

Tina V. Johnson
Department of Computer Science
Midwestern State University
3410 Taft Blvd
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EDUCATION

University of North Texas – Denton, TX

Ph.D. in Computer Science, Computational Epidemiology, 2010

Midwestern State University – Wichita Falls, TX

M.S. Computer Science, 2000

B.S. Math Major, Computer Science Minor, 1993

PROFESSIONAL EXPERIENCE

Midwestern State University – Wichita Falls, TX

Fall 2021–Present, Professor of Computer Science

Fall 2015–2021, Associate Professor of Computer Science

Fall 2008–Fall 2015, Assistant Professor of Computer Science

Spring 2008–Fall 2008, Instructor of Computer Science

Fall 2000–Fall 2008, Developmental Math Instructor

Wichita Falls High School – Wichita Falls, TX

1993–2000, Computer Science/Computer Applications Teacher

TEACHING

Awards

Faculty Award, 2019

Teaching Responsibilities

Teach undergraduate and graduate computer science courses

Advise undergraduate computer science students

Supervise student internships during summer

Courses Taught:

CMPS 5553 Topics: Visual Image Processing

CMPS 5323 Topics: Cognitive Science

CMPS 5313 Automata Theory

CMPS 5243 Algorithm Analysis

CMPS 5143 Advanced Operating Systems

CMPS 5113 Advanced Programming Language Concepts

CMPS 4883/5323/5443 Topics: Computational Epidemiology

CMPS 4883/5323/5443 Topics: Graph Theory
CMPS 4883/5443 Topics: Evolution of Computing
CMPS 4663/5363 Topics: Network Security
CMPS 4553 Topics: Agent-Based Modeling
CMPS 4553 Topics: Survey of Computational Methods
CMPS 4443/5373 Topics: Supporting Software Tools
CMPS 4103 Operating Systems
CMPS 4143 Contemporary Programming Languages: Java/Python
CMPS 3663 Intro to Cyber Security
CMPS 3233 Theory of Computation
CMPS 3013 Advanced Structures & Algorithms
CMPS 1063 Data Structures and ADT
CMPS 1044 Computer Science I
CMPS 1023 Computing for Science Majors
CMPS 1023 The Digital Culture
CMPS 1013 Computer Concepts and Applications (on campus and online)
MWSU 1333 Leadership MSU - Honors
MATH 1233 College Algebra
MATH 1003 Intermediate Algebra
MATH 0003 Beginning Algebra
SCIE 2103 Understanding Science, Engineering, and Technology

RESEARCH AND SCHOLARLY ACTIVITY

Student-based Research

- Virtual Reality (VR) 2017-2020, 2022-Present. Weekly meetings with 4-6 active students. Current project: Gaming in VR. Past projects: Virtual disease-spread simulation (UGROW project, summer 2020); Modeling the human heart (Eureca project 2018, poster presentations); Virtually Bolin (Faculty Research Grant 2015, poster presentations; Science Café talk).
- Mind over Matter (EEG Brainwaves) 2016. Weekly meetings with 3 faculty and 3-5 students. Project: Brain Computer Interaction (Eureca project 2013, publication, presentation).
- iPhone App 2011-13. Weekly meetings with 2 faculty and 3-5 students. Project: MSU2U mobile app (Two University Grants 2011, 2012, publication, presentation).
- Graduate Students Three publications resulting from individual work with graduate students (2019, 2013, 2010)

Publications

Refereed Journals/Conferences

Bowen Daniel L., **Johnson, T.**, and Stringfellow, Catherine V., "Photogrammetry Software," *The 2022 World Congress in computer Science, Computer Engineering, and Applied Computing (CSCE 2022)* July 2022.

Johnson, T. and Wei B., "A Virtual Experience: Benefits of Extracurricular Group Projects," *Proceedings of the Consortium for Computing Sciences in Colleges (CCSC: South Central)*, April 2017.

Stringfellow, C., **Johnson, T.**, Simpson, R., Grayson, M., Khalid, A., and Easter, U., "A Study of Scientific Application Interfaces and a Proposed GUI for Brain Signal Processing," *Int'l Conference on Computers and Their Applications in Industry and Engineering (CAINE-2016)*, September 2016.

Johnson, T., Stringfellow, C., and Musarurwa, S., "Students Teaching Students: A long-Term, Team Based Project," *Int'l Conference on Computers and Their Applications in Industry and Engineering (CAINE-2014)*, October 2014.

Farmer, M. and **Johnson, T.**, "EpiViz: A Visual Simulation of an Epidemic Model Using a Cellular Automaton," *Int'l Conference on Modeling, Simulation and Visualization Methods (MSV)*, July 2013.

