Laura M. Grabowski

Curriculum Vitae

Associate Professor

Department of Computer Science
State University of New York at Potsdam
E-mail: grabowlm@potsdam.edu

Education

DOCTOR OF PHILOSOPHY — August 2009
Computer Science
Michigan State University, East Lansing, Michigan
Advisors: Dr. Charles Ofria, Dr. Robert T. Pennock
Dissertation: *The evolutionary origins of memory use in navigation*

MASTER OF SCIENCE — May 2002
Computer Science
University of Texas-Pan American, Edinburg, Texas.

MASTER OF ARTS — May 1983
Communications/Theatre
Bowling Green State University, Bowling Green, Ohio

MASTER OF ARTS — August 1982
Dance and Related Arts
Texas Woman's University, Denton, Texas

BACHELOR OF ARTS — June 1980
Major: French; Minor: Dance
Bowling Green State University, Bowling Green, Ohio

Awards and Honors

Teaching Awards and Recognition

- Faculty Affiliate, BEACON Center for the Study of Evolution in Action, 2014 – 2016
- University of Texas System Regents' Outstanding Teaching Award, Tenure-Track category, 2014.
  The Regents' Outstanding Teaching Award is a highly prestigious award with a rigorous selection process. For my nomination, I was in competition with faculty from all UT System universities except UT-Austin.
- Nominated by Department of Computer Science for UTPA Faculty Excellence Award for Outstanding Teaching, 2013
- UTPA BRIDGE Program Faculty Mentor of the Year, 2011 - 2012

Awards and Scholarships

- UTPA BRIDGE Program Faculty Mentor of the Year, 2011-2012
- Best Paper Award, MICWIC '07 (Michigan Celebration of Women in Computing): "Robot Navigation: A Developmental Approach"
- Michigan State University Fellow, 2004-2009
- Michigan State University IGERT Fellow, 2006-2007

Academic Honors and Honor Societies

- *Suma cum laude,* Master of Science, University of Texas-Pan American, 2002
- *Magna cum laude,* Bachelor of Arts, Bowling Green State University, 1980
- Pi Delta Phi, inducted 1980
- Phi Kappa Phi, inducted 1979
- Alpha Lambda Delta, inducted 1978
- National Merit Scholarship Finalist, 1976

Publications

Papers

Lehman, J., *et al.* (2018). The Surprising Creativity of Digital Evolution: A Collection of Anecdotes from the Evolutionary Computation and Artificial Life Research Communities. In review. Available from https://arxiv.org/abs/1803.03453

Leas, M., Dolson, E., Annis, R., Nahum, J., **Grabowski, L.**, and Ofria, C. (2016). The Prisoner's Dilemma, Memory, and the Early Evolution of Intelligence. *Proceedings of the Artificial Life Conference 2016.* MIT Press, pp. 408-416.

Reilly, C., Tomai, E., and **Grabowski, L. M.** (2015). An evaluation of how changes to the introductory computer science course sequence impact student success. In the proceedings of the 2015 Frontiers in Education Conference. El Paso, Texas, USA. October 2015.

Lawrence-Fowler, Wendy A., **Grabowski, L. M.** and Reilly, C. F. (2015). Bridging the divide: Strategies for college to career readiness in computer science. In the proceedings of the 2015 Frontiers in Education Conference. El Paso, Texas, USA. October 2015.

Grabowski, L. M., & Magaña, J. A. (2014). Building on Simplicity: Multi-stage Evolution of Digital Organisms. To appear in *Proceedings of the 14th International Conference on the Synthesis and Simulation of Living Systems (ALife XIV).* MIT Press, in press.

Grabowski L. M., Lawrence-Fowler, W. A., & Reilly, C. F. (2014). Emulating a Corporate Software Development Environment Through Collaboration Between Student Projects in Six Courses. To appear in *Proceedings of 2014 Frontiers in Education Conference,* IEEE, in press.

