou*, M. Thomas, G.E. Marai, N. Maglaveras, G. Kondos, R. Arena, B. Gerber,
 “Development of an innovative mHealth platform for remote physical activity monitoring and health coaching of cardiac rehabilitation patients”, 2017 IEEE International Conference on Biomedical and Health Informatics (top 14%), 2017
- C--. C. Ma, T. Luciani, A. Terebus, J. Liang, G.E. Marai,
 “PRODIGEN: Visualizing the probability landscape of stochastic gene regulatory networks in state and time space”, pp 1-13, IEEE BioVis 2016 (cross-listed as J16 above)
- C17. D. McNamara, J. Tapia, C. Ma, T. Luciani, A. Burks, J. Trelles, and G.E. Marai,
 “Spatial Analysis of Employee Safety Using Organizable Event Quiltmaps”, pp. 1-4, IEEE VIS 2016 The Event Event: Temporal & Sequential Event Analysis Workshop, Oct. 2016.
- C16. G.E. Marai*, A. Forbes, A. Johnson,
 “Interdisciplinary Immersive Analytics at the Electronic Visualization Laboratory: Lessons Learned and Upcoming Challenges”, IEEE Virtual Reality Workshop on Immersive Analytics, pp 1-6, 2016
- C15. K. Bharadwaj, S. Flores, J. Rodriguez, L. Long, G.E. Marai,
 “Developing a Scalable SNMP Monitor”, IEEE IPDPS (International Parallel and Distributed Processing Symposium) Workshop on High Performance Data Analysis and Visualization, pp.1-4, 2016
- C--. G.E. Marai*, T. Luciani, A. Maries, L. Yilmaz, M. Nik.
 “Visual Descriptors for Dense Tensor Fields in Computational Turbulent Combustion: A Case Study”, pp. 1-12. Conference on Visualization and Data Analysis 2016, Part of IS&T Electronic Imaging 2016 (cross-listed as J15 above)
- C14. G.E. Marai,
 “Visual Scaffolding in Integrated Spatial and Nonspatial Visual Analysis”, pp. 1-5, The Sixth International Eurovis Workshop on Visual Analytics EuroVA’15, May 2015
- C--. J. Aurisano, K. Reda, A. Johnson, G.E. Marai, J. Leigh,
 “BactoGeNIE: A Large-Scale Comparative Genome Visualization for Big Displays”, pp. 1-13, The Fifth Symposium on Biological Data Visualization BioVis’15, July 2015. (cross-listed as J14 above)
- C13. J. Wenskovitch, T. Luciani, K. Chen, G.E. Marai,
 “Fixing TIM: Identifying Functional Mutations in Protein Families through the Interactive Exploration of Sequence and Structural Data”, IEEE BioVis 2013 Data Competition, pp. 1–4, 2013. **IEEE BioVis’13 Data Contest Visualization Award.**
- C--. A. Maries, N. Mays, M. Olson, K. Wong, W. Layton, C. Rosano, R. Boudreau, G.E. Marai,
 “GRACE: A Visual Comparison Framework for Integrated Spatial and Non-Spatial Geriatric Data”, IEEE VIS 2013 (formerly VisWeek, formerly IEEE Visualization) SciVis, pp.1-10, Oct 2013. (cross-listed as J9 above)
- C12. Md. A. Haque, G. E. Marai,
 “A Semi-Automated Method for Subject-Specific Modeling of the Spinal Canal from Computed Tomography Images and Dynamic Radiographs”, The 18th International Workshop on Vision, Modeling and Visualization, pp. 1–8, Sep 2013.

- C11. Md.A. Haque, G.E. Marai,
“Image to Mesh: Spinal Ligament 2D Surface Models from Bone Volume Images and Dynamic Radiographs”, MICCAI 2013 Workshop on Mesh Processing in Medical Image Analysis, pp. 1-12, Sept 2013.
- C10. M. Liang, J. Guerra, G.E. Marai, P. Brusilovsky,
“Collaborative E-Learning through Open Social Student Modeling and Progressive Zoom Navigation”, The 8th IEEE International Conference on Collaborative Computing: Networking, Applications and Worksharing, pp. 1-10, Oct 2012. **Desire2Learn Edge Challenge shortlist.**
- C9. T. Luciani, S. Myers, B. Sun, B. Cherinka, W.M. Wood-Vassey, A. Labrinidis, G.E. Marai,
“Panning and Zooming the Observable Universe with Prefix-Matching Indices and Pixel-Based Overlays”, IEEE Large-scale Data Analysis and Visualization Symposium, pp. 1-8, Oct 2012. **Best-Paper Runner-Up Award.**
- C8. P. Neophytou, R. Gheorghiu, R. Hachey, T. Luciani, B. Sun, A. Labrinidis, G.E. Marai, P. K. Chrysanthis,
“AstroShelf: Understanding the Universe through Scalable Navigation of a Galaxy of Annotations”, SIGMOD 2012 System Demonstrations, pp. 1-4, May 2012.
- C7. A.M. Smith, W. Xu, Y. Sun, J.R. Faeder, G.E. Marai,
“RuleBender: Integrated Visualization for Biochemical Rule-Based Modeling”, IEEE Visualization 2011, IEEE BioVis: Symposium on Biological Data Visualization, pp.1-8, Oct 2011. **Best Paper Award.**
- C6. W. Xiong, D. Litman, G.E. Marai,
“Analyzing Prosodic Features and Student Uncertainty using Visualization”, Association for the Advancement of Artificial Intelligence Fall Symposium (AAAI-FS’09), pp. 1-6, Nov 2009.
- C5. G.E. Marai*, J.J. Crisco, D.H. Laidlaw,
“Development of a Kinematic 3D Carpal Model to Analyze In Vivo Soft-Tissue Interaction Across Multiple Static Postures”, IEEE 31st Conf. of the Engineering in Medicine and Biology Society (EMBC’09), pp. 7176–7179, Sept. 2009. (Podium)
- C-. J.S. Albrecht, R. Hwa, G.E. Marai,
“The Chinese Room: Visualization and Interaction to Understand and Correct Ambiguous Machine Translation”, Eurographics/IEEE Symposium on Visualization, Proceedings of, pp. 1-8, June 2009 (*cross-listed as J5 above*)
- C4. J. Albrecht, R. Hwa*. G.E. Marai,
“Correcting Automatic Translations through Collaborations between MT and Monolingual Target-Language Users”, EACL 2009, 12th Conference of the European Chapter of the Association for Computational Linguistics, pp. 60-68, Mar. 2009.
- C3. G.E. Marai, J.J. Crisco, D.H. Laidlaw,
“A Kinematics-Based Method for Evaluating the Stabilizing Role of Ligaments in the Carpal Joint”, 16th Annual Symposium on Computational Methods in Orthopaedic Biomechanics, Computational Modeling track, pp. 1-4, Mar. 2008 (Podium).
- C2. G.E. Marai, J.J. Crisco, D.H. Laidlaw,
“A Kinematics-Based Method for Generating Cartilage Maps and Deformations in the Multi-Articulating Wrist Joint from CT Images”, IEEE 28th Conf. of the Engineering in Medicine and Biology Society (EMBC’06), pp. 2079-2082, Sept. 2006.

C1. G.E. Marai*, A. Ivan,
 “Neural Networks versus Fuzzy Logic”, Politehnica Bioengineering Scientific Session, pp. 1-10,
 Politehnica University of Bucharest, pp. 1-10, May 1996. **Best paper award.**

Peer-reviewed Abstracts and System Demonstrations

Several short papers have higher citation counts than TVCG papers, several are ACM Student Research semifinalists or other award winners, several have 10% (podium) selection or acceptance rates etc.

S 44. F. Corna, X. Zhang*, G. Canahuate, S. K. Attia, A. S. Mohamed, M. Naser, C. D. Fuller, G.E. Marai,
 “Imitation Learning with Superhuman Policy Gradient Optimization for Sequential Cancer Treatment Decisions”, ASH Track (Applied Computing in Healthcare) Short Papers/Poster Program at the ACM Symposium on Applied Computing (SAC) 2026, Thessaloniki Greece, March 2026. (6% acceptance rate)

S43. H. Fathollahian, S. Zhao, M. Nipu, G.E. Marai, "Attention-based Region of Interest Discovery in 3D Tissue Images" IEEE BioMedVis Challenge 2025, **IEEE VIS, 2025. BioMedVis Challenge Award of Merit 2025.**

S42. S. Zhang, G.E. Marai,
 A Part-to-Whole Circular Cell Explorer, IEEE BioMedVis Challenge, IEEE VIS, 2024.

S41. S. Gawane, X. Zhang, G. Canahuate, A. Wentzel, A. Mohamed, L. van Dijk, C.D. Fuller, G.E. Marai,
 Interpretable Transformer-based Meta-Reinforcement Learning for Longitudinal Head-and-Neck Cancer Treatment, Sixth ISC Workshop on HPC Applications in Precision Medicine, Oct 2023

S40. L. V. van Dijk, A. S. R. Mohamed, S. Ahmed, N. Nipu, G. E. Marai, K. Wahid, N. M. Sijtsema, B. Gunn, A. S. Garden, J. A. Langendijk, C. D. Fuller
 “HNC-PREDICTOR model to select head and neck patients for personalized treatment”
 10th European Conference on Head & Neck Oncology, 2023

S39. E. Tardini, X. Zhang, G. Canahuate, A. Wentzel, A. Mohamed, L. van Dijk, C.D. Fuller, G.E. Marai,
 “A digital twin dyad with deep Q-learning in head and neck cancer treatment”
 Fourth ISC Workshop on HPC Applications in Precision Medicine, June 18 2021

S38. Y. Dong, A. Burks, A. Politowicz, S. Dudek, P. Belcovitch, G.E. Marai,
 “Alveolus Analysis: A Web Based Tool for Analysis Of Intravital Lung Microscopy”
 American Thoracic Society (ATS) Meeting 2021 & Midwest Clinical and Translational Research Meeting 2021 (NIH K-award \$500)

S37. C. Floricel, N. Nipu, N. Kumar, A. Wentzel, G. Canahuate, L. vanDijk, C.D. Fuller, G.E. Marai,
 “Visualizing Patient Clusters and Symptom Development During Head and Neck Cancer Treatment”
 IEEE VIS 2020 Posters Program, Salt Lake City, UT, 2020.

S36. T. Luciani, B. Elgohari, H. Elhalawani, A.S. Mohamed, G. Canahuate, D. Vock, C.D. Fuller, G.E. Marai
 “Correlating Toxicity Outcomes with Spatial Patterns of Lymph Node Metastasis for Oropharyngeal Cancer Patients”
 ASTRO Annual Meeting of the American Society for Radiation Oncology, Chicago, IL 2019

- S35. A. Wentzel, B. Elgohari, P. Hanula, T. Luciani, H. Elhalawani, C. E. Cardenas, B. Edwards, A. S. Mohamed, G. Canahuate, D. Vock, C. D. Fuller, and G. E. Marai
 “Cohort-Based Spatial Similarity Can Predict Radiotherapy Dose Distribution”,
 ASTRO Annual Meeting of the American Society for Radiation Oncology, pp. 1-2, Chicago, IL 2019
- S34. H. Elhalawani, A. Mohamed, S. Volpe, P. Yang, S. Campbell, R. Granberry, R. Ger, X. Fave, L. Zhang, GE Marai, DM Vock, GM Canahuate, D. Macking, L. Court, GB Gunn, A. Rao, CD Fuller,
 “A Composite Clinical/Serially-derived Parotid Gland Radiomics-based Model can be
 Correlated with Post-RT Xerostomia at 6 months in Oropharyngeal Cancer Patients
 Treated with Image-Guided Radiation Therapy”, pp. 1-3, ESTRO 2018
- S33. H. Elhalawani, A. Mohamed, S. Volpe, P. Yang, S. Campbell, R. Granberry, R. Ger, X. Fave, L. Zhang, GE Marai, DM Vock, GM Canahuate, D. Macking, L. Court, GB Gunn, A. Rao, CD Fuller,
 “A Combination of Serial Tumor Radiomics Features and key clinical attributes can predict the response
 of Head & Neck Cancers Treated with Image-Guided Radiation Therapy”, pp. 1-3, ESTRO 2018
- S32. J. Castor, J. Borowicz, A. Burks, M. Thomas, T. Luciani, G.E. Marai, "MC2 - Mining Factory
 Pollution Data through a Spatial-Nonspatial Flow Approach", IEEE Visual Analytics Science and
 Technology (VAST) Challenge 2017 Proceedings, pp. 1-2, 2017. **VAST Challenge Honorable
 Mention (MC2)** in competition with 56 submissions from teams in academia, industry, and
 government
- S31. D. Kirilov, I. Lindmae, A. Burks, C. Ma, G.E. Marai
 "MC1: A Bespoke Analysis Tool for Spatio-temporal Park Traffic Data"
 IEEE Visual Analytics Science and Technology (VAST) Challenge 2017 Proceedings, pp. 1-2, 2017.
- S30. V. Mahida, B. Kupiec, A. Burks, T. Luciani, G.E. Marai, "MC3 - A Web-Based Interactive Image
 Explorer for Temporal Analysis of Satellite Images", IEEE Visual Analytics Science and Technology
 (VAST) Challenge 2017 Proceedings, pp. 1-2, 2017. **VAST Challenge Honorable Mention (MC3)** in
 competition with 56 submissions from teams in academia, industry, and government
- S29. H. Elhalawani et al
 “Predicting the HPV P16 Status of Oropharyngeal Cancer Patients Using Radiomics and an Ensemble of
 Random Forests”, Radiology Society of North America meeting RSNA 2017 (podium)
- S28. H. Elhalawani et al
 “Normal Tissue Radiomic Feature Kinetics in Oropharyngeal Cancers Treated with Image-Guided
 Radiation Therapy: Assessment of Parotid Glands Textural Changes on Daily Non-contrast CT”,
 Radiology Society of North America meeting RSNA 2017
- S27. C. Ma, A. Burks, T. Luciani, A. Terebus, J. Liang, G.E. Marai
 “Visualizing ensemble time-evolving probability landscapes of stochastic networks”, ISMB/ECCB 2017,
 pp. 1-2, BioVis’17
- S26. T. Luciani et al, “Multi-scale Voronoi-based ACT Assessment”, IEEE VIS VPG Data Contest, pp. 1-2,
 Oct 2016. **Honorable Mention.**
- S25. A. Kanwar, M.A.S. Radwan, L. Court, J.S. Lee, A. Rao, J. Kalpathy-Cramer, D.Vock, G.E. Marai, G.
 Canahuate, G.B. Gunn, J. Zhang, C.D. Fuller, “Contrast-enhanced CT (CE-CT) Texture Analysis
 Radiomic Analysis of Pretreatment Contrast-Enhanced CT Imaging Predicts Local Failure in
 Oropharyngeal Cancers Treated with Radiotherapy”, pp. 1-2, ASTRO 2016, Sep 2016