Johnson, T., Griffin, T., Binnion E. and Sawyer, C., "University iPhone App: Start to Finish Development," *Proceedings of the Consortium for Computing Sciences in Colleges (CCSC: South Central)*, April 2013.

Johnson, T. and Mikler, A.R., "Chasing R_0 : Understanding the Effects of Population Dynamics on the Basic Reproduction Number," *Journal of Biological Systems*, December 2011.

Simpson, R. and **Johnson, T.**, "Computing for Science Majors: A New Course," *Proceedings of the Consortium for Computing Sciences in Colleges (CCSC: South Central)*, with R. Simpson, April 2011.

Bohannon, K.M. and **Johnson, T.**, "Cellular Automaton as an Epidemiological Model: A New Twist on Old Ideas," *Proceedings of the Int'l Conference on Computers and Their Applications in Industry and Engineering (CAINE-2010)*, November 2010.

Johnson, T. and Mikler, A.R., "The Elusive R_0 – Chasing the Basic Reproductive Number," *Proceedings of the Int'l Conference on Bioinformatics & Computational Biology (BIOCOMP)*, July 2009.

Johnson, T. and Griffin, T., "Simulations of Disease Spread Based on the SIR Model," *Proceedings of the Int'l Conference on Computers and Their Applications in Industry and Engineering (CAINE-2008)*, November 2008.

Creative Works Completed

Simpson, R. and **Johnson, T.**, "Perl for Science Majors," *Midwestern State University Computer Science Department*, spring 2011, for campus use only.

Presentations and Workshops

Agent-Based Modeling using NetLogo, *Young Engineer Summer Camp (YES)*,
Midwestern State University, June 2021

Living with Virtual Reality Workshop, *Young Engineer Summer Camp (YES)*,
Midwestern State University, June 2019

“NetLogo and GIS: A Powerful Combination,” *International Conference on Computers and Their Applications (CATA-2019)*, Honolulu, HI, co-presented with Broday Walker, graduate student, March 2019.

Complex System Modeling Workshop, *Young Engineer Summer Camp (YES)*,
Midwestern State University, annually, June 2014-2018.

“Tech for Teens,” Lightning Talk, Consortium of Computing Sciences South Central Conference (CCSC:SC), TCU, Fort Worth, TX, April 6, 2018.

“Virtual Reality and Unity 3D” Science Café Talk, Wichita Falls Museum of Art,
February 8, 2018.

“Computer Science - Education & Careers,” 8th grade Career Expo at MPEC,
September 27, 2016.

“Programming: A Tool for Every Major,” *2015 Weekend Flight & 2015 Weekend Flight*, Presented at introductory meeting of SOAR scholars.

“Eat, Reproduce, Die: Modeling a Simple Ecosystem with NetLogo,” *2014 Region 9/TCEA Technology Conference*, Region 9 Service Center, August 2014.

“EpiViz: A Visual Simulation of an Epidemic Model Using a Cellular Automaton,”
Int’l Conference on Modeling, Simulation and Visualization Methods (MSV), Las Vegas, NV, July 2013.

“University iPhone App: Start to Finish Development,” *Consortium for Computing Sciences in Colleges (CCSC: South Central)*, April 2013.

“Complexities of Disease Modeling,” Midwestern State University Faculty Forum,
March 2013.

“The Elusive R_0 – Chasing the Basic Reproductive Number,” *Int’l Conference on Bioinformatics & Computational Biology (BIOCOMP)*, Las Vegas, NV, July 2009.

“Simulations of Disease Spread Based on the SIR Model,” *Int’l Conference on Computers and Their Applications in Industry and Engineering (CAINE-2008)*, Honolulu, HI, November 2008.

“Now Showing on Channel MSU: Numbers,” Probability workshop, Math, Science & U Girls’ Conference, Midwestern State University, November 2005.

“Weaving Dreams on the Web” Web design workshop, Expanding Your Horizons Conference, Midwestern State University, October 2001.

“Signed and Unsigned Numbers,” Arithmetic workshop, Burkburnett Jr. High, Burkburnett, TX, 2002.

Grants

MSU Faculty Intramural Grant, 2022-23 (\$1,199), PI: Gaming in Virtual Reality. Grant to purchase VR headsets for students to program.

Enhancing Undergraduate Research Endeavors & Creative Activities (EURECA) grant, 2021 CO-PI: Grant to design a lower-limb exoskeleton using servo motors. This research includes working with one undergraduate student and a professor in the Department of Engineering.

Undergraduate Research Opportunities and Summer Workshop (UGROW), Summer 2020, Faculty Sponsor: Summer research grant to "Creating a Virtual Space" was developed by two students majoring in Computer Science.