Grabowski, L. M, & Reilly, C. F. (2014). Promoting Inclusion of Underrepresented Populations in Computing. In *Proceedings of 2014 International Conference on Computational Science and Computational Intelligence (CSCI'14),* IEEE CPS.

Grabowski L. M., Bryson D. M, Dyer F. C., Pennock R. T., Ofria C. (2013). A Case Study of the *De Novo* Evolution of a Complex Odometric Behavior in Digital Organisms. *PLoS ONE* 8(4): e60466. doi:10.1371/journal.pone.0060466.

Lawrence-Fowler, W. A., **Grabowski L. M.**, Fowler, R. H. (2013). Using a Multidisicplinary Research Project to Strengthen Learning in Software Engineering. *Proceedings of the 9th International Conference on Frontiers in Education: Computer Science and Computer Engineering (FECS 2013)*, in press.

Lawrence-Fowler, W. A., **Grabowski L. M.**, Fowler, R. H., & Yedid, G. (2013). Convergence of Evolutionary Biology and Software Engineering: Putting Practice in Action. *Proceedings of 2013 Frontiers in Education Conference,* IEEE, 356-361.

Grabowski, L. M., Bryson, D. M., Dyer, F.C., Pennock, R. T., & Ofria, C. (2012). An analysis of the de novo evolution of a complex odometric behavior. *Proceedings of the 13th International Conference on the Synthesis and Simulation of Living Systems (ALife XIII).* MIT Press, pp. 585-586.

Grabowski, L. M. & Brazier, P. (2011). Robots, recruitment, and retention: broadening participation through CS0. *Proceedings of 2011 Frontiers in Education Conference,* IEEE, F4H1-F4H5.

Grabowski, L. M., Bryson, D. M., Dyer, F.C., Pennock, R. T., & Ofria, C. (2011). Clever creatures: case studies of evolved digital organisms. *Advances in Artificial Life, ECAL 2011: Proceedings of the Eleventh European Conference on the Synthesis and Simulation of Living Systems.* MIT Press, pp 276-283.

Grabowski, L. M., Bryson, D. M., Dyer, F.C., Ofria, C., & Pennock, R. T. (2010). Early evolution of memory use in digital organisms. *Proceedings of the 12th International Conference on the Synthesis and Simulation of Living Systems (ALife XII).* MIT Press, pp. 224-231.

Elsberry, W, R., **Grabowski L. M.**, Ofria C., & Pennock R. T. (2009). Cockroaches, Drunkards, and Climbers: Modeling the Evolution of Simple Movement Strategies Using Digital Organisms. *Proceedings of IEEE Symposium on Artificial Life (ALIFE 2009) Symposium Series on Computational Intelligence,* pp. 92-99.

Beckmann, B. E., **Grabowski, L. M.,** McKinley, P. K., & Ofria, C. (2009). Applying digital evolution to the design of self-adaptive software. *Proceedings of IEEE Symposium on Artificial Life (ALIFE 2009) Symposium Series on Computational Intelligence,* pp. 100-107.

Grabowski, L. M., Elsberry, W. R., Ofria, C., & Pennock, R. T. (2008). On the evolution of motility and intelligent tactic response. *GECCO '08: Proceedings of the 10th Annual Conference on Genetic and Evolutionary Computation,* pp. 209-216.

Beckmann, B., **Grabowski, L. M.**, McKinley, P., & Ofria, C. (2008). An autonomic software development methodology based on Darwinian evolution (Poster summary). *5th IEEE International Conference on Autonomic Computing*, June 2-6 2008, Chicago, IL.

Grabowski, L. M., Luciw, M., & Weng. J. (2007). A system for epigenetic concept development through autonomous associative learning. *6th International Conference on Development and Learning (ICDL 2007),* July 11-13, 2007, London, UK.