- S24. T. Luciani, C. Ma, J. Trelles, F. Pelollio, G.E. Marai, “Developing a Data-Driven Wiki of Spatial-Nonspatial Integration Tools”, IEEE VIS C4PGV Workshop 2016, pp.1-1, Oct 2016.
- S23. A. Burks, C. Sugiyama, T. Luciani, J. Komperda, G.E. Marai, “Interactive Exploration and Tracking of Ensemble Viscous Fingers”, IEEE VIS SciVis Data Contest 2016, IEEE VIS 2016, pp. 1-2, Oct 2016.
- S22. P. Hanula, K. Piekutowski, C.Uribe, K. Almryde, A. Nishimoto, J. Aguilera, G.E. Marai, “Cavern Halos: Exploring Spatial and Nonspatial Cosmological Data in an Immersive Virtual Environment”, Virtual and Augmented Reality, 3D, and Stereoscopic Systems Conference Poster Compendium, Electronic Imaging '16, Feb 2016
- S21. T. Luciani, A. Maries, M. Nik, L. Yilmaz, G.E. Marai, “Visualization of Tensor Quantities Used in Computational Turbulent Combustion”, American Physical Society, Division of Fluid Dynamics (APS DFD) Conference 2013, pp. 1-1, Nov 2013.
- S20. J. Wenskovitch, L. Harris, J. Faeder, G.E. Marai, “A Journaling System for Rule-Based Biochemical Models”, IEEE BioVis Posters Compendium, pp. 1–1, Oct 2013.
- S19. T. Luciani, A. Maries, H. Tran, M. Nik, S.L. Yilmaz, G.E. Marai, “A Novel Method for Tracking Tensor-based Regions of Interest in Large-Scale, Spatially-Dense Turbulent Combustion Data”, IEEE Visualization 2012, Poster Abstracts with System Demonstration, pp. 1-2, Oct 2012.
- S18. Md. A. Haque, W. Anderst, S. Tashman, G.E. Marai, “Validation of a Non-invasive Automated Hierarchical Method to Precisely Measure Lumbar Spine Movement”, The 2012 Annual Meeting of the Orthopaedic Research Society, Image Processing track, pp. 1, March 2012.
- S17. T. Luciani, R. Hachey, D.Q. Oliphant, B.A. Cherinka, G.E. Marai, “Pixel-based Overlays for Navigating a Galaxy of Observations”, IEEE Visualization 2011, Large-scale Data Analysis and Visualization Symposium, Poster Abstracts with System Demonstration, pp. 1-2, Oct 2011.
- S16. A. Maries, S. Mandayam, C. Rosano, G.E. Marai, “Visual Analysis of Brain/Gait Correlations”, IEEE Visualization 2011, Poster Abstracts with System Demonstration, pp. 1-2, Oct 2011.
- S15. S.D. Rothenberger, J.E. Wenskovitch, G.E. Marai, “Pexel and Heatmap Visual Analysis of Multidimensional Gun/Homicide Data”, IEEE Visualization 2011, Visual Analytics Science and Technology, Poster Abstracts with System Demonstration, pp. 1-2, Oct 2011.
- S14. A. Smith, W. Xu, J.R. Faeder, G.E. Marai, “Scalable Global Views for Biological Rule-Based Modeling”, IEEE Visualization 2011, InfoVis Poster Abstracts with System Demonstration, pp. 1-2, Oct 2011.
- S13. Md. A. Haque, A. Maries, S.L. Yilmaz, M.B. Nik, G.E. Marai, “Tensor Visualization in Computational Turbulent Combustion: A Case Study”, IEEE Visualization 2010, Poster Abstracts with System Demonstration, pp. 1-2, Oct 2010.
- S12. G.E. Marai, J.J. Crisco, D.H. Laidlaw, “Estimation of Optimal Carpal Contact in the Human Wrist from Multiple Static Articulation Postures”, 2009 Biomedical Engineering Society (BMES) Annual Meeting, Computational Modeling track, pp.1, Oct 2009 (Podium).
- S11. G.E. Marai, “MyWorld4D: Introduction to Computer Graphics with a Modeling and Simulation Twist”, ACM SIGGRAPH 2009, Education Talks Track, pp. 1, Aug. 2009.

- S10. A.M. Smith, J.J. Geiger, G.M. Kapfhammer, M. Renieris, G.E. Marai, “Interactive Coverage Effectiveness Multiplots for Evaluating Prioritized Regression Test Suites”, IEEE Visualization 2009, Poster Abstracts with System Demonstration, pp. 1-2, Oct 2009.
- S9. J.S. Albrecht, R. Hwa, G.E. Marai, “The Chinese Room – Understanding and Correcting Machine Translation”, IEEE Information Visualization 2008, Poster Abstracts with System Demonstration, pp. 1-2, Oct. 2008.
- S8. G.E. Marai*, D.H. Laidlaw, “Markerless inter-subject bone shape matching using 2D projections”, Medical Image Computing and Computer Assisted Intervention (MICCAI) 2005, pp. 1-2, 2005.
- S7. G.E. Marai, C. Demiralp, S. Andrews, D.H. Laidlaw, “JointViewer – an interactive system for exploring orthopedic data”, IEEE Visualization 2004, Poster Abstracts with System Demonstration, pp. 1-2, 2004.
- S6. E. Bromberg, A. Jonsson, G.E. Marai*, M. McGuire, “Hybrid Billboard Clouds for Model Simplification”, ACM SIGGRAPH Poster Compendium, pp. 1-2, 2004. **ACM Student Research Competition semifinalist.**
- S5. P. Sibley, P. Montgomery, G.E. Marai, “Wang Cubes for Video Synthesis and Geometry Placement”, ACM SIGGRAPH Poster Compendium, pp. 1-2, 2004. **ACM Student Research Competition semifinalist.**
- S4. J.J. Crisco*, G.E. Marai, D.H. Laidlaw, D. Moore, E. Akelman, “Kinematic and mechanical changes in the distal radioulnar joint (DRUJ) of patients with malunited distal radius fractures”, 49th Annual Meeting of the Orthopaedic Research Society, Computational Modeling track, pp. 1, 2003.
- S3. G.E. Marai, D.H. Laidlaw, J.J. Coburn, M.A. Upal, J.J. Crisco, “A 3D Method for Segmenting and Registering Carpal Bones from CT Volume Images”, Annual Meeting of the American Society of Biomechanics, Medical Imaging track, pp. 1, 2003.
- S2. G.E. Marai, D.H. Laidlaw*, C. Demiralp, C. Grimm, J.J. Crisco, D. Moore, and E. Akelman, “Contact Areas and Ligament Lengths are Abnormal in Patients with Malunited Distal Radius Fracture Despite Normal Radioulnar Kinematics”, 4th World Congress Biomechanics, Computational Modeling track, pp.1-2, 2002.
- S1. C. Demiralp, G.E. Marai, S. Andrews, D.H. Laidlaw*, J.J. Crisco, C. Grimm, “Modeling and Visualization of Inter-Bone Distances in Joints”, IEEE Visualization 2001, Work in Progress Proceedings, pp. 24-25, 2001.

Other Publications

- O8. J. Aurisano and G.E. Marai, “Recent Trends and Challenges in Biological Data Visualization”, pp. 1-3, Comp. Graphics & Applications, 2025.
- O7. K. Klein, G.E. Marai, K. Nieselt, B. Zupan, “Report from Dagstuhl Seminar 21401 Visualization of Biological Data – From Analysis to Communication”, pp. 1-40, 2021.
- O6. J. Aerts, N. Gehlenborg, K. Nieselt, G.E. Marai, “Report from Dagstuhl Seminar 18161 Visualization of Biological Data – Crossroads”, pp. 1-40, 2019.
http://drops.dagstuhl.de/opus/volltexte/2018/9760/pdf/dagrep_voo8_i004_p032_18161.pdf

- O5. B. Habtegiorgis, E. Kreft, T. Luciani, G.E. Marai, “Visual Encodings for Immersive Visualization of Turbulent Combustion Data”, Tapia Conference, pp 1-2, Sep 2016.
- O4. C. Uribe, P. Hanula, K. Piekutowski, A. Nishimoto, K. Almryde, J. Aguilera, G.E. Marai, “3D Immersive Color-Mapping of Large Astronomical Data”, Tapia Conference, pp 1-2, Sep 2016.
- O3. D.Q. Oliphant, G.E. Marai, “Real Time Ray Tracing in a Space Limited Environment”, Technical Report TR-2011-03, University of Pittsburgh, Computer Science Department, 2010.
- O2. A.M. Smith, W. Xu, Y. Sun, J.R. Faeder, G.E. Marai, “Visual Tools for Modeling and Simulation of Cell Signaling Networks”, Carnegie Mellon Bioimaging Informatics Symposium, Sep 2010.
- O1. G.E. Marai, “Geometry Compression of DirectX Files”, Technical Report 322/98, Philips Research, September 1998 (company-restricted distribution).

Patents

Intelligent algorithms for tracking three-dimensional skeletal movement from dynamic stereo-radiographic image sequences, S. Tashman; G.E. Marai; Md.A. Haque; US Patent 9,538,940, Jan 2017. Technology transfer for medical instrument (exclusive license) to C-Motion Inc, March 2016.

Software

Created, maintained, deployed and/or freely distributed

ORN-PREDICTOR: interactive, web-based visual computing interface that calculates and displays the osteoradionecrosis toxicity probability for a given head and neck cancer patient who underwent radiotherapy, based on cohorts of similar patients from two centers. Project developed in collaboration with MD Anderson Cancer Center. (2024)

<https://uic-evl.github.io/OsteoradionecrosisVis/>

GXD MOUSE SCHOLAR: publication retrieval system for searching biomedical documents in the GXD-2000 collection based on text AND images. It retrieves documents that contain both the desired text and desired image modalities (such as “cell” and “microscopy”) and presents the document information along with the relevant images in those documents. Project developed in collaboration with several biocuration groups at U Delaware, Caltech, and Jackson Labs. (2023)

<https://runachay.evl.uic.edu/gxd/>

HN-PREDICTOR: interactive, web-based visual computing interface that calculates and displays the survival and toxicity probability for a given head and neck cancer patient, based on cohorts of similar patients from several nations. Project developed in collaboration with MD Anderson Cancer Center. (2023)

<https://uic-evl.github.io/hnc-predictor/>

CORD-19 IMAGE SCHOLAR: publication retrieval system for the CORD-19 documents from the Allen Institute collection that contain both the desired text and desired image modalities (such as “cell” and “microscopy”), and which presents the document information along with the relevant images in those documents. Project developed in collaboration with several biocuration groups at U Delaware, Caltech, and Jackson Labs. (2023)

<https://runachay.evl.uic.edu/scholar>

ALVEOLUS: a web browser-based tool to analyze mouse lung intravital microscopy. (2023)

<https://github.com/uic-evl/AlveolusAnalysis>

ANIMO: an interface for interactively labeling image modalities in biomed scientific publications. Deployed with researchers at University of Delaware and at Caltech.

<https://runachay.evl.uic.edu/animo>

SMARTER: software to compute the probability of survival and specific toxicities for a specific patient, based on an anonymized cohort of head and neck cancer patients.

<https://github.com/uic-evl/SMARTER> ; <http://qubbd-smarter.evl.uic.edu:8000/>

CAMP-RT: an automated method to compute the similarities between multiple cancer patients in terms of their radiation therapy plan and rank these anonymized patients accordingly. Deployed at MD Anderson Cancer Center, University of Texas.

<https://github.com/uic-evl/CAMP-RT>

Lymphatic Cancer Viz: This project visualizes the chain of affected lymph nodes for patients in a cohort of head and neck cancer patients, ranked by disease spread similarity.

<https://github.com/uic-evl/LymphaticCancerViz>

Chicago Energy: an open-source, freely-available, web-based visual explorer for energy consumption data in Chicago

Englewood Social Service Finder: a freely-available, web-based visual interface for making social service data available to young people in Englewood, Chicago. Sponsored by The Joseph and Bessie Feinberg Foundation.

StickySchedule: a freely-available, open-source tool for collaboratively scheduling conference sessions on large displays. Available under EVL’s SAGE2 middleware.

SAGEBoard: an open-source interactive application for collaborative use of large displays as a whiteboard. Available under EVL’s SAGE2 middleware.

CavernHalos: a free and open-source immersive 3D application for exploring dark matter simulation data in a CAVE2 environment. Available under EVL’s CAVE2 environment.

RuleBender: a free visual tool for constructing, debugging, simulating and analyzing rule-based biological models. Distribution for Windows, Linux and OSX, 32 bit and 64 bit. More than 1,000 downloads in 2012 alone.

GRACE: a visual comparison tool for integrated spatial and non-spatial geriatric data. Distribution for Linux and OSX, commissioned by and deployed to the Pitt Graduate School for Public Health. Described as their “Dream Tool” by the user.

Fixing TIM: a visual mining and analysis tool to help identify protein mutations across family structural models, and to help discover the effect of these mutations on protein function. Linux distribution, currently in beta-release. IEEE BioVis 2013 Data Contest Visualization Award.