NSF Scholarship Grant for STEM, 2014-2020 (\$600,000) CO-PI: Scholarship Opportunities for Academic Recognition (SOAR) grant to provide scholarships to academically talented students entering STEM field who demonstrate financial need. Duties for this ongoing grant include attending SOAR events throughout fall and spring semesters and advising CMPS majors in the SOAR program.

NSF 16-559 Robert Noyce Teacher Scholarship program, 2017-Present (\$123,927) Faculty partner: Grant to increase the enrollment and retention in the 7-12 certification math and science courses. Duties include coordination of work in the McCoy College of Science, Math, and Engineering, data collection and analysis, webpage maintenance, participation in Learning Community (LC) training and teaching one or more LC courses.

Enhancing Undergraduate Research Endeavors & Creative Activities (EURECA) grant, 2018 (\$451), PI: Grant to produce a virtual reality (VR) model of the human heart. This research included working with two undergraduate students, one from the Department of Computer Science and one from the Department of Nursing.

MSU Faculty Research Grant, 2015-16 (\$6,525), PI: Grant to create a virtual tour of Bolin Science hall that can be explored using the Oculus Rift. This grant provided hardware support and student funding. Other faculty member involved: Dr. Bingyang Wei.

Enhancing Undergraduate Research Endeavors & Creative Activities (EURECA) grant, 2013 (\$3,500), PI: Grant to explore Brain Computer Interface capabilities. This research included working with three undergraduate students and two other faculty members, Professor Richard Simpson and Dr. Catherine Stringfellow.

MSU University Grant (continuation) 2012-13 (\$5,000) PI: Grant to update MSU2U iPhone App and create a comparable Android App.

MSU University Grant, 2011-12 (\$4,980) PI: Grant to create a University iPhone App. Other faculty member involved: Dr. Terry Griffin.

Professional Involvements

- Regional Representative on National Board, *Consortium for Computing Sciences in Colleges: South Central*, 2015-present
- Treasurer, *Consortium for Computing Sciences in Colleges: South Central*, 2014-2015
- Co-Publicity Chair, *Consortium for Computing Sciences in Colleges: South Central*, 2013-2014
- MSU Liaison Board Member for non-profit organization, Tech for Teens
- Reviewer, *Consortium for Computing Sciences in Colleges: South Central*, 2008-present
- Session Chair, *Consortium for Computing Sciences in Colleges: South Central*, 2008, 2010, 2011, 2014-present
- Session Chair, *Int'l Conference on Modeling, Simulation and Visualization Methods (MSV)*, July 2013
- Session Chair, *Int'l Conference on Computers and Their Applications in Industry and Engineering (CAINE-2010)*, November 2010
- Faculty Sponsor, Upsilon Pi Epsilon, 2010-present
- Member, Upsilon Pi Epsilon
- Member, Graduate Faculty of MSU
- Member, Association for Computer Machinery

SERVICE

University/College/Department

- University Tenure & Promotion Committee 2016-2018, 2021-present
- Faculty Senate, 2005-2007, 2020-2022
- Faculty Search Committee, 2014-15, 2019-20 (chair), 2020-21
- College Tenure & Promotion Committee 2018-2020
- Title IX Investigator, 2018-present
- Graduate Faculty Committee, 2010-present
- Graduate Merit Scholarship, 2010-present
- Graduate Admission Evaluation Committee, 2010-present
- CMPS Academic Advisor, 2009-present
- Math/Science Girls Conference, 2000-present
- Math/Computer Science Barbecue, 2000-present
- Eureka Reviewer and Presentation Judge, 2013-present
- Mustangs Rally, 2009-present
- Spirit days, 2009-present
- MSU Bigs, Faculty Sponsor, 2011-present
- Creator of Computer Science Newsletter, 2009-2018
- Financial Aid Appeals Committee, 2001-02, 2004-2016, (chair 2010-2016)
- Computer Science Certification for Teachers Chair 2014-15

- Faculty Mentor, 2014-15
- Scholarship Colloquium Committee Member, 2013-14
- CMPS Curriculum Committee, spring 2013
- MSU2U, Faculty Advisor, 2011-2014
- Major's fair, 2000-2013
- Computer Concepts and Applications course development committee, spring 2011
- Faculty-Staff Traffic Appeals Committee, 2001 - 2005
- Alpha Chi Honor Society Sponsor, 2004

Community

- Board Member, Big Brothers Big Sisters of W.F., 2021-present
- Board Member and MSU Liaison, Tech for Teens non-profit organization, 2016-2020
- Big Brothers Big Sisters of W.F., MSU Bigs Faculty Sponsor, 2011-present
- Big Brothers Big Sisters, Big Sister, 2010-2012