Grabowski, L. M. (2007). Robot Navigation: A Developmental Approach. *Michigan Celebration of Women in Computing (MICWIC '07).* March 30-31, 2007, Kellog Biological Station, Hickory Corners, MI. **Best Paper Award.**

Fowler, R. H., Tor, Y., Navarro, D., & **Grabowski, L.** (2003) "Efficient text content extraction and browsing using the Abstract Text Viewer." International Conference on Internet Computing 2003 Special Session on Web Intelligence. Las Vegas, NV.

Brazier, P., **Grabowski, L.** & Dietrich, G. (2003). "Closing the CS I – CS II gap: A Breadth-second approach." *33rd Annual Frontiers in Education Conference (FIE 2003)*, November 5-8, 2003, Boulder, CO.

Presentations

Reilly, C. F. & **Grabowski, L. M.** (2017). "Cultivating Diversity in a Small Computer Science

Department." ACM New York Celebration of Women in Computing. Rochester New York, April 21-22, 2017.

Grabowski, L. M. (2015). "Brilliance, Bit by Bit: Evolving Artificial Intelligence." Invited Talk, BEACON Congress. August 2015, BEACON Center, Michigan State University, East Lansing, MI.

Grabowski, L. M. (2015). *14th International Conference on the Synthesis and Simulation of Living Systems (ALife XIV).* July 30 – August 2, 2015, New York, NY.

Grabowski, L. M. (2012). "Toward Robotic Intelligence: Evolution of Memory Use in Digital Organisms." Hard to Define Events Workshop, *13th International Conference on the Synthesis and Simulation of Living Systems (ALife XIII).* July 19-22, 2012, Michigan State University, East Lansing, MI.

Grabowski, L. M. (2012). "The Avida Digital Evolution Platform." Tutorial, *13th International Conference on the Synthesis and Simulation of Living Systems (ALife XIII).* July 19-22, 2012, Michigan State University, East Lansing, MI.

Grabowski, L. M. & Brazier, P. (2011). Robots, recruitment, and retention: broadening participation through CS0. *2011 Frontiers in Education Conference.* October 12 – 15, 2011, Rapid City, South Dakota.

Grabowski, L. M., Bryson, D. M., Dyer, F.C., Pennock, R. T., & Ofria, C. (2011). Clever creatures: case studies of evolved digital organisms. *Eleventh European Conference on the Synthesis and Simulation of Living Systems (ECAL 2011).* August 8 – 12, 2011, Paris, France. Poster presentation.

Grabowski, L. M., Elsberry, W. R., Ofria, C., & Pennock, R. T. (2008). On the evolution of motility and intelligent tactic response. *Genetic and Evolutionary Computation Conference (GECCO '08)*, July 12-16, 2008, Atlanta, Georgia.

Beckmann, B. E., **Grabowski, L. M.,** McKinley, P. K., & Ofria, C. (2009). Applying digital evolution to the design of self-adaptive software. *IEEE Symposium Series on Computational Intelligence*. March 30-April 2, 2009, Nashville, Tennessee.

Grabowski, L. M. (2007). Robot Navigation: A Developmental Approach. *Michigan Celebration of Women in Computing (MICWIC '07).* March 30-31, 2007, Kellog Biological Station, Hickory Corners, Michigan. **Best Paper Award.**

Posters

Elsberry, W. R., **Grabowski, L. M.**, & Pennock, R. T. (2008). Cockroaches, drunkards, and climbers: modeling the evolution of simple movement strategies using digital organisms. *Evolution 2008*, June 20-24 2008, Minneapolis, MN.

Alicea, B. & **Grabowski, L.** (2006). From finding home to navigational primitives: using path-integration and tracking technologies to achieve navigational mitigation. *Augmented Cognition International*, San Francisco, CA.