MOSBIE: an interactive model exploration system for tracking the features and development history of a family of biochemical models, and for identifying similarities and differences between biochemical models.

Astroshef: a “Scientific Google Sky”, designed and implemented from scratch; its power and flexibility enables it to serve the needs of the scientific astronomy community. The front-end of this visual computing infrastructure uses the web technologies WebGL and HTML5 to enable cross-platform, web-based functionality. Currently in beta-release. IEEE LDAV 2012 Best Paper Runner-Up.

Hierarchical Spine Tracking: a project for automatically, accurately and reliably determining the 3D motion of the cervical spine from a series of stereo or biplane radiographic images. The software has led to a reduction in labor-time by a factor of 12; the project has been deployed at the UPMC Biodynamics Lab. Patent awarded.

Distance-field Computed-Tomography Registration: a project for accurately tracking 3D motion of orthopaedic data from sequences of CT volumes. Accuracy improvements of over 74% compared to the previous state of the art. Project deployed at Brown University.

Research Grants and Awards

NIH Ro1 DE037101: SCH: Flavor Charter: Precision Data-Driven Diagnosis, Monitoring and Guidance for Dysgeusia, Lead PI on multi-site project with U Iowa, UIC Co-Is: X. Zhang, H. Esmailbeigi, A. Salahudeen, \$1,157,399, 09/17/2026-09/16/2030.

NIH R21 EB037290: Image-based Detection and Spatial Monitoring of Secondary Lymphedema in Head and Neck Cancer, Lead PI on multi-site project with U Texas, UIC Co-I: W. Tang, \$362,880, 09/02/2026-09/01/2028.

NIH Ro1 CA304878: A multimodal approach to increase accuracy and generalizability in lung cancer early detection, Co-I (PI: A. Salahudeen, other Co-Is: A. Boyd, Y. Dai, Z. Chen, M. Strahan, E. Seltzer, V. Henderson, Y. Molina, R. Hopkins), \$3.2M, 09/04/2026-09/03/2030.

UIC Pilot Institute for Health Data Science Research, Directors: Andrew Boyd and Liz Marai, \$2.0M, 02/15/2024 – 02/15/2028.

NIH UG3 TR004501: Integration and interoperability of complex data and tissues from the human brain, Co-PI. PI: Jeffrey Loeb (Neurology and Rehabilitation), who is heading a Chicago Epilepsy Cooperative Agreement between UIC, Rush University, University of Chicago, Northwestern University, and Lurie Children's Hospital. UIC team: Site PI Anna Serafini (Neurology and Rehabilitation), Co-Is: Biswajit Maharathi (Neurology and Rehabilitation), Liz Marai (CS), Fozia Mir (Neurology and Rehabilitation), Ahmad Daher (Neurology and Rehabilitation), \$3,131,401, 09/20/2023 - 07/31/2026

NSF CNS-2320261 Research Infrastructure: MRI: Track 2 Acquisition of Data Observation and Computation Collaboratory (DOCC), Co-PI (PI: A. Johnson, other Co-PIs: M. Papka, F. Miranda, N. Soni), \$1,548,545, 10/01/2023 - 09/30/2026.

University Scholar Award, University of Illinois System, \$45K, May 2023 – May 2026.

“NIH R01 Longitudinal Spatial-Nonspatial Decision Support for Competing Outcomes in Head and Neck Cancer Therapy”, NIH NCI R01CA258827, Lead PI on multi-site project with U Texas, and U Iowa, UIC Co-PI: X. Zhang, \$2.8M, Mar 2021 – Feb 2026.

“NIH NCI Diversity Supplement to R01CA258827”, Lead PI on supplement to U Texas, \$106K, Oct 2021 – Feb 2022.

“NIH Uncovering Clinical Evidence in COVID-19 Publications: An Integrated Search via Text & Images”, NIH-NLM Supplement, MPI (U Delaware MPI: H. Shatkay, Co-PI: C. Arighi), \$29K out of \$75K, Sep 2020-Aug 2023

“I-BRAIN - A Big Data of the Human Brain Analytics Platform and Scientific Cluster”, Discovery Partners Institute DPI, Co-PI (PI: J. Loeb, Other Co-PIs: M. Marko, B. Maharathi, E. Sadhu, N. Albarracin, R. Iyer, J. Patton, E. Barbour, K. Donnelly), \$125K, Sep 2020- Aug 2021

“NSF III RAPID: Stay-at-home attitudes and their impact on the COVID-19 pandemic”, NSF-IIS-2031095, Co-PI (PI: E. Zheleva, other Co-PIs: B. Di Eugenio, A. Rojecki), \$99K, May 15, 2020-Apr. 30, 2022.

“NSF CDS&E High-performance Computing and Data-driven Modeling of Aircraft Contrails”, NSF-CDS&E- 1854815, Co-PI (PI: R. Paoli, MIE), \$446K, July 1, 2019 – June 30, 2023.

“NSF MRI Acquisition of a Composable Platform as a Service Instrument for Deep Learning & Visualization (COMPaaS DLV)”, NSF-CNS-1828265, Co-PI (PI: M. Brown, other Co-PIs: A. Johnson, R. Kenyon), \$997,363, Oct 2018 – Sep 2021.

“NIH R01 Incorporating Image-based Features into Biomedical Document Classification”, NIH-NLM-R01LM012527, PI on M-PI grant with U Delaware (subcontract from U Delaware, PI H. Shatkay), \$568,630 out of \$1.85M award, Sep 2017 – Aug 2023.

“NIH R01 QuBBD: Precision E–Radiomics for Dynamic Big Head & Neck Cancer Data”, NIH-NCI-R01CA225190, Lead PI on interdisciplinary multi-site project with U Texas, U Iowa, and UMN, \$782K, Sept 2017 – Aug 2022. (Routed to NIH from NSF for funding, Highly Competitive)

“NIH R01 SMART-ACT: Spatial Methodologic Approaches for Risk Assessment and Therapeutic Adaptation in Cancer Treatment”, NIH-NCI-R01CA214825, Lead PI on interdisciplinary multi-site project with U Texas, U Iowa, and UMN, \$1.12M, Mar 2017 – Mar 2021.

“NSF MRI-Development of Continuum: A Virtualized Attentive Environment for Amplified Collaboration”, NSF CNS-1625941, Co-PI, (PI: A. Johnson, other Co-PIs M. Brown, A. Forbes, R. Kenyon, B. Di Eugenio), \$550K, Sept 2016 – Sept 2021.

“UIC Collaborative Dashboard for Patient Care Transitions”, UIC College of Engineering Seed, PI (other co-PIs T. Kannampallil, J. Abraham, UIC School of Medicine), \$25K, May 2016 – Apr 2017.

“NSF DMS QUBBD: Collaborative Research: SMART -- Spatial-Nonspatial Multidimensional Adaptive Radiotherapy Treatment”, NSF-DMS-1557559, PI, other Co-PIs: CD Fuller (MD Anderson Cancer Center), G. Canahuat (U. Iowa), D. Vock (U. Minnesota), \$100K (\$25K award to UIC), Sept 2015 – Sept 2016.

“NSF CAREER Data-driven Bottom-Up Humanoid Articulations”, NSF CAREER IIS-1541277, PI, \$280K transfer to UIC, Oct 2014 - Apr 2017.

“NSF CDS&E: Data Management and Visualization in Petascale Turbulent Combustion Simulation”, NSF CBET-1250171, Co-PI (P. Givi PI; other co-Pis L. Yilmaz, A. Labrinidis, P. Chrysanthis), \$500K (*\$352K direct; PI on subcontract to UIC*), Sept 2012 – August 2017.

“NSF CDI-Type II: Understanding the Universe through Scalable Navigation of a Galaxy of Annotations”, NSF OIA-1028162, Co-PI (A. Labrinidis, PI; other Co-Pis P. Chrysanthis, J. Newman, M. Wood-Vasey), \$1.6M (*\$1.1M direct*), Sept 2010 – Sept 2015.

“NSF CAREER: Data-Driven Bottom-Up Humanoid Articulations”, NSF CAREER Award IIS-0952720, PI, \$546K (*\$385K direct*), April 2010 – March 2015.

“Geriatric Research in Ambulatory and Cognitive Excellence (GRACE)”, University of Pittsburgh Research Council’s Multidisciplinary Small Grant Program, Co-PI (C. Rosano PI; other co-PI W. Layton), \$150K (*\$150K direct*), July 2009 – June 2012.

“Immersive Software Engineering”, Pitt Provost’s Advisory Council on Instructional Excellence (ACIE) Innovation in Education grant, PI, \$16K (*\$16K direct*), May 2009 – April 2010.

Funded Research Experiences for Undergraduates (REU), Training Programs, and Workshops

American Cancer Society (ACS) “Advancing Urban Students in Medicine (AUSM) Post-Baccalaureate Program”, Co-I (PI Paul Grippo; other Co-Is: J. Burdette, S. Kim, J. Kitajewski, A. Salahudeen, Y. Molina, L. Nonn, L.M. Tussing-Humphreys), \$660,000, 09/14/2026-09/13/2028.

“NSF REU – CDS&E High-performance Computing and Data-driven Modeling of Aircraft Contrails”, NSF-CBET-1854815, Co-PI (PI: R. Paoli), \$16K, June 2020–May 2023.

“GPIP: Creating a UIC De-identified Head & Neck Cancer Repository”, UIC CoE Guaranteed Paid Internship Program, support for 3 undergraduate students, PI, July-Aug 2019.

“Visualizing Social Services in Englewood”, PI, The Joseph and Bessie Feinberg Foundation, \$16K, May 2017- May 2018

“NSF WORKSHOP: Doctoral Colloquium at IEEE VIS 2016”, NSF-IIS- 1647803, PI, \$20.8K (*\$20.8K direct*), July 2016–June 2017.

“CRA CREU-W Collaborative Research Experience for Undergraduates”, Computing Research Association, \$10.5K, Sept 2015–Apr 2016.

“NSF WORKSHOP: Doctoral Colloquium at IEEE VIS 2015”, NSF IIS-1540159, PI, \$20.8K (*\$20.8K direct*), Apr 2015–Apr 2016.

“NSF REU – CAREER: Data-Driven Bottom-Up Humanoid Articulations”, NSF IIS-1340866, PI, \$12.8K (*\$12.8K direct*), April 2013–May 2014.

“NSF REU – CAREER: Data-Driven Bottom-Up Humanoid Articulations”, NSF IIS-1241554, PI, \$16K (*\$13K direct*), May 2012–May 2013.

“NSF WORKSHOP: Doctoral Colloquium at IEEE VisWeek 2011”, NSF IIS-1139350, Co-PI (R. Kosara, PI; other co-Pis E. Zhang, T.J. Jankun-Kelly), \$20K (*\$20K direct*), Aug 2011–Aug 2012.

“NSF REU – CAREER: Data-Driven Bottom-Up Humanoid Articulations”, NSF IIS-1130458, PI, \$16K (*\$13K direct*), Apr 2011–Apr 2012.

Outreach

- 2015- Multiple outreach demonstrations of EVL technology to K-12, college students and their families,
to date to state, city and University of Illinois administration officials
- Faculty research mentor to more than 15 UIC undergraduates, 60% of whom are CS minorities,
2015-to date
- Founder and organizer of a mentoring network for female researchers in visualization, Oct 2015
- GHC co-chaperone to a cohort of 40 UIC CS female undergrads, Oct 2015
- CRA-W REU faculty mentor to three minority students, Sep -May 2016
- 2013 Organized and ran a Hands-On-Science Animation Bootcamp workshop for 20 under-represented
and under-privileged high-school students; excellent reviews, May
- 2012 Organized and ran the Pitt Women in Computer Science “Mentoring Lunch”, 14 participants (20%
participation rate), Oct
- Co-Organized the “Lunch with the Industry and National Labs” event at IEEE VisWeek’12, 100
participants, Oct
- Co-organized and ran the “Lunch with the Mentors” event at IEEE VisWeek’12, 100 participants,
Oct
- Scientific Visualization outreach presentation (w/ VisLab), Pittsburgh Academy for Science and
Technology, 100 participants, Jan
- 2011 Created and organized the “Lunch with the Mentors” mentoring system at IEEE VisWeek’11, 150
participants, Oct
- 2010 Created, organized and ran the Technology Leadership Initiative VideoGame Design and
Implementation workshop (w/ VisLab) for 18 under-represented and under-privileged elementary
school students; excellent reviews, Feb
- Created, organized and ran the Tech Divaz Build a Computer workshop (w/ Women in Computer
Science) for the Technology Leadership Initiative; 18 participants, excellent reviews, June
- 2009 Worked with the Technology Leadership Initiative organizer, T. Groover, to revise a Google RISE
small grant proposal to support a diversity summer camp, March; awarded (\$5K).
- Visualization and Computational Modeling for Science and Engineering presentation, Technology
Leadership Initiative, 25 participants, May

- 2008 Visualization and Computational Modeling for Science and Engineering presentation, Technology Leadership Initiative (Pitt CS Diversity program, reaching to under-represented African-American elementary and highschool students), 25 participants, May
- 2005 Women in Computer Science coordinator, Brown University; launched and coordinated the
- 2007 graduate student arm of the organization, 20 graduate members, Feb

Popular Press Recognition, Magazine/Journal Covers, and Textbook Inclusions

Image from contrail digital twin work J44 included in the IEEE Computing Edge magazine, July 2024 issue.

UIC Today, R. Mitchum, "[Pilot research institutes kindle interdisciplinary activity across UIC](#)", Apr. 12, 2024.

UIC Today, R. Mitchum, "[NIH grant expands UIC brain bank into citywide effort to study epilepsy, brain cancer](#)", Nov 6, 2023.

"Kiviat defense" project image featured on the cover of the Journal of Imaging Science and Technology, Vol 67 No 6 Nov/Dec. 2023.

