Ronald F. Taylor, Ph.D.
Curriculum Vita

Education:

- A.B. Mathematics and Physics – Magna Cum Laude, Wilmington College (Ohio).
- M.S. Mathematics - Wright State University.
- Ph.D. School of Engineering - University of Dayton.
- Additional Courses: The Ohio State University (applied mathematics, computing, engineering mechanics) and the Air Force Institute of Technology (applied mathematics), Sinclair Community College (computing).

Current Employment/Volunteer Service:

- Wright State University: Advisor (Volunteer), Department of Computer Science and Engineering (2023-current)
- Wright State University: Adjunct Instructor, Department of Computer Science and Engineering (2020-2023)

Earlier Employment:

- Wittenberg University: Adjunct (2017-2018) and Visiting Professor (2018-2019), Department of Mathematics and Computer Science
- Wright State University, Senior Lecturer (Emeritus), Department of Computer Science and Engineering (1997-2016).
- Summer Faculty Researcher and Software Developer, Interdisciplinary Design and Optimization Center, Air Force Research Laboratory WPAFB (2011 – 2013).
- Information Technologist for Artificial Intelligence Applications, Sinclair Community College (1995 – 1997).
- Software Engineer and Project Manager, Center for Artificial Intelligence Applications, Miami Valley Research Institute (1994 - 1995).
- Research Engineer and Analytical Mechanics Group Leader, University of Dayton Research Institute (UDRI) – software development engineering applications (1977 – 1994).
- Associate Professor, University of Dayton School of Engineering as joint appointee with UDRI (1984 – 1994).
- Adjunct Instructor, Department of Mathematics, University of Dayton (1980-1990).
- Physicist and Aerospace Engineer, Air Force Flight Dynamics Laboratory, WPAFB – software development (1967-1977).

Service (selected – Wright State unless otherwise indicated):

- Academic Advisor, Undergraduates in Computer Science and Engineering (2003-2014)
- Academic Advisor, Master of Science Graduates in Computer Science and Engineering (2014-2015)
- Member, Advisory Board for Greater Miami Valley Computer Science Circle (2015-current).
- Member, Department Graduate Studies Committee, Computer Science and Engineering (2014-2016).
- Member, Department Steering Committee, Computer Science and Engineering (2014-2015).
- Member, Department Undergraduate Studies Committee, Computer Science and Engineering (2010-2014).
- Member, Department Service Course Committee, Computer Science and Engineering (2009-2010)
- Member, Advisory Board for Programming Languages and Web Development, Sinclair Community College (2008 – 2016).
- Web Site Programming Support, US Department of Education Grant, "Accessible Arts", Office of Disability Services web-based display applications on Dayton Art Institute Website (2001)
- Web Site Content Manager, Computer Science and Engineering Internet and Intranet (2004-2008).
- Reviewer, seven major publishers of college textbooks in areas of: computational science, programming, computational mathematics, and discrete mathematics (2001–2016).
- Coordinator, Ohio Supercomputer Center/Ralph Regula School of Computational Science, Baccalaureate Minor Program Curriculum Committee (in collaboration with twelve other Ohio universities and colleges) (2005-2012).

- Coordination, Computational Science associate degree program with Sinclair Community College (2006-2016).
- Coordinator, Computational Science master's degree program with Miami University and Ralph Regula School of Computational Science (2006).
- Chair & Organizer of Educational Session MS 145, SIAM National Computational Science and Engineering Conference, Miami, Florida, (WSU, Wittenberg U., Miami U., and Northern Illinois U. were session participants) (2009).
- Member, Graduate Faculty (2001-present).
- Member, Doctoral Qualifier Exam Committee (Engineering Mathematics), Computer Science and Engineering (2005 – 2008).
- Member, three M.S. Committees, Mechanical and Materials Engineering (2005-2014).
- Member, one Ph.D. Committee, Computer Science and Engineering (2007-2009).
- Member, University Non-Bargaining Unit Faculty Affairs Committee (2002-03, 2004-05, 2008-09)
- Member, University Faculty Constitution Quadrennial Review Committee (2009-2011).
- Member, University Learning Management Systems Selection Committee (2009-2010).

Recent Awards:

- Wright State 2015 Presidential Award for Faculty Excellence – Outstanding Lecturer. http://webapp2.wright.edu/web1/dialogue/2015/09/outstanding-lecturer-4/
- Southwestern Ohio Council for Higher Education (SOCHE) 2015 Faculty Excellence Award.

Recent Activities Relating to Pedagogy:

- "Reducing the Achievement Gap for Mathematically Underprepared Students in Computer Science", presentation at Wright State Teaching for St8udent Success Symposium, August 2016.
- Faculty Member of Greater Miami Valley Computer Science Circle – outreach to local high school students interested in computer science and mathematics, 2015-current.
- Recipient of an Active Learning Teaching Grant, Center for Teaching and Learning, Wright State University, Summer 2016.

Courses Taught at Wittenberg University:

- Introduction to Computer Programming in Python (2017-2019).
- Programming in Java (2019)
- Introduction to Numerical Mathematics (2018).
- Computer Networking (2018)
- Discrete Mathematics (2018)
- Language of Mathematics (2019)

Courses Taught (Wright State *, University of Dayton **, Sinclair Community College *) from 1980 to 2023:**

- Algebra ***
- C Business *
- C for Engineers *
- Calculus **
- Computational Science Algorithms & Programming (special topics) *
- Computational Tools for Data Analysis *
- Computer Engineering Mathematics *
- Computer Programming I – Java *
- Computer Programming II - Java *
- Computer Programming – Python *
- Computer Science I *
- Computer Science II *

- Continuum Mechanics **
- Discrete Structures *
- Discrete Structures and Their Algorithms *
- Design of Information Technology Systems *
- Design Optimization *
- Differential Equations **
- Dynamics **
- Elasticity **
- Finite Element Analysis *
- Fortran *
- Mathematical Modeling **
- Matrix Computations *
- Numerical Methods for Digital Computers I *
- Numerical Methods for Digital Computers II *
- Numerical Methods for Computational Science *
- Programming Language Workshop *
- Senior Software Design Projects *
- Statics *
- Vibrations Theory and Applications **
- Writing Scientific Software (special topics) *

Scholarship (selected recent publications):

Taylor, R. F., M. N. Johnson, and D. C. Dietz, "ASTROS Advisor: An Expert System for the Design and Analysis of Aerospace Structures," Paper at the 6th Annual Conference on Aerospace Applications of Artificial Intelligence, Dayton, Ohio, October 29-31, 1990.