Grants

BEACON NSF Center Sub-contract, Faculty Affiliate Program: 2014
$100,000

University of Texas-Pan American, Undergraduate Research Initiative:

"Evolving Simple Odometry in Digital Organisms." Student researcher: C. Cabrera. Award Amount: $1,920. 2014

University of Texas-Pan American, Undergraduate Research Initiative:
"Multi-stage evolution of complex features in digital organisms." Student researcher: M. Leas. Award Amount: $1,920 2014

University of Texas-Pan American C-STEM Student Research Program.
"Evolving Algorithms for Flexible Navigation for Autonomous Mobile Robots." Student researcher: A. Gutierrez. 2014

University of Texas-Pan American, Faculty Research Council:
"Evolving Algorithms for Route-based Navigation Using Digital Organisms." $2,430. 2013

University of Texas-Pan American, ADVANCE Graduate Assistant Support Program: "Evolving Algorithms for Flexible Navigation in Autonomous Mobile Robots." $8,333. 2013

University of Texas-Pan American, Faculty Research Council:
"Evolving behavior and complex features using digital organisms." $5000. 2012

University of Texas-Pan American, Undergraduate Research Initiative:
"Evolving flexible navigation behavior using digital organisms." $2000. 2010 – 2011

Research Interests

Computational intelligence; Digital evolution; Robot navigation; Evolutionary computation; Evolutionary robotics; Computer Science education

Natural intelligence; Evolutionary biology; Evolutionary-developmental biology; Cognitive science; Spatial cognition; Animal navigation; Behavioral flexibility.

Teaching and Research Experience

Associate Professor September 2016 –present
Department of Computer Science
State University of New York at Potsdam, Potsdam, New York

Associate Professor September 2015 – August 2016
Department of Computer Science
University of Texas Rio Grande Valley, Edinburg, Texas

Assistant Professor September 2009 – August 2015
Department of Computer Science
University of Texas Pan American, Edinburg, Texas

Graduate Researcher August 2004 – August 2009
Michigan State University, East Lansing, Michigan
Evolving Intelligence Project, Lyman Briggs College
Digital Evolution Laboratory, Department of Computer Science and Engineering
Embodied Intelligence Laboratory, Department of Computer Science and Engineering (2004 – 2007)

Graduate Teaching Assistant August 2005 – May 2006
CSE 101: Computing Concepts and Competencies
Department of Computer Science and Engineering
Michigan State University, East Lansing, Michigan

Instructor August 2003 – May 2004
COSC 1301: Microcomputer Applications
Department of Computer Science
South Texas Community College, McAllen, Texas

Lecturer August 2002 – July 2003
CSCI 1300: Foundations of Modern Information Technology
CSCI 1380: Computer Science I / Programming in C++
CSCI 1381: Foundations of Computer Science
Department of Computer Science
University of Texas-Pan American, Edinburg, Texas

Part-time Faculty June – July 2002
COMM 2312: Theatre Appreciation
Department of Communications
University of Texas-Pan American, Edinburg, Texas

Graduate Teaching Assistant August 2000 – May 2002
CSCI 1300: Foundations of Modern Information Technology
CSCI 1381: Foundations of Computer Science
Department of Computer Science
University of Texas-Pan American, Edinburg, Texas

Programmer /Developer May – August 2001
Center for Distance Learning
University of Texas-Pan American, Edinburg, Texas

Adjunct Lecturer
COMM 2417 Costuming and Makeup Spring 1986
Department of Communications
University of Texas-Pan American, Edinburg, Texas

Lecturer August 1983 – May 2000
Department of Health and Kinesiology
University of Texas-Pan American, Edinburg, Texas

Graduate Assistant August 1982 – May 1983
Musical theatre choreographer, assistant costumer
Department of Theatre
Bowling Green State University, Bowling Green, Ohio

Graduate Teaching Assistant August 1981 – May 1982
Folk and Square Dance, Beginning Modern Dance,
Beginning Ballet, Beginning Jazz Dance
Department of Dance
Texas Woman's University, Denton, Texas.