UIC College of Engineering Newsletter, D. Brazy, "[2023-2024 University Scholars](#)", July 2023.

Textbook inclusions: J34 and J42 work included in B. Preim, R. Raidou, N. Smit, K. Lawonn, "[Visualization, Visual Analytics and Virtual Reality in Medicine](#)" 1st Edition - May 15, 2023, Elsevier

UIC College of Engineering, UIC CS News Stories, A. Poet, "[Liz Marai wins Test of Time Award](#)", Aug 2021

UIC CS News Stories, A. Poet, "[Data visualizations unite water and air](#)", June 2021

University of Illinois Cancer Center, J. Carey, "[Computers aiding cancer survival, reducing treatment side effects](#)", June 2021

UIC Today, S. Parmet, "[Maximizing cancer survival, minimizing treatment side effects with AI](#)", May 2021

UIC CS News Stories, A. Poet, "How do Values Influence Stay at Home Attitudes During the Covid-19 Health Crisis", June 2020 <https://cs.uic.edu/news-stories/how-do-values-influence-stay-at-home-attitudes-during-the-covid-19-health-crisis/>

UIC Cancer Center News, C. Colvin, "Marai developing computer programs to aid cancer patients", Nov 2018 <http://cancer.uillinois.edu/marai-developing-computer-programs-to-aid-cancer-patients/>

UIC News, S. Parmet, "NSF Grant to Fund Advancing Computer Platform", Oct 2018 <https://today.uic.edu/nsf-grant-to-fund-advanced-deep-learning-and-visualization-computing-platform>

UIC News, M. Brown, “Students Honored in VAST Challenge”, Oct 2017
<https://today.uic.edu/files/2017/10/10-04-17-newscenter.pdf>

“RemBrain” project images featured on the cover of the Journal of Imaging Science and Technology, Vol. 61, No. 6, Nov. 2017

“Data Visualization & Exploration Tools” Bio-IT World 2017 podcast, Jan 2017
<https://soundcloud.com/chi-podcasts/bit-pod-marai/s-nNPPn>

“Cavern Halos” project image featured in the Computing Research Association Newsletter and call for collaborative REU proposals, Apr 2017

“Tensor Descriptors” project images featured on the cover of the Journal of Imaging Science and Technology, Vol. 60, 2016

CS Degree Hub’s “The 50 Most Innovative Computer Science Departments in the U.S.” (for my group’s work in biology visualization while at Pitt), Y. Laher, December 2014.
<http://www.computersciencedegreehub.com/50-innovative-computer-science-departments/>

“VisWeek 2011: New Compass Activities for New Researchers”, A. Tarbox, Conduit Vol. 21(1), May 2012

“Pitt scientists get grant to catalog space data”, D. Erdley, Pittsburgh Tribune-Review, July 2011

“Pitt Researchers Tackle Flood of Space Data With \$1.6 Million Project”, M. Kelly, University of Pittsburgh University Times, May 2011

“Comp sci adds another CAREER award”, University of Pittsburgh University Times, Apr 2010

“Rethinking Computer Science education”, M. Lane-Ogden, University of Pittsburgh Teaching Times, Sept 2009

“Making moves: Pitt experiment tracks body shifts”, M. Cronin, Pittsburgh Tribune-Review, March 2009

“Transformational Research through Modeling and Simulation: Pitt Researchers Tackle Some of the Most Complex Issues of Our Times in New Center”, R. Frazier, Pitt Center for Simulation and Modeling Inaugural Brochure, October 2008

“CS224 Final Projects Win @ ACM SIGGRAPH ‘04”, S. Howe, Conduit Vol 13(1), Aug 2004

Invited Presentations

- 2026 EuroGraphics VCBM 2026, Sept 2026, ~50 attendees, Ljubljana, Slovenia
 “ConGAT: Context-Aware Graph Attention Visual Analysis for 3D Region of Interest Discovery in Multiplexed Microscopy Images”
- EuroGraphics VCBM 2026, Sept 2026, ~50 attendees, Ljubljana, Slovenia
 “MultiPASE: Shape-Aware Comparative 3D Genome Analysis”

- ISMB Keynote, July 2026, main conference 2K attendees, Washington DC
“Healthy Skepticism in AI: a BioVis Research Agenda”
- BioVis Meetups, Apr 2026, webinar, ~20 attendees live, recorded
“Recent Trends and Challenges in Biological Data Visualization”
- Eurogin Medical Congress, March 2026, 2K attendees, Vienna, Austria
“Web-based Survival and Toxicity Prediction Systems”
- 2025 IEEE EMBC podium presentation, June 2025, ~200 attendees, Copenhagen, Denmark
“mEnergy: Development of a Novel mHealth Multi-device Platform for Near Real-time Remote Assessment of Energy Disorders”
- Visual Analytics in Healthcare 2025 Keynote, Nov 2025, ~200 attendees. Vienna, Austria
“The Blackbox Patient and the Power of Many”
- 2024 Dagstuhl Pandemic Vis seminar, Feb 2024, ~40 attendees
“Identifying user groups, tasks, and visual media in COVID-19 data visualization projects”
- UIC Health Data Science Research bootcamp, Aug 14th 2024, ~30 attendees
“Introduction to NIH Funding Programs”
“Writing a Successful NIH Proposal”
- IEEE VIS 2024 session co-chair, Oct 2024, ~1000 virtual attendees
“Test of Time Awards Vis/SciVis”
- University of Texas, MD Anderson Cancer Center, Houston TX, Nov 12th 2024, ~30 attendees
“Bridging Human-Centered Data Science with Real World Problems”
- UIC/Google Health Summit, Chicago IL, Nov 21st 2024, ~30 attendees
“Bridging Human-Centered Data Science with Real World Problems”
- UIC College of Engineering Dean visit, CS, Nov 22nd 2024, ~50 attendees
“Bridging Human-Centered Data Science with Real World Problems”
- 2023 NYU Tandon School of Engineering, Computer Science Engineering department, March 8 2023, ~25 attendees
“Bridging Visual Computing Theory with Real World Data & Problems”
- UIC Chancellor Elect Miranda College of Engineering visit, EVL, May 2023, ~60 attendees
“Faculty Research Lightning Talk”
- IEEE VIS 2023, Workshop on Visualization for Pandemic and Emergency Responses, Melbourne, Australia, Oct 2023, ~30 attendees
“A Lens to Pandemic Stay at Home Attitudes”
- IEEE VIS 2023 session chair, Melbourne, Australia, Oct 2023, ~1500 attendees
“Best Paper Awards”
- IEEE VIS 2023 session co-chair, Melbourne, Australia, Oct 2023, ~1500 attendees
“Test of Time Awards Vis/SciVis”

- Dagstuhl BioVis seminar, Nov 2023, ~40 attendees
“Towards a syllabus for teaching biological data visualization”
- 2022 Utah Scientific Computing Institute seminar, Jan 26 2022, ~50 virtual attendees
“What Is a Good Visual Explanation of AI?”
- WinterGraph’22 (Pan Austrian research meeting), March 7 2022, ~70 attendees, Kitzsteinhorn, Austria
“Visual Computing at the Electronic Visualization Laboratory”
- TU Wien, May 13 2022, ~40 attendees, Vienna, Austria
“Grounding Data Vis Theory on Real-World Data and Problems”
- University of Vienna, May 16 2022, ~20 attendees, Vienna, Austria
“Grounding Data Vis Theory on Real-World Data and Problems”
- VRVis Center, May 19 2022, ~80 attendees, Vienna, Austria
“Immersive Analytics at the Electronic Visualization Laboratory”
- Session Co-Chairing, EuroVis 2022, ~300 attendees, June 14 2022, Rome, Italy
“Best Papers Session”
- Opening session, EuroVis 2022, ~300 attendees, June 14 2022, Rome, Italy
“Full Papers Program Opening”
- UIC CS Doctoral Recruiting Webinar, Nov 2nd 2022, 27 attendees, 450 views/month
“Applying to the Doctoral Program @ UIC CS”
- UIC CS Doctoral Recruiting Webinar, Nov 2nd 2022, 27 attendees, 450 views/month
“Visual Computing at UIC CS”
- UIC CS Introduction to Data Science Workshop for UIC CS freshmen and sophomores, Nov 12th 2022, ~50 attendees
“Visual Data Science”
- 2021 University of Illinois at Chicago, Provost’s “E+W Research Mixer”, Chicago, Jan 2021
“Data Visualization for the Life Sciences”, virtual
- EuroVis 2021, Zurich, Switzerland, June 2021
“Paper and Reviewer Awards”, ~300 virtual attendees
- ISMB 2021, BioVis COSI, July 26 2021
“RuleBender: Test of Time Reflection”, 360 virtual attendees
- Dagstuhl Seminar 21401 Visualization of Biological Data - From Analysis to Communication, Oct 4 2021,
“Collaboration in a Test of Time Project”, ~45 hybrid attendees
- UI Cancer Center, Dec 2 2021,
“Human-Machine Analysis of Longitudinal Symptoms in Cancer Therapy”, ~30 virtual attendees

- NYU CSE seminar, Dec 9 2021, ~30 hybrid attendees, NYC, NY
What Is a Good Visual Explanation of AI?
- 2020 University of Illinois Cancer Center: Cancer Prevention and Control Virtual Retreat, Chicago, June 2020,
“Predicting the Quality of Life of Head and Neck Cancer Patients Based on Disease Location and Extent”, virtual
- EuroVis 2020, Norrkoping, Sweden, June 2020
“EuroVis Shorts Program: Notes from the Chairs”, virtual
- IEEE International Conference on AI and VR (IEEE AIVR 2020), Utrecht, The Netherlands, Dec 2020,
“Immersive Analytics at the Electronic Visualization Laboratory”, panel, virtual
- 2019 ISMB 2019, Basel, Switzerland
“Biological Large Scale Data Visualization”, 90 people
- University of Illinois at Chicago, Faculty Early Career Development Workshop, Chicago, Oct 2019
“Funding and Handling Setbacks”, 30 people
- 2018 Shonan Seminar No 128, Shonan Village, Japan, Nov 2018
“Spatial Patient Similarity in Precision Medicine for Oncological Radiotherapy”, 25 people
- IEEE VIS’18, Berlin, Germany, Oct 2018
“Precision Risk Analysis Using Nomograms”, 300 people
- IEEE VIS’18, Berlin, Germany, Oct 2018
“Details-first, Show Context, Overview Last”, 200 people
- IEEE VIS’18, Berlin, Germany, Oct 2018
“Handling Paper/Proposal Rejections”, Success panel, 200 people
- BIRS Restructuring VIS for the future, Banff, Canada, June 2018
“Restructuring VIS for the future”, 45 people
- ISMB 2018, Chicago, IL, July 2018
“Introduction to Biological Data Visualization” tutorial, 65 people
- APTESC 2018, Argonne Training Program on Extreme Scale Computing, Aug 2018
“Electronic Visualization”, 100 people
- Dagstuhl Biological Data Visualization Symposium, Germany, Apr 2018
“Theoretical Foundations of BioNetwork Visualization”
- Dagstuhl Foundations of Data Visualization Symposium, Germany, Jan 2018
“Activity-Centered Design”
- 2017 IEEE VIS 2017, Oct 2017
“Activity-Centered Domain Characterization”

- IEEE VIS 2017, Oct 2017
“Panel on Diversity in Vis” workshop
- IEEE VIS 2017, Oct 2017
“Panel on Interdisciplinary and Applied Visualization Research”
- National Institutes of Health, Bioinformatics and Computational Biosciences Branch NIAID, June 2017
“Big Display Data Visualization at the Electronic Visualization Lab”
- U Chicago BioJam, Chicago, Sep 2017
“Visual Computing at the Electronic Visualization Laboratory”
- University of Oregon, Eugene, Feb 2017
“Distinguished Math Lecture for Undergraduates: Computer Graphics for Science”
- ISMB Great Lakes Bio, Chicago, May 2017
“Tutorial: Introduction to Biology Visualization”
- ISMB Great Lakes Bio, Chicago, May 2017
“Biology Visualization at the Electronic Visualization Lab”, w/ A. Forbes
- Bio-IT World, Boston, May 2017
“Big Display Visualization of Bioinformatics Data”
- National Institutes of Health, Bioinformatics and Computational Biosciences Branch NIAID, June 2017
“Big Display Data Visualization at the Electronic Visualization Lab”
- 2016 Dagstuhl Multi-valued Symposium, Germany, Apr 2016
“Spatial-Nonspatial Integration in Engineering”
- IEEE Virtual Reality Workshop on Immersive Analytics, Greenville SC, Mar 2016
“Immersive Analytics at the Electronic Visualization Lab”
- Visual Data Analysis 2016, San Francisco CA, Feb 2016
“Visual Descriptors for Dense Tensor Fields in Computational Turbulent Combustion”
- Electronic Imaging 2016, San Francisco CA, Feb 2016
“Cavern Halos: Exploring Spatial and Nonspatial Cosmological Data in an Immersive Virtual Environment”
- 2015 DePaul University, Dept of Computer Science, Chicago IL, Oct 2015
“Geometric Modeling and Visualization for Science”
- University of Houston, Dept of Computer Science, Houston TX, Oct 2015
“Geometric Modeling and Visualization for Science”
- Grace Hopper Conference, Houston TX, Oct 2015
“UIC BRAID: aiming for 30%”, panel