Sarma, H. K., R. V. Grandhi, and R. F. Taylor, "Expert System for Multidisciplinary Analysis and Optimization Using ASTROS," Journal of Artificial Intelligence for Engineering Design, Analysis and Manufacturing, Vol. 4, No 2, December 1990.

Taylor, R. F., "Development of an Improved Turbine Engine Structural Analysis Expert System Consultant," UDR-TM-9403, February 1994.

Taylor, R. F., "Integration of Kiosk and Web Services," Technology Conference, League for Innovation in the Community College, Phoenix AZ (1996).

Taylor, R. F., “Computational Science Programming and Algorithms Course,” Ohio Supercomputer Center Grant Report, 236 pages, August 2008.

Taylor, R. F., “Computational Science Module: Analysis of Damaged Panels in Supersonic Flow,” NSF/Capital University Grant 0618252 2008 Report, 66 pages, peer review by Prof. R. Gass, Physics Department, University of Cincinnati, August 2009.

Taylor, R. F., "Selecting CSE and Computational Mathematics Topics for Collaborative Curriculum Development", SIAM National Conference on Computational Science and Engineering, Miami, FL (2009).

Taylor, R. F., "Implementing Numerical Linear Algebra in the Undergraduate Science and Engineering Curriculum," Northern Illinois University Conference on Linear Algebra and Applications, DeKalb, IL (2009).

Taylor, R. F., "Computational Science and Mathematics in the Undergraduate Curriculum", Colloquium Presentation, Department of Mathematics and Statistics, Wright State University, October 2009.

Taylor, R. F., "Computational Science Module: Vehicle Identification and Arrestment,"
NSF/Capital University Grant 0618252 2009 Report, peer review by Prof. R. Gass, Physics Department, University of Cincinnati, revised November 2010.

Taylor, R. F., "Computational Science Module: "Selected Application Areas of Matrix Computations in Computer Science and Engineering", NSF/Capital University Grant 0618252 2010 Report.
Bhagat, N., M. Blair, A. M. Shih, and R. F. Taylor, "The Development of a Geometry Engine with Analytic Sensitivities," AIAA-2012-0966 Paper at 50th Aerospace Sciences Meeting, January 9-12, 2012, Nashville, TN.

Taylor, R.F., F. Eastep, and R. Kolonay, "A Methodology for 3-D Zero-Lift Drag with Aeroelastic Effects", AIAA 38th Dayton-Cincinnati Aerospace Sciences Symposium, March 6, 2013, Dayton, OH.

Taylor, R.F., J Camberos, R. Kolonay, and F. Eastep, "Zero-Lift Drag Prediction Including Aeroelastic Effects", Royal Aeronatucial Society of London, International Forum on Aeroelasticity & Structural Dynamics, June 24 – 27, 2013, Bristol, UK.

Camberos, J., R. Kolonay, F. Eastep, and R. Taylor, "Zero-Lift Drag Prediction Including Aeroelastic Effects", AIAA SciTech Conference, January 13-17, 2014, National Harbor, MD.

Camberos, J., R. Kolonay, F. Eastep, and R. Taylor, "An Efficient Method for Predicting Zero-Lift or Boundary Layer Drag Including Aeroelastic Effects for the Design Environment," The Aeronautical Journal, Royal Aeronautical Society of London, Vol. 119, No. 1221, November 2015.

Funding (grants and contracts at Wright State):

Internal ITRI Grant: "Development of a Touch-Screen Information Kiosk", October 1998, $5,500.

Principal Investigator: "Computational Science Programming and Algorithms: Work Plan for Course Development", Ohio Supercomputer Center, July 2007, $5,372. Additional funding $3,000, Summer 2008.

Principal Investigator: "Panels in Supersonic Flow - Computational Science Curriculum Module", NSF Grant/Capital University Subcontract, Summer 2008, $4,600.

Principal Investigator: "Vehicle Identification - Computational Science Curriculum Module", NSF Grant/Capital University Subcontract, Summer 2009, $4,600.

Principal Investigator: "Numerical Linear Algebra Behind the Google Search Engine - Computational Science Curriculum Module," NSF Grant/Capital University Subcontract, Summer 2010, $4,600.

Principal Investigator: "Integrated Mesh and Geometry Modeling with Sensitivities for Multidisciplinary Design Optimization," STAR-DP Task Order with UTC for AFRL/RBSD at WPAFB, July-December 2011, $49,713.

Principal Investigator: "Improvements to Air Vehicle Optimization and Analysis Sensitivity Model", STAR-DP Task Order with UTC for AFRL/RBSD at WPAFB, June – December 2012, $42,963.

Volunteer and Community Service:

- FISH Food Pantry supporter
- Habit for Humanity Volunteer
- Trained as Adult Literacy Tutor (Sinclair Community College, 2017)
- Caring Place – serving meals for needy families in Xenia, Ohio
- First Lutheran Church, Xenia, Ohio, Member (2008- current) and Church Council President (2015-2016).