Instructor 1978 – 1980
Ballet, Modern Dance
Continuing Education Program
Bowling Green State University, Bowling Green, Ohio

Professional Activities

National/International Activities

- *International Society for Artificial Life*, Board Member (Appointed) 2015-present
- *European Conference on Artificial Life (ECAL) 2017*, Reviewer 2017
- *Artificial Life Conference 2016,* Reviewer 2017
- *Artificial Life Journal,* Reviewer 2015
- *European Conference on Artificial Life (ECAL 2015),* Technical Committee Member 2015
- *14th International Conference on the Synthesis and Simulation of Living Systems (ALife XIV).* 2014
  Technical Committee Member
- *13th International Conference on the Synthesis and Simulation of Living Systems (ALife XIII).* 2012
  - Technical Committee Member
  - Publicity Committee contributor
  - Co-organizer, "Hard To Define Events" Workshop
  - Co-organizer, "The Avida Digital Evolution Platform" Tutorial
  - Session chair
- *Frontiers in Education (FIE 2012, FIE 2013, FIE 2014, 2015),* 2012 – 2015
  Technical Committee Member
- *European Conference on Artificial Life (ECAL 2011),* Reviewer 2011
- *Frontiers in Education (FIE 2011),* Reviewer 2011

SUNY Potsdam:

- *Faculty Senate,* representative for Computer Science Department 2016 - Present

University of Texas Rio Grande Valley/ University of Texas Pan American:

- *Search Committee, Dean of Engineering of College of Computer Science and Engineering* 2015
- *Faculty Fellow*, College of Engineer and Computer Science 2014 – 2015
  ADVANCE Program
- *Co-advisor,* UTPA Chapter, Association for Computing Machinery's
  Committee on Women 2012 – Present
- *Secretary,* UTPA Program Review Committee 2012
- *Member,* UTPA Program Review Committee 2010 – 2013
- *Co-Chair,* Department of Computer Science Undergraduate Curriculum
  Committee 2010 – 2014
- *Mentor,* BRIDGE Scholars Program 2010 – 2012
- *Curriculum Development,*
  CSCI 1101 Introduction to Computer Science (new course development and
  Deployment) 2011
- Challenge-Based Instruction (CBI) course design, Computer Science I course
  (CSCI 1370, CSCI 1380) Summer 2010
- *Mentor,* Student Leadership Program 2009 – 2010
- *UTPA University Committee:* Program Review Committee 2010 – 2013
- *UTPA Civil Engineering Program Faculty Search Committee* 2012 – 2013
- *Publicist*, Department of Computer Science 2009 – 2013
- *Committees, Department of Computer Science*: 2009 – 2014
  Undergraduate Curriculum Committee, Graduate Committee,
  Scholarship Committee, Facilities Committee, Faculty Search Committee,
  Strategic Planning Committee (2011-2012)

Michigan State University:

- *Graduate student representative*

  - College of Engineering Research and Graduate Studies Committee 2007 – 2008
  - Engineering Graduate Studies and Research Committee, 2006 – 2007
  - Department of Computer Science, Chair Search Committee, Department of Computer Science 2006 – 2007
- *Graduate student panelist* 2006 – 2009
  Participated as invited panelist in discussions with prospective/new graduate students
- *Writer/contributor*
  Michigan State University College of Engineering graduate newsletter 2007 – 2009

University of Texas-Pan American:

- *Curriculum development: new major program* 1998 – 2000
- Development and initial approvals of new B.A. degree in Dance, University of Texas-Pan American. Program approved through all levels of university review. Program approved September 2001 by Texas Higher Education Coordinating Board (THECB).
- *Curriculum development: high school* 1999
  Developed dance curriculum for La Joya High School Academy for Communications, Performing and Visual Arts
- *Program Coordinator for Dance* 1998 - 2000
- *Department Librarian and Library Liaison* 1996 - 2000
- *Advisor, Freshman Kinesiology Majors* 1989 - 2000
- *Area Facilities Supervisor, Dance Studios/Support Areas* 1986 - 2000
- *Artistic Director / Managing Director, UTPA Dance Ensemble* 1983 - 2000

Current Professional Memberships

- American Association for Computing Machinery (ACM) 2000 to present.
- International Society of Artificial Life (ISAL) 2011 to present.
- American Society for Engineering Education (ASEE) 2011 to present.