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- NSF/NIH SAMSI Workshop (20% acceptance), Raleigh, NC, July
“SAMSI DMS Project: SMART”
 - BioVis’15, Dublin, Ireland, July
“BioVis’15 Awards Ceremony and Closing Remarks”
 - EuroVA, Sardinia, Italy, May
“Visual Scaffolding in Integrated Spatial and Nonspatial Visual Analysis”
 - UIC Bioengineering Seminar, Feb
“Geometric Modeling and Visualization for Science”
 - 2014 Dagstuhl Scientific Visualization Seminar, Germany, June
 - ...
 - Dagstuhl Tensor Visualization Symposium, Germany, Feb
 - University of Maryland Baltimore County, Department of Information Systems, Jan
 - University of Maryland College Park, Department of Computer Science, Jan
 - 2013 Virginia Tech, Department of Computer Science, Nov
 - IEEE VIS SciVis 2013, Atlanta, GA, Oct
 - ATR Institute, Robotics Seminar, Nara, Japan, Sept
 - MICCAI MedMesh 2013, Nagoya, Japan, Sept
 - EuroGraphics VMV 2013, Lugano, Switzerland, Sept
 - New York University Poly, Department of Computer Science, May
 - Tufts University, Department of Computer Science, March
 - 2012 University of Pittsburgh, Department of Biomedical Informatics, Oct
 - University of Maryland, Baltimore County, Oct
 - Pittsburgh Academy for Science and Technology (w/ VisLab), Pittsburgh PA, Jan
 - CHIA Dataverse Colloquium (w/ cs1630 students), Pittsburgh PA, Mar
 - 2011 Dagstuhl Tensor Symposium, Germany, Dec (prestigious, invitation-only CS workshop sponsored by the German federal government)
 - IEEE VisWeek 2011, Providence, RI, Oct
 - AEGIS Colloquium (w/ students T. Luciani and R. Hachey), Pittsburgh PA, July

- 2010 Carnegie-Mellon Bioimaging Day, Pittsburgh PA, March
- Tech Divaz camp, Technology Leadership Initiative, Pittsburgh PA, June
- Diversity Workshop (w/ VisLab), Technology Leadership Initiative, Pittsburgh PA, Feb
- 2009 Georgia Tech & Carnegie-Mellon University Graphics Retreat, Pittsburgh PA, Nov
- BMES 2009, Pittsburgh PA, Oct
- University of Minnesota, Computer Science, Graphics Group Seminar, Sept
- EMBC 2009, Minneapolis MN, Sept
- ACM SIGGRAPH Talks, New Orleans LA, August
- Dagstuhl Tensor Symposium, Germany, July (prestigious, invitation-only CS workshop sponsored by the German federal government)
- Eurographics/IEEE Symposium on Visualization, Berlin, Germany, June
- University of Pittsburgh, Center for Simulation and Modeling, January
- Carnegie Mellon University, Graphics Group Seminar, March
- 2008 San Francisco University, Pre-Orthopaedic Research Society Symposium, March
- University of Pittsburgh – Carnegie Mellon University, Bioengineering and Bioinformatics Summer Institute, June
- Pitt CS Technology Leadership Initiative, July
- University of Pittsburgh – Carnegie Mellon University, Computational Biology Program, November
- 2007 Carnegie Mellon University, Robotics Institute Faculty Lunch Meeting, November
- University of New Hampshire, Computer Science, April

Professional Service

- 2025-2026 IEEE VIS'26 Area Chair, Applications
- NIH Chartered Study Section member
- IEEE Computer Graphics and Applications Associate Editor

	External reviewer TVCG
2024- 2025	IEEE VIS'25 Area Chair, Applications
	IEEE VIS Test of Time SciVis 2024 Co-Chair
	NIH Chartered Study Section member
	IEEE Computer Graphics and Applications Associate Editor
	IEEE VIS VEC Committee Member
	ISMB BioVis Steering Committee Member
	VCBM Program Committee Member
	IEEE VIS'24 Program Committee Member
	External reviewer TVCG, CHI, JAMIA, Nature Communications
2023- 2024	IEEE VIS 2023 Best Paper Awards Chair
	IEEE VIS Test of Time SciVis 2023 Co-Chair
	NIH Study Section member
	Frontiers in Bioinformatics Associate Editor
	IEEE Computer Graphics and Applications Associate Editor
	IEEE VIS VEC Committee Member
	ISMB BioVis Steering Committee Member
2022- 2023	EuroVis 2023 Best Paper Committee Chair
	Frontiers in Bioinformatics Associate Editor
	VIS VEC Committee Member
	Steering Committee Member, BioVis 2023
	VCBM Program Committee member
	IEEE VIS 2023 Program Committee member
	NIH Study Section member

- 2022 Program Co-Chair, EuroVis'22 Full Papers
(sabbatical) Guest Editor, Computer Graphics Forum
- VIS Executive Committee (VEC)
- Associate Editor, Frontiers in Bioinformatics
- Steering Committee, BioVis 2022-2023
- 2021 Program Co-Chair, EuroVis'21 Full Papers
- VIS Executive Committee (VEC)
- VIS Best Paper Committee
- Associate Editor, Frontiers in Bioinformatics
- Guest Editor, Computer Graphics Forum
- Steering Committee, BioVis 2021
- Organizer, Dagstuhl Seminar
- Program Committee, EuroVA'21
- Session Co-Chair, EuroVis'21 Capstone
- Program Committee, VCBM 2021
- Program Committee, VIS Short Papers 2021
- Reviewer, VIS 2021, CHI 2021, EuroVis 2021, Computers & Graphics
- 2020 Chair, EuroVis'20 Short Papers
- Associate Editor, Frontiers in Bioinformatics
- BioVis 2020 Steering Committee
- VAST 2020 Best Paper Award Committee
- Program Committee, IEEE VIS SciVis
- Program Committee, IEEE VIS Short Papers
- Program Committee, Electronic Imaging Visual Data Analysis
- Program Committee, 10th Eurographics Workshop on Visual Computing for Biology and Medicine (VCBM)

- NSF Computing Innovation Fellows 2020 reviewer
- NIH panelist
- Reviewer CHI 2020, Computer Graphics Forum
- 2019 Chair, EuroVis'19 Short Papers
- Steering Committee, BioVis
- ISMB COSI representative, BioVis
- Program Committee, IEEE VIS SciVis
- Program Committee, IEEE VIS Short Papers
- Program Committee, 9th Eurographics Workshop on Visual Computing for Biology and Medicine (VCBM) 2019
- Program Committee, EuroVis'19 Posters
- Program Committee, Electronic Imaging Visual Data Analysis
- Editor Special Issue on Virtual Environments, Frontiers in Robotics and AI
- Session Chair, BioVis ISMB COSI 2019
- NIH panelist
- Austrian Research Agency reviewer
- TVCG, CGF, MDPI, Frontiers reviewer
- ISMB Tutorial co-organizer
- 2018 Chair, EuroVis'18 STAR (State of the Art Reports)
- Program Committee, Electronic Imaging Visual Data Analysis 2018
- Steering Committee, BioVis
- Dagstuhl seminar on BioVis Co-organizer (w/ K. Nieselt, N. Gehlenborg, J. Aerts)
- Shonan Seminar 128 Co-organizer (last minute replacement for organizer who could not travel)
- Editor Special Issue on Virtual Environments, Frontiers in Robotics and AI
- Program Committee, IEEE VIS SciVis
- Program Committee, BVDA 2018

- External reviewer, IEEE VIS VAST
- Session Chair, BioVis COSI 2018
- Session Chair, SciVis 2018
- ISMB Tutorial co-organizer
- 2017 Steering Committee, BioVis
- Program Committee, EuroVis 2017 STAR
- Program Committee, Electronic Imaging Visual Data Analysis 2017
- External reviewer IEEE VIS SciVis, IEEE VIS VAST, IEEE VIS InfoVis
- IEEE TVCG reviewer
- NIH Panelist
- Bio-IT World 2017 session chair
- ISMB Great Lakes Bio 2017 session co-organizer (w/ A. Forbes)
- 2016 Conference General Co-Chair, BioVis 2016
- EuroVis 2016 Program Committee
- EuroVis 2016 Short Papers Program Committee
- IEEE Virtual Reality 2016 Workshop on Immersive Analytics, Co-organizer and Co-Chair
- SuperComputing 2016 Visualization Showcase Program Committee
- IEEE VIS 2016 Organizing Committee, Doctoral Colloquium Co-Chair
- External IEEE VIS reviewer (SciVis, VAST)
- NSF Panelist x 3 times
- 2015 Doctoral Colloquium Chair and Organizing Committee, IEEE VIS 2015
- Short Papers Program Committee, EuroVis 2015
- Program Committee, EuroVis 2015
- Conference General Co-Chair, BioVis 2015
- Keynote Session Chair, BioVis 2015
- External paper reviewer, IEEE VIS SciVis 2015, IEEE VIS InfoVis 2015, IEEE VIS VAST 2015

NSF Panelist

2014 Program Chair, BioVis 2014

Associate Editor, BMC Bioinformatics

SciVis Publicity Chair, Organizing Committee, IEEE VIS 2014

Program Committee, IEEE VIS 2014

Program Committee, EuroVis 2014

Program Committee, CompImage 2014

Program Committee, IADIS International Conference on Computer Graphics, Visualization, Computer Vision and Image Processing

2013 Program Chair, IEEE BioVis 2013

Program Committee, IEEE SciVis 2013

Papers Session Chair, IEEE SciVis 2013

Program Committee and Organizing Committee, IEEE BioVis 2013

Program Committee, MICCAI Workshop on Mesh Processing

Program Committee, IADIS International Conference on Computer Graphics, Visualization, Computer Vision and Image Processing

Paper reviewing for IEEE TVCG, IEEE Vis, IEEE InfoVis, EuroVis

NSF Panelist

NSF Panel Ad-hoc Reviewer (external)

Scholarship Application Committee, Grace Hopper Celebration of Women in Computing Conference 2013

2012 Guest-Editor, IEEE Computer Graphics and Applications, Special Issue, Biomedical Applications: From Data Capture to Modeling

Program Committee and Organizing Committee, IEEE SciVis (Vis) 2012

Papers Session Chair, IEEE SciVis (Vis) 2012

Chair, Compass Committee (see 2011) IEEE VisWeek 2012

Organizing Committee, IEEE BioVis 2012

Co-Chair, Industry Committee IEEE BioVis 2012

Program Committee, IADIS International Conference on Computer Graphics, Visualization, Computer Vision and Image Processing

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- Program Committee, MICCAI Workshop on Mesh Processing
- Scholarship Application Committee, Grace Hopper Celebration of Women in Computing Conference
- Paper reviewing for IEEE TVCG, IEEE Vis, IEEE InfoVis, EuroVis, IEEE Computer Graphics and Applications, PacificVis
- 2011 Chair, Doctoral Colloquium, IEEE VisWeek 2011; co-run the Doctoral Colloquium Workshop
- Organizing Committee, IEEE VisWeek 2011; beside O.C. duties, created and organized the Compass activities, a highly successful set of networking events for visualization researchers and practitioners.
- Panel Organizer, IEEE VisWeek 2011
- NSF Graphics & Visualization Panel
- Paper reviewing for IEEE Vis
- 2010 NSF Graphics & Visualization Panel
- ACM SIGGRAPH Bioengineering Jury
- Paper reviewing for Journal of Biomechanics, IEEE Vis
- Scholarship Application Committee, Grace Hopper Celebration of Women in Computing
- 2009 Paper reviewing for IEEE Vis, IEEE Trans. Biomedical Engineering
- Scholarship Application Committee, Grace Hopper Celebration of Women in Computing
- 2008 Paper reviewing for ACM SIGGRAPH, Journal of Biomechanics
- External proposal reviewing for NSF
- Scholarship Application Committee, Grace Hopper Celebration of Women in Computing
- 2007 Scholarship Application Committee, Grace Hopper Celebration of Women in Computing
- Paper reviewing for IEEE Trans. On Medical Imaging, IEEE Trans. On Visualization and Computer Graphics, ACM SIGGRAPH, Journal of Biomechanics
- pre-2007 Paper reviewing for IEEE Trans. On Medical Imaging, IEEE Trans. On Visualization and Computer Graphics, ACM SIGGRAPH (Sketches and Posters), Journal of Biomechanics
- ACM International Programming Competition'97, S-E European Regional Organizing Committee

Teaching and Research Advising

Honors to my students (for work done together)

UIC College of Engineering Excellence in Teaching Award 2025 to N. Nipu
 BioMedVis Challenge Award of Merit 2025 to H. Fathollahian, N. Nipu, S. Zhao
 UIC College of Engineering Exceptional Research Promise award 2024 to A. Wentzel
 UI Cancer Center Travel award 2023 to C. Floricel
 UIC Honors College Research Grant 2023 award to F. Kamleh
 Grace Hopper 2023 Scholarship to S. Srabanti
 IEEE VIS 2022 Doctoral Colloquium selection to J. Trelles
 UIC Graduate College Outstanding Dissertation Award 2021 to E. Tardini (advisor: X. Zhang)
 ISMB 2021 Test of Time Award to A. Smith, W. Xu, Y. Sun
 UIC CS Graduate Teaching Assistant Award 2020 to J. Trelles
 UIC Chancellor's Undergraduate Research Award 2020-2021 to A. Venturella, M. Perkowski, J. Vega
 UIC Chancellor's Undergraduate Research Award 2019 to M. Tran
 NSF Graduate Research 2019 Honorable Mention to A. Burks
 IEEE VIS 2017 Doctoral Colloquium selection to T. Luciani
 IEEE VAST Challenge 2017 Honorable Mention MC2 to J. Castor, J. Borowicz, A. Burks, M. Thomas, T. Luciani
 IEEE VAST Challenge 2017 Honorable Mention MC3 to V. Mahida, B. Kupiec, A. Burks, T. Luciani
 IEEE VGTC VPG 2016 Outstanding Award to my cs526 students
 Tapia 2016 Fellowship to B. Habtegiorgis
 Tapia 2016 Fellowship to C. Uribe
 UIC CS Scholars' 2016 Fellowship to J. Tapia
 IEEE VIS 2016 Doctoral Colloquium selection to C. Ma
 Computing Research Association 2016 research fellowship to B. Habtegiorgis, J. Rodriguez, C. Uribe
 IEEE VIS 2013 Doctoral Colloquium selection to Md.A. Haque
 NSF Graduate Research 2013 Fellowship to T. Luciani
 BioVis 2013 Contest Outstanding Paper award to J. Wenskovitch, T. Luciani
 LDAV 2012 Outstanding Paper award to T. Luciani, S. Myers
 BioVis 2011 Outstanding Paper award to A. Smith, W. Xu

Ph.D. Graduates Nafiul Nipu, 2025 (Revelio Labs, Data Science)
 Sanjana Srabanti, 2025
 Andrew Wentzel, 2024 (Epsilon, Data Science)
 Juan Trelles, 2023 (Epsilon, Data Science)
 Timothy Luciani, 2019 (Conversant, Data Science)
 Chihua Ma, 2018 (Conversant, Data Science)
 Abed Haque, 2014 (Mathworks)

M.Sc. Graduates At UIC:
 Francesco Botto (E8o Group)
 Xuchen Frank Wang
 Hrushi Joshi
 Farah Kamleh (UIC PhD program, declined)

Nikita Thakur (UI Cancer Center)
 Andrew Wentzel (UIC PhD program)
 Peter Hanula (United Airlines, Data Science Center)
 Juan Trabucco Trelles (UIC PhD program)
 Ashwin Venkatamaram (Amazon)
 Filippo Pellolio (HERE, then Google)
 Davide Tantillo (n/a)
 Andrea Rottigni (HylaSoft)
 Jaspreet Kaur Sohal (Rhodium Group)
 Sai Phaltankar (BMW)
 Shubadra Govindan (Wayfair)
 Yashika Goyal (Amazon Alexa)
 Naveen Kumar (n/a)
 Pavana Doddi (n/a)
 Ganesh Jagadeesan (Dataminr)
 Elisa Tardini (Amazon Search)
 Gino Ureta (n/a)
 Parikshit Solunke (NYU CSE PhD program)
 Matthew Ziminski

At Pitt:

John Wenskovitch, 2014 (Virginia Tech & Allegheny College)
 Sean Myers, 2014 (Amazon)
 Adrian Maries, 2013 (Harvard, research staff)
 Rebecca Hachey, 2013 (Pitt Learning Research and Development Center)
 Adam Smith, 2012 (GDVis)
 Wen Xu, 2011 (Microsoft)

B.Sc. Graduates
(thesis/project)

At UIC:

Farah Kamleh 2022
 Michael Tran 2020
 Joshua Castor 2019 (Relativity, Inc)
 Michal Bochnak 2018 (UIC MS program)
 Evan Kreft 2017 (LogicGate)
 Revanth Reddy 2016 (UIUC grad program)
 Peter Hanula 2016 (UIC grad program)
 Brook Habtegiorgis 2016 (Oracle)
 Carlos Uribe 2016 (Chase)
 Kamil Piekutkowski 2016 (Cummins Allison)
 Joshua Rodriguez 2015 (Lockheed Martin)

At Pitt:

Mary Letera 2014 (Philips)
 Zach Sadler 2014 (Adknowledge)
 Sean Myers 2013 (Pitt CS grad program)
 Tim Luciani 2011 (**NSF Graduate Research Fellowship**, UIC CS)
 Daniel Oliphant 2010 (Google)

Victor Powell 2010 (YinzCam)
 Matthew Seiler 2010 (Bechtel Corporation)
 Matthew Czarnek 2010 (Czarnek and Orkin Labs)
 Stephen Lauck 2009 (Force and Form)
 John Conomikes 2008 (CMU Entertainment Technology Center)

Graduate Research Advising

2025-2026	Sanjana Srabanti (doctoral 6th year), CS, TA/RA (co-advised Fabio) Nafiul Nipu (doctoral 6th year), CS, RA Siyuan Zhao (doctoral 2nd year), CS, RA Hossein Fathollahian (doctoral 1st year), CS, TA/RA Comm. Dept Francesco Botto (MS), CS, RA Xuchen Frank Wang (MS), CS, RA Hrushi Joshi (MS), CS, RA
2024-2025	Andrew Wentzel (doctoral), CS, RA Carla Floricel (doctoral), CS, self-supported Sanjana Srabanti (doctoral), CS, TA (co-advised Miranda) Nafiul Nipu (doctoral), CS, RA/TA Siyuan Zhao (doctoral), CS, RA Nasibeh Heshmati (doctoral), CS, RA (successful transfer out to theory group) Hossein Fathollahian (doctoral), CS, TA/RA Francesco Botto (masters), CS, RA
2023-2024	Andrew Wentzel (doctoral), CS, RA Carla Floricel (doctoral), CS, RA Sanjana Srabanti (doctoral), CS, RA/TA (co-advised Miranda) Nafiul Nipu (doctoral), CS, TA Siyuan Zhao (doctoral), CS, TA/RA Nasibeh Heshmati (doctoral), CS, TA/RA Hossein Fathollahian (doctoral), CS, TA/RA Farah Kamleh (masters), CS, TA
2022-2023	Juan Trabucco Trelles (doctoral), CS, RA Andrew Wentzel (doctoral), CS, RA Sanjana Srabanti (doctoral), CS, TA/RA (co-advised Fabio Miranda) Carla Floricel (doctoral), CS, RA Nafiul Nipu (doctoral), CS, RA Matt Ziminski (masters), CS Nikita Thakur (masters), CS
2021-2022 (sabbatical)	Juan Trabucco Trelles (doctoral 6th year), CS, RA Andrew Wentzel (doctoral 4th year), CS, RA Sanjana Srabanti (doctoral 3rd.5 year), CS, TA/RA (co-advised Fabio) Carla Floricel (doctoral 3rd year), CS, RA Nafiul Nipu (doctoral 3rd year), CS, RA

2020-2021	Juan Trabucco Trelles (doctoral 4th year), CS, RA+TA Andrew Wentzel (doctoral, 1st year), CS, RA Sanjana Srabanti (doctoral 1st year), CS, RA Carla Floricel (doctoral 1st year), CS, TA+RA Md. Nafiul Nipu (doctoral 1st year), CS, TA+RA Pavana Doddi (masters), CS Naveen Kumar (masters), CS Parikshit Solunke (masters), CS Gino Uribe (masters), CS Elisa Tardini (masters), CS, RA joint w/ X. Zhang
2019-2020	Juan Trabucco Trelles (doctoral 3rd year), CS, TA Andrew Wentzel (masters), CS, RA Sanjana Srabanti (doctoral 1st year), CS, RA Carla Floricel (doctoral 1st year), CS, TA Md. Nafiul Nipu (doctoral 1st year), CS, TA Mirko Mantovani (masters), CS, - Ganesh Jagadeesan (masters), CS, RA
2018-2019	Timothy Luciani (doctoral, fourth year at UIC), CS, RA Juan Trabucco Trelles (doctoral 2nd year), CS, RA Andrew Wentzel (masters), CS, RA Ganesh Jagadeesan (masters), CS, RA Jaspreet Kaur Sohal (masters), CS, - Sai Phaltankar (masters), CS, TA Shubadra Govindan (masters), CS, - Yashika Goyal (masters), CS, -
2017-2018	Timothy Luciani (doctoral, 6th year), CS, NSF GRF Chihua Ma (doctoral, 6th year), CS, RA, co-advised w/ Bob Kenyon Juan Trabucco Trelles (doctoral, 1st year), CS, RA Manu Thomas (masters), CS, RA Peter Hanula (masters), CS, RA Adhokshith Datta (masters), CS, TA, RA Ramnarayan Vanya (masters), CS, RA
2016 - 2017	Timothy Luciani (doctoral, 5th year), CS, NSF GRF Chihua Ma (doctoral, 5th year), CS, RA, co-advised w/ Bob Kenyon Manu Thomas (masters), CS, RA Juan Trabucco Trelles (masters), CS, RA Peter Hanula (masters), CS, RA Mat Monford (doctoral), CS, RA w/ Brian Ziebart Sneha Tuteja (masters), CS, RA
2015 – 2016, at UIC	Timothy Luciani (doctoral, 4th year), CS, NSF GRF Chihua Ma (doctoral, 4th year), CS, RA, co-advised w/ Bob Kenyon Filippo Pellolio (masters), CS, RA Davide Tantillo (masters), CS, RA w/ Andy Johnson Andrea Rottigni (masters), CS, RA w/ Andy Johnson Shiwangi Singh (masters), CS, TA Ashwin Venkatamaran (masters), CS, RA

2013 – 2014, at Pitt	Abed Haque (doctoral, 6 th year), Tim Luciani (doctoral, 2 nd year), John Wenskovitch (doctoral, 3 rd year), Sean Myers (masters)
2012 – 2013	Abed Haque (doctoral, 5 th year), Adrian Maries (transfer to MSc program), Tim Luciani (doctoral, 2 nd year), John Wenskovitch (doctoral, 2 nd year), Sean Myers (masters) Directed study: Xiaoming Fan (doctoral 1 st year), Koonwah Chen (SIS masters)
2011 – 2012	Abed Haque (doctoral, 4 th year), Adrian Maries (doctoral, 4 th year), Adam Smith (masters), Tim Luciani (doctoral, 1 st year), Rebecca Hachey (masters) Directed study: John Wenskovitch (doctoral, 1 st year, co-advised)
2010 – 2011	Abed Haque (doctoral, 3 rd year), Adrian Maries (doctoral, 3 rd year), Adam Smith (masters), Wen Xu (masters 2011, Microsoft) Directed study: Callen Shaw (masters), Andrew Conn (masters)
2009 – 2010	Abed Haque (doctoral, 2 nd year), Adrian Maries (doctoral, 2 nd year), Yao Sun (doctoral, 2 nd year; <i>masters 2012, Amazon</i>), Wen Xu (masters)
2008 – 2009	Abed Haque (doctoral, 1 st year), Sriranjani Mandayam (doctoral, 1 st year, <i>masters 2010 School of Information Sciences</i>), Yao Sun (doctoral, 1 st year) Directed study: Wenting Xiong, David Krebs, Adrian Maries
2007 – 2008	Yinglin Sun (doctoral, 2 nd year, <i>masters 2011, N/A</i>) Directed study: Michael Lipschultz
Pre-2007	Directed study: Peter Sibley (Brown University), Phil Montgomery (Brown University)

Undergraduate Research Advising

2023-2024	David Rios (sophomore, GPIP) Rayyan Rashid (sophomore, GPIP) Yuseph Shilleh (sophomore, GPIP)
2022-2023	Bobo Lin (highschool student, Cancer Center summer program; gone to MIT CS major)
2021-2022 (sabbatical)	Farah Kamleh (senior) Paige Savarese (sophomore)
2020-2021	Anthony Venturella (senior) Jonathan Vega (senior, Native American) Marcin Perkowski (senior) Farah Kamleh (junior, HC) Gina Gerace (senior, HC) William Berios (Universidad Nacional de Ingenieria, Peru Student Research program, senior, Hispanic) (total: 6 REUs, four from under-represented groups)

2019-2020	Michael Tran (senior, CoE CURA) Shyam Patel (senior, -)
2018-2019	Michael Tran (senior transfer, CoE GPIP) Rafiya Awan (sophomore, CoE GPIP) Darian Danciu (sophomore, CoE GPIP)
2017-2018	Andrew Burks (senior, private donor) Isabel Lindmae (junior, private donor) Dimitar Kirilov (junior, NSF, w/ Dan Sandin) Bart Kupiec (junior, NSF, w/ Dan Sandin) Joshua Castor (junior, startup) Joe Borowicz (junior, NSF, w/ Barbara di Eugenio and Andy Johnson) Vijayraj Mahida (junior, NSF, w/ Barbara di Eugenio and Andy Johnson) (total: 7 REUs, one female)
2016-2017	Michal Bochnak (sophomore, Honors College) Andrew Burks (junior, NSF REU) Jacqueline Tapia (sophomore, NSF REU) Dennis McNamara (junior, NSF REU) Cassiano Sugiyama (senior, Brazilian Mobility Program) Tyrone Harris (junior, NSF REU) (total: five REUs, two Hispanic, one African American)
2015-2016, at UIC	Joshua Rodriguez (senior, NSF REU, co-advised w/ Lance Long, EVL) Carlos Uribe (senior, startup) Kamil Piekutowski (senior, NSF REU) Brook Habtegiorgis (junior, NSF REU) Evan Kreft (senior, NSF REU) Peter Hanula (senior, NSF REU) Revanth Reddy (senior) Nabeelah Khan (junior) (total: six NSF REUs, two Hispanic, one African American)
2013 -- 2014	Mary Letera, Tyler Raborn
2012 – 2013	Sean Myers, Zach Sadler
2011 – 2012	Tim Luciani, Daniel Walker, Jordan Sawyer, Sean Myers, Ben Steele
2010 – 2011	Daniel Oliphant, Victor Powell
2009 – 2010	Daniel Oliphant, Matthew Seiller
2008 – 2009	Stephen Lauck, Victor Powell, Jackie Kircher
2007 – 2008	Matthew Czarnek, John Conomikes
Pre-2007	Ethan Bromberg (Brown University), Arni Jonsson (Brown University)

Examiner/Reader (Comprehensive Examinations, Thesis Committees)

2025-2026	Gustavo Moreira, June 2025, Prelim Eric Anyimadu (U Iowa), June 2025, Prelim; April 2026 Defense Landon Dykens May 2026 Prelim Nafiul Nipu, PhD defense, July 2025, chair Sanjana Srabanti, PhD defense, July 2025, co-chair Anh T Nguyen, WCP, Feb 2025 Siyuan Zhao, WCP, Feb 2025 Hossein Fathollahian, WCP, Dec 2025
2024-2025	Andrew Wentzel, PhD thesis defense, Dec 2nd 2024, chair Nafiul Nipu, PhD prelim defense, Nov 15th 2024, chair Sanjana Srabanti, PhD prelim defense, Nov 4th 2024, co-chair
2023-2024	Juan Trelles, PhD thesis defense, chair Gustavo Moreira March 2024, WCP Sajal Chandra Apr 26 2024, MS report Farah Kamleh Apr 26 2024, MS report
2022-2023	Nikita Thakur, MS project, advisor Matt Ziminski, MS project, advisor Neal Chawla, MS project, reader Ja Eun Yu, prelim, committee, Dec. 20 2022 Kazi Omar, WCP, chair, Feb 28 2023 Juan Trelles, PhD thesis proposal, chair, Apr 29 2022
2022 (sabbatical)	Jillian Aurisano, PhD thesis defense, committee Krishna Bharadwaj, PhD thesis defense, committee WCP: Shaika Chowdury Pengyuan Li, PhD thesis defense, U Delaware, “Identifying, extracting, and utilizing image information within biomedical publications” Juan Trelles, PhD Proposal (prelim examination), Chair
2021	WCP: Carla Floricel “Patient Timelines in Visual Analytics”, Committee WCP: Nafiul Nipu “Analyzing Different Parameters, Methodologies, and Multi-linked Visual Encodings in Ensemble Visualization”, Committee WCP: Andrew Wentzel “Visualization Tools for Interpretable Machine Learning”, Committee WCP: Kostantinos Solomos “Web Tracking and Browser Fingerprinting: Longitudinal Analysis, Evolution and Defenses”, Committee MS Project: Naveen Kumar, “Visualizing data collected from Fitbit Wearables & Smart scales”, Advisor & Chair

MS Project: Pavana Doddi, “Chicago Crime Analytics”, Advisor & Chair

MS Project: Gino Ureta, “Collection Curation Pipeline for Allen Institute Dataset”, Advisor & Chair

MS Project: Solunke, Parikshit, “EuroVis Committee Network Visualization”, Advisor & Chair

MS Project: Elisa Tardini, “Recursive deep meta-reinforcement learning for personalized sequential dynamic treatment policies”, Mentor & Committee

2019-2020

John Wenskovitch, PhD Defense, CS Virginia Tech, “Dimension Reduction and Clustering for Interactive Visual Analytics”, Aug 14 2019

Pengyuan Li, Qualifying Exam (Thesis Proposal), U Delaware, “Identifying, extracting, and utilizing image information within biomedical publications”, June 6 2019

WCP: Andrew Burks “Supporting Human Decision-Making through Large Displays, Comparison, and Uncertainty Visualization”, Chair

WCP: Shreyas Kulkarni “Mixed Reality in Image Guided Surgery”, Chair

MS Project: M. Mantovani “Visual Encoding Effectiveness in Multivariate Data Similarity Detection”, Chair

2018-2019

WCP: Juan Trelles “Models for Explaining Unfamiliar Visualizations to Non-Expert Audiences”

MS Project: P. Hanula “A Patient Similarity-Based Method for Predicting Radiation Dosage in Head and Neck Radiation Oncology”

Honors Project: M. Bochnak “A simple mobile platform 2D videogame”

MS Project: Sai Phaltankar, “Identifying Opioid Abuse in Chicagoland”

MS Project: Shubadra Govindan, “Visualizing UMLS Metathesaurus”

MS Project: Jaspreet Kaur Sohal, “Englewood Data Analytics”

MS Project: Yashika Goyal, “Cancer Disparities in Chicago”

PhD Defense: Tim Luciani, “Problem-Driven Design Strategies for Scientific Data Visualization”

MS Thesis: Tomasso Massari, “Collaborative Project Planning Using Large Format Displays”

MS Project: Sankul Rawat, “AilNet: Fine-grained emotion detection in health-related posts”

John Wenskovitch, Qualifying Exam, Virginia Tech, “Combining Dimension Reduction and Clustering Algorithms for Interactive Exploratory Data Analysis”

2017 - 2018

Chihua Ma (PhD Defense), Feb 2018

Visual Analysis Techniques for Spatial-Nonspatial, Dynamic, Multi-Scale and Multi-Run Biological Networks

Manu Thomas (MS Defense), May 2018

Exploring Deep Learning Techniques for Real-time graphics

Simone Amico (MS Defense), May 2018

ETNA: a Virtual Reality Game with Affective Dynamic Difficulty Adjustment based on Skin Conductance

AB Musa (PhD Defense), May 2017

Advanced Techniques for Localization and Tracking

2016- 2017

Tim Luciani (PhD Proposal), July 2017

Spatial and Non-Spatial Visualization in Computational Biology

Chihua Ma (PhD Proposal), June 2016

Visual Analysis Techniques for Spatial-Nonspatial, Dynamic, Multi-Scale and Multi-Run Biological Networks

Manuel Tanzi (MS Defense), Dec 2016

Visualization of Neurophysiological Dynamic Communities within the Mouse Brain

Yiji Zhang (WCP), March 2017

Automatically Localizing Faults in Software Applications

Juan Trabucco Trelles (MS Defense), March 2017

CAVE2 comparison of 1st & 3rd user perspectives in virtual motor rehabilitation tasks

Mohammad Taha Khan (WCP), March 2017

Packets Lost in the Wild: An Analysis of Empirical Approaches to Measure Internet Censorship

2015- 2016, at
UIC

Filippo Pellolio (MS Defense), Apr 2016

SAGEBoard: a Whiteboard for Large Multitouch Displays

Andrea Rottigni (MS Defense), Apr 2016

Serious Games for Virtual Rehabilitation in a Large Scale Virtual Reality Environment

Davide Tantillio (MS Defense), Apr 2016

Large Multi-Touch Vertical Displays in Multi-User Competitive Tasks

Tim Luciani (WCP), Apr 2016

Spatial and Non-Spatial Visualizations in Computational Biology

	Jillian Aurisano (WCP), Apr 2016 Supporting sensemaking in visual data analysis
	Lei Zheng (WCP), Mar 2016 Deep Learning for Recommender Systems
	Matteo Palvarini (MSc), Dec 2015 RoomCast: an Authoring Environment and Runtime System for Classroom Orchestration of Digital Resources
	Tomas Gerlich (PhD Proposal) Multi-Motion Segmentation and Epi-Flow Estimation with a Static Camera
	Shreya Gosh (WCP) Analyzing Importance of Node Based on Node Deletion and Node Contraction
	Darya Filippova (CMU, PhD Defense), July 2015 Algorithms for identification, visualization, and compression of prominent substructures in biological data
2013 – 2014	Xiang Xiao, Qinglan Li, Adrian Maries, Abed Haque, Sean Myers, Tim Luciani, Darya Fillipova (CMU)
2012 – 2013	Becca Hachey, Patrick Dudas, Yingze Wang, Eric Heim
2011 – 2012	Abed Haque, Michal Valko, Roxana Gheorghiu, Yingze Wang, Iyad Batal
2010 – 2011	Wen Xu, Abed Haque, Adrian Maries, Mike Lipschultz, Michal Valko, Roxana Gheorghiu
2009 – 2010	Ricardo Villamarin
2008 – 2009	Michal Valko, Ricardo Villamarin, Tomas Singliar
2007 – 2008	Tomas Singliar, Qinglan Li

Courses Taught at UIC

CS529 Visual Data Science (2019, 2020, 2022, 2023, 2025)

CS594 Special Topics: Visual Data Science (2018)

CS342 Software Design (2017)

CS526 CG II: Scientific Visualization (2016)

CS426 Videogame Design (2016, 2017, 2018, 2019, 2020, 2024, 2025, 2026)

CS422 User Interface Design and Programming (2015)

CS522 Human Computer Interaction (2015)

2026 Spring cs426 “Videogame Design”

2025 Fall cs529 “Visual Data Science”
4.54 instructor, 28/28, 4.36 course

2025 Spring cs426 “Videogame Design”
Evaluations, Response rate (grad section): 4.7 instr., 4.7 course, 10/10 response rate, 10 enrolled
Evaluations, Response rate (ugrad section): 4.25 instr., 4.28 course, 40/43 response rate, 43 enrolled

2024 Spring cs426 “Videogame Design”
Evaluations, Response rate (grad section): 4.7 instr., 4.7 course, 10/10 response rate, 10 enrolled
Evaluations, Response rate (ugrad section): 4.25 instr., 4.28 course, 40/43 response rate, 43 enrolled

2023 Fall cs529 “Visual Data Science”
Evaluations, Response rate: 4.21 instr., 4.38 course, 29/29 response rate, 29 enrolled

2022 Fall cs 529 “Visual Data Science”
Evaluations, Response rate: 3.51 instr., 3.44 course, 43/44 response rate, 44 enrolled
(course did not scale up well with emergency MS increase in enrollment)

2020 Fall cs 529 “Visual Data Science” (fully online, synchronous)
Evaluations, Response rate: 4.4 instr., 4.6 course, 20/22 response rate, 22 enrolled

2021 Spring cs 426/des 426 “Videogame Design” (fully online, synchronous)
Evaluations, Response rate: 4.33 and 3.7 instr. (ugrad and grad), 4.11 and 3.55 course (ugrad and grad), 44/50 and 9/9 response (ugrad and grad), including 3 DES ugrads and 4 DES grads
CoE Teaching Award for effective teaching during the COVID-19 pandemic

2020 Spring cs 426 “Videogame Design” (smooth transition to fully online, synchronous, Mar 2020)
Evaluations, Response rate: 4.37 instr., 4.41 course, 59/60 response

2019 Fall cs 529 “Visual Data Science”
Evaluations, Response rate: 4.35 instr., 4.22 course, 24/25 response rate, 25 enrolled

2019 Spring cs 426 “Videogame Design”
Evaluations, Response rate: 4.26 ugrad, 35/36 response rate
Evaluations, Response rate: 4.6 grad, 5/5 response rate

2018 Fall cs 594 “Special Topics in CS: Visual Data Science”
Response rate/Enrollment: 31/31
Evaluations: 4.68 /5
First time class offered, designed from scratch. Class full w/in 24 hours of registration opening. 14 final projects with external “clients” (domain scientists on and off campus).

2018 Spring	cs 426 “Videogame Design” Response rate/Enrollment: 35/37 Evaluations: 3.14 First time class offered both terms. First class in many years to feature collaboration with Art students (in Snow Fu’s UIC New Media Game Play course); mixed results, but encouraging. 12 final projects.
2017 Fall	cs 426 “Videogame Design” Response/Enrollment: 42/44 Evaluations: 3.8 Class full again with CS undergrads and one design student. 15 final projects.
2017 Fall	cs 527 “Computer Animation” Evaluations: 4.73 Response rate/Enrollment: 11/11 Rarely offered course taught as service to EVL; designed from scratch.
2017 Spr	CS342 “Software Design” (required course) Enrollment: 70 after add/drop period (69 retained) Evaluations: 4.05/5 (65 responses out of 66) Redesigned the syllabus from scratch, to accommodate an active learning style that keeps students engaged despite little prior exposure to Java, and to allow a heavier emphasis on the software design process. The redesigned course emphasizes similarities between Java and C++, requirements analysis, functional specs, object-oriented design principles, collaborative tools, usability testing, teamwork, project management, and communication in the workplace, “soft skills” to make our undergraduates more competitive on the job market.
2017 Spr	CS426 “Videogame Design” Enrollment: Class full with 48 students enrolled (40 retained). Evaluations: 3.5/5 (37 responses out of 40) Class bursting at the seams w/ CS undergrad enrollment (no room for Artists, only two grad students). 13 final projects, including one serious game on anesthesiology training.
2016 Fall	CS526 Scientific Visualization. Small seminar class with 9 students enrolled (9 retained). Evaluations: 4.67/5 (9 responses out of 9) Seminar covering the nuts and bolts of scientific visualization. 8 final projects with external “clients (domain scientists on and off campus). IEEE VGTC VPG Outstanding Award to the entire class for a three-week project analyzing the seasonal distribution and usage of student test centers across the US. Students and instructor honored at the VPG reception at IEEE VIS 2016.
2016 Spr	CS426 Videogame Design. Class full with 50 students enrolled (31 retained). Evaluations: 3.73/5 (31 responses out of 31) Interdisciplinary course with emphasis on teamwork. Content extended to accommodate the enrollment of UIC Art and Design undergraduate students. Initiated collaboration with UIC English majors interested in creating media content for videogames. 10 final projects, including one serious game on physical rehabilitation.

- 2015 CS522 Human Computer Interaction.
Class full with 35 students enrolled (30 retained).
Evaluations: F.A.-voided due to large, reprimanded cheating incident among MS students.
Redesigned the syllabus, assignments, projects and exams to encourage interdisciplinary collaboration, teamwork, and service to the campus. 15 successful final projects with campus clients.
- 2015 CS422 User Interface Design and Programming.
Class full with 45 students enrolled.
Evaluations: 4.42/5 grad section, 4.13/5 undergrad section (40 responses out of 42)
Enrollment: 45 enrolled, 42 retained (14/15 grad, 28/30 undergrad).
Redesigned the syllabus, assignments, projects and exams to encourage interdisciplinary collaboration, teamwork, and service to the campus. 15 successful final projects with campus clients.

Courses Taught at U of Pittsburgh

CS2620 Interdisciplinary Modeling and Visualization (2009, 2011, 2012, 2014)
CS1566 Introduction to Computer Graphics (2008, 2009, 2010, 2011, 2012, 2013)
CS3610 Special Topics in Computer Graphics (2008, 2010, 2013)
CS1699 Special Topics in CS: Software Engineering and Project Management (2010)
CS1666 Principles of Videogame Design and Implementation (2011, 2013, 2014)
CS1630 Software System Design and Management (2012)

- 2013 – 2014 CS1666 Principles of Videogame Design and Implementation. Content further extended to accommodate English majors interested in creating content for videogames. The students worked in interdisciplinary teams.
- CS1566 Introduction to Computer Graphics. Class full with 48 students enrolled. Class format modified to allow in-class student skits on Computer Graphics select topics. Content further extended to include GPU programming.
- CS2620 Interdisciplinary Modeling and Visualization. Class full with 18 students enrolled.
- 2012 – 2013 CS3610 Advanced Topics in Computer Graphics. Seminar-level course in Visualization, class full with 17 graduate students enrolled and one auditing. One final project leads to an IEEE BioVis 2013 Data Contest Visualization Award in Oct 2013. Pitt CS **Teaching Award Nomination**.
- CS1666 Principles of Videogame Design and Implementation. Content further extended to accommodate usage of the Unity game engine, and the enrollment of undergraduate students interested in creating Visual Art for videogames. Continued collaboration with English majors interested in creating media content for videogames.
- CS1566 Introduction to Computer Graphics. Content further extended to accommodate a virtual camera programming assignment. Outstanding final projects. Highest OMET scores and evaluations since class first taught.

2011 – 2012 CS2620 Interdisciplinary Modeling and Visualization. One of the final interdisciplinary projects makes the shortlist in the [Desire2Learn Edge Challenge](#) (\$25K industry competition challenging developers to build apps that improve the experience of teachers, students and administrators), and another one grows into a system demonstration at IEEE Visualization 2012. Pitt CS **Teaching Award**.

CS1630 Immersive Software-System Design and Management. Two large scale software projects resulted from this edition of the course: a prototype system for mining history, disease and climate data (commissioned by the Pitt History Department, successfully demonstrated at the CHIA Dataverse Colloquium'12), and an automated homework submission and grading system for the Pitt Academy of Science and Technology (product described as “perfect” by the commissioner.)

CS1566 Introduction to Computer Graphics. Content further extended to accommodate a ray-tracing programming assignment. For the first time ever, Pitt students were able to complete a simple *ray-tracer* (cornerstone of computer graphics education, featuring complex math and programming) as part of their coursework.

2010 – 2011 CS2620 Interdisciplinary Modeling and Visualization. Four short papers and system demonstrations resulting from interdisciplinary projects in this class were accepted into IEEE VisWeek 2011.

CS1666 Principles of Videogame Design and Implementation. I redesigned this course from scratch to emphasize the cross-disciplinarity of videogame design (artistic design, creative writing, and computer science). Pitt CS **Teaching Award**.

CS1566 Introduction to Computer Graphics. Updated the course with a speaking component: 5-minute student-pitches each class. Excellent final projects, followed by increased enrollment in the Videogame course CS1666.

2009 – 2010 CS1699 Immersive Software-System Design and Management. I developed this senior-level undergraduate course on software engineering in accordance with the Pitt Speaking in the Disciplines guidelines. The course emphasizes project management, usability testing, customer interviewing, specification of formal requirements, and oral communication, “soft skills” which will make our graduates more competitive in the global marketplace and less susceptible to off-shoring. Pitt CS **Teaching Award, top 4% courses in the School of A&S**.

CS1566 Introduction to Computer Graphics. Course content further extended to accommodate a ray-object intersections math and programming assignment. For the first time ever, Pitt students were able to compute ray-object intersections (complex math, and building block towards ray-tracing). Impressive gallery of final projects.

CS3610 Advanced Topics in Computer Graphics. I taught a new edition of the course, with emphasis on Visual Analytics and Human-Computer Interaction. The course follows the Pitt Speaking in the Disciplines guidelines to help students develop their oral communication skills. Student feedback indicates success.

- 2008 – 2009 CS2620 Interdisciplinary Modeling and Visualization. I developed and taught this graduate course for the first time in this lecture/assignments/final project format. The course emulates the process of scientific research, from a peer-reviewed proposal to a final report and presentations. Several projects resulted in publications and/or long-term interdisciplinary collaborations. Pitt CS **Teaching Award, top 4% courses in the School of A&S.**
- CS1566 Introduction to Computer Graphics. I updated this undergraduate course to further emphasize modeling and simulation concepts; including a hot-topic GPU programming component. 100% student retention. The final projects were so compelling, I was asked to talk about this course at SIGGRAPH 2009.
- 2007 – 2008 CS3610 Advanced Topics in Computer Graphics. I developed and taught this graduate course for the first time this year. In it, students learned the basics of scientific modeling and visualization and emulated the process of doing interdisciplinary research by working in multi-disciplinary teams on scientific problems. The groups for each project were required to have participants from multiple disciplines, exposing them to many of the skills required for multi-disciplinary collaborative work. Pitt CS **Teaching Award.**
- CS1566 Introduction to Computer Graphics. I gave this undergraduate course a much-needed re-haul. Updates include a completely new syllabus with sections on photorealism, video game design, image processing, color perception, and user interfaces.
- Pre-2007 Interactive Computer Graphics (Brown University CS 224, 2004). I co-designed and co-taught the 2004 edition of this research-oriented graduate level class. Full class responsibility, shared with fellow graduate students Morgan McGuire and Tomer Moscovich.

Curriculum Development

At UIC

Designed and proposed with S. Boorboor new BS in CS concentration “Gaming and Real-Time Computing”, to help with CS undergraduate recruitment; approved 2026

Proposed cross-listing of CS426 as DES426 (Videogame Design and Implementation); approved 2018

New temporary graduate course proposed and approved: CS594 Visual Data Science; 2017

New permanent graduate course proposed and approved: CS529 Visual Data Science; 2018

At Pitt

Created and proposed *Immersive Software System Design and Management* (CS 1630); approved 2010.

Proposed *Immersive Software Engineering*, Provost’s ACIE award, 2009

Designed and proposed *Interdisciplinary Modeling and Visualization* (CS 2620); approved 2008.

Co-designed and co-proposed *Principles of Computer Game Design and Implementation* (CS 1666), approved 2007.

University Service at UIC

2025-2026	UIC HDS Institute cross-college bootcamp organizer UIC HDS Institute Epic COSMOS datathon co-organizer Honors Council member 2024-2027 UIC Senate Research Committee UIC Senate, member DPI Executive Committee, member Honors Fellow 2021-current UIC Cancer Center full member Discovery Partners Institute member ARPA-H CAIDF monthly demonstrations for Project Manager Research Mentor to 7 IHDS faculty members across colleges CoE Strategic Plan for AI for Health Sciences Group CoE Associate Dean for Research Committee Director of Graduate Admissions, Co-Director of Graduate Studies, and Chair of Graduate Admissions Committee P&T Committee CS MS Applications Analysis Report
2024-2025	Director of Graduate Admissions, Co-Director of Graduate Studies, and Chair of Graduate Admissions Committee P&T Committee Faculty Mentor to Wei Tang, Saeed Boorboor HDS Institute cross-college bootcamp organizer, Aug 2024 UIC Senate Research Committee member UIC Senate member Discovery Partners Institute (DPI) Executive Committee member Discovery Partners Institute member Honors Council member 2024-2027 Honors Fellow 2021-2024 UIC Cancer Center full member Data Science Institute committee Research Mentor to 12 IHDS faculty members across multiple colleges
2023-2024	Director of Graduate Admissions and Graduate Admissions Committee Chair, CS department Co-Director of Graduate Studies, CS department Faculty Search Committee, CS department P&T Committee, CS department, including teaching peer-evaluation CS+Design program advisory committee

	CS Formal Mentor to one junior faculty UIC Senate member UIC Honors Fellow UI Cancer Center member Discovery Partners Institute Member
2022-2023	Director of Graduate Admissions and Graduate Admissions Committee Chair, CS department Co-Director of Graduate Studies, CS department Graduate Committee, CS department P&T Committee, CS department, including teaching peer-evaluation Hosted Dr. Guadalupe Canahuate (U Iowa) during her sabbatical leave Hosted Dr. Canahuate CS Seminar Hosted visit and colloquium by Maria Roussou (National and Kapodistrian University of Athens, Greece), May 3rd 2023 CS Formal Mentor to one junior faculty CS+Design program advisory committee UIC CoE Associate Dean of Graduate Studies search committee UIC Data Science Institute committee UIC Senate member UIC Honors Fellow UI Cancer Center member Discovery Partners Institute member
2021-2022 (sabbatical)	UIC Honors Fellow 2021-2022 UI Cancer Center full member UIC CoE Associate Dean of Graduate Studies search committee CS+Design program advisory committee Discovery Partners Institute Member
2020-2021	UIC Honors College Fellow UI Cancer Center full member UIC Campus Research Board Discovery Partners Institute Member College of Engineering Associate Dean for Graduate Studies Search Committee CS Advisory Committee CS Graduate Committee CS Promotion & Tenure Committee CS Formal Mentor to three junior faculty
2019-2020	UIC Honors College Fellow UI Cancer Center full member UIC Campus Research Board CS Faculty Search Committee CS Advisory Committee CS Promotion & Tenure Committee CS Formal Mentor to three junior faculty CS Hosted Distinguished Lecturer (Anders Ynnerman, Linkoping U)

- 2018-2019 UIC Honors College Fellow
UI Cancer Center full member
UIC Campus Research Board
CS Undergraduate Advising
CS Graduate Admissions Committee
CS Faculty Search Committee
CS Promotion & Tenure Committee
CS Formal Mentor to one junior faculty
- 2017-2018 UIC Honors College Fellow
UI Cancer Center full member
UIC Campus Research Board
CS Hosted Distinguished Lecturer (Amitabh Varshney, UMD)
CS Ad-hoc Undergrad Advising Committee (40 one-on-one advisee appts instead of 20)
CS Faculty Search Committee, as department grows by 25%
- 2016-2017 CS Undergraduate advising
CS Graduate Admissions Committee
CS Undergraduate Committee
UIC Honors College Fellow
Co-hosted Distinguished Lecturer (Sheelagh Carpendale, Calgary U)
- 2015-2016 CS Undergraduate advising
CS Graduate Admissions Committee
Hosted Distinguished Lecturer (Claudio Silva, NYU)
GHC'15 WiCS escort, Oct 2015
UIC Open House EVL demos, Oct 2015
CS Undergraduate advising
- 2015 CS W-ACM Women's Student ACM Chapter, Advisor
CS Graduate Admissions Committee
CS Co-Hosted Distinguished Lecturer (Tamara Munzner, UBC)
Organized cs422 undergraduate demos for U of Illinois new president, May 2015
Organized cs422 undergraduate demos for CS Advisory Board, May 2015
Selected, hired and supervised 6 REUs, three of which are minority students
Marshalled CS commencement

University Service at Pitt

- 2013 – 2014 Women in Computer Science Committee, Co-Chair; diversity advising.
Undergraduate Recruiting and Advising Committee; CS major advising.
Graduate Evaluation, Assignment and Training Committee
Center for Simulation and Modeling (SAM) Advisory Board
- 2012 - 2013 Women in Computer Science Committee, Co-Chair; bi-monthly events
Undergraduate Recruiting and Advising Committee; besides advising, paired each diversity student advised with mentors from the Women in Computer Science community
Graduate Evaluation, Assignment and Training Committee; recitation and lab visits, evaluation and feedback to the Graduate TAs
Center for Simulation and Modeling (SAM) Advisory Board
- 2011 - 2012 Women in Computer Science faculty advisor and coordinator; bi-monthly events

- Center for Simulation and Modeling (SAM) Advisory Board
 Hosted CS “Big Data” Colloquium speakers: James Faeder (Computational Biology), Harry Hochheiser (UPMC Bioinformatics), Peter Brusilovsky (ISP), Jeffrey Newman (Astronomy), Levent Yilmaz (Engineering), Vanathi Gopalakrishnan (UPMC Bioinformatics)
- 2010 - 2011 Co-Chair, Distinguished Lecture Series; raised Google funding for the series
 Chair, CS Colloquium
 Women in Computer Science faculty advisor and coordinator; bi-monthly events
 Chair, Diversity Committee; helped recruit two Hot Metal Bridge fellowships to the CS department
- 2009 - 2010 Center for Simulation and Modeling (SAM) Advisory Board
 Hosted Colloquium speakers: Aaron Henderson (Studio Arts), Jeff Newman (Astronomy), Michael Wood-Vasey (Astronomy), William Anderst (Orthopaedics), Chris Johnson (Utah), Claudia Mello-Thoms (UPMC Bioinformatics)
 Center for Simulation and Modeling (SAM) Advisory Board
 Chair, CS Colloquium; helped recruit Kitware to the Pitt CS Industry Board
 CS Outreach Committee; marketing departmental accomplishments via the CS website, posters, fliers etc.
 CS-Day Committee; organizer Digital Media Contest
 Women in Computer Science (WiCS) faculty-coordinator; regular meetings and outreach activities
 Technology Leadership Initiative Advisory Board; workshop-organizing for under-represented and under-served high-school students
 Hosted CS Colloquium speakers: Marcus Hanwell (Kitware Inc), Morgan McGuire (NVIDIA)
- 2008 - 2009 Center for Simulation and Modeling (SAM) Advisory Board
 CS Colloquium Chair; helped increase corporate support for Distinguished Lecture Series from 0 to 2
 Hosted CS Colloquium speakers: Joseph Konstan (Distinguished Lecturer; U. Minnesota), Fernando DeLaTorre (CMU)
 CS Graduate Admissions and Financial Aid Committee
 CS-Day Committee; co-organizer Digital Media Contest
 CS Outreach (ad hoc) Committee; helped with international recruiting and departmental website redesign
 Women in Computer Science (WiCS) faculty-coordinator; bimonthly meetings including industry guests, and outreach activities
 Hosted seminar-speakers: M. Renieris (Google), M. Friedman (Public Health), M. Hanwell (Chemistry), J. Faeder (Computational Biology), G. Mustata (Drug Discovery Institute), M. Wood-Vassey and J. Newman (Astronomy).
- 2007 - 2008 Center for Simulation and Modeling (SAM) Organizational Committee
 Women in Computer Science (WiCS) Coordinator and founder
 Bioengineering and Bioinformatics Summer Institute (BBSI) Mentor
 Hosted seminar-speakers: M. Renieris (Google), S. Tashman (Pitt Medical School Orthopaedics), S. Leuba (Pitt Biophysics), G. Hutchison (Chemistry), J. Faeder (Computational Biology), and N. Ebenreuter (CMU Design)
 CS Graduate Admissions and Financial Aid Committee; excellent admissions record
 CS Faculty Search Committee

CS-Day Committee; co-organizer Digital Media Contest

CS Outreach (ad hoc) Committee; helped with international recruiting and departmental website redesign

Memberships

ACM, IEEE, ISCB.

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