

R. Paul Wiegand III

Department of Computer Science & Quantitative Methods
Winthrop University
Rock Hill, SC 29733 Phone: 803.323.4824
wiegandrp@winthrop.edu

Dr. Wiegand is a U.S citizen.

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Degrees

Ph.D., Computer Science, George Mason University (January, 2004)
“Analysis of Cooperative Coevolutionary Algorithms”

M.S., Computer Science, University of North Carolina at Charlotte (1999)

B.S., Computer Science, Winthrop University (1994)

Experience

Assistant Professor, Winthrop University, *August 2020 – present*

Interim Program Director of UCF’s Modeling & Simulation graduate Program, *August 2018 – August 2020*

Director of UCF’s Advanced Research Computing Center. *August 2017 – August 2020*

Associate Research Professor, Institute for Simulation & Training, University of Central Florida. *August 2017 – August 2020*

Co-Manager of Higher Performance Computing resources at UCF’s Advance Research Computing Center.
March 2015 – August 2017

Interim Program Director of UCF’s Modeling & Simulation graduate Program, *June 2014 – August 2015*

Associate Director of UCF’s Modeling & Simulation graduate Program, *September 2014 – June 2014*

Joint secondary appointment in Department of Electrical Engineering & Computer Science *April 2011 – present*

Assistant Research Professor, Institute for Simulation & Training, Univ. of Central Florida. *April 2011 – August 2017*

Research Associate, Institute for Simulation & Training, University of Central Florida. *June 2007 – April 2011*

Secondary joint faculty appointment with Department of Electrical Engineering & Computer Science. *2008 – present*

Scientific research consultant, ITT Advanced Engineering & Sciences (contracted to the Naval Research Laboratory).
November 2005 – May 2007

Adjunct faculty, Dept. of Computer Science at George Mason University. *Spring semester 2006, Fall semester 2002*

Postdoctoral fellowship, American Society of Engineering (served at the Naval Research Laboratory).
March 2004 – November 2005

Graduate research assistant, Department of Computer Science at George Mason Univ. *September 1999 – March 2004*

Adjunct faculty (Data Structures & Algorithm Analysis), Department of Computer Science at George Mason University.
Fall semester 2002

Part-time instructor, Central Piedmont Community College. *Spring 1999*

On-going trainer/educational resource (C++, Delphi, Object-Oriented Methodology), TrustMark, Inc. *August 1995 – August 1999*

Professional IT developer & consultant, Entity Systems & Programming, and TrustMark Inc. *May 1993 – August 1999*

Part-time student instructor (Introduction to C), Department of Computer Science at Winthrop University. *Spring Semester 1994*

Research Interests

General topics: robotics, machine learning, natural computation, coadaptive systems, robust representation/optimization of agents within human teams, high performance computing, algorithm analysis

Key specific topics: analysis of coadaptive systems for optimization and machine learning, theory and dynamics of coevolutionary systems, adaptive multiagent team reconfiguration and role assignment, runtime analysis of randomized algorithms

Postdoctoral Work

Supervisor: Kenneth A. De Jong, Group: Natural Computation group in the NCARAI at NRL (section 5514)

Activities: Contributed to research, publication, and grant-writing activities of the group; helped construct demonstrations of robotic technologies; helped coordinate student activities

Research projects: NRL research option “Coordinated Teams of Autonomous Systems”, ONR projects N0001405WX20057 and N0001405WX30001 on “Adaptation to Attrition and Degradations in Teams of Unmanned Vehicles”

Funded Research Activities

Total funding to UCF: \$3.7M By credit split: \$1.67M

Awarded: “Coevolutionary Peer Instruction” (PI, \$222K, NSF, 100%, July 2020 – present)

Completed: “Consulting for Phase I: STE LTE Autonomous Adaptive Networks” (PI, \$7,450, TiTenn, Inc & US Army Research Office, Nov 2020 – May 2021)

Completed: “Graduate Student Sponsored, SP20” (PI, \$13,833, Orlando Health Foundation, 100%, Dec 2019 – Jun 2020)

Completed: “Graduate Student Sponsored, FA20” (PI, \$13,833, Orlando Health Foundation, 100%, Jun 2019 – Dec 2019)

Completed: “Consulting for Augmented Reality Training SBIR” (PI, \$10,000, TiTenn, Inc., 50%, Oct 2019 – Nov 2019)

Completed: “Virtualizable Rendering Resources to Support the Army Integrated Training Environment and the Future Synthetic Training Environment” (Co-PI, \$241K, UCF Army Research Office, contrib: 50%, May 2018 – May 2019)

Completed: “Persistent Virtual Worlds for Simulation-based Training” (Co-PI, \$1.7M, incremental \$249K awarded to-date, US Army STTC, contrib.: 25%, Jan 2015 – Mar 2019)

Completed: “Enhancing the Integrated Training Environment (ITE)” (Co-PI, \$555K, US ARL via Battelle, contrib.: 20%, Aug 2016 – Mar 2018)

Completed: “Education-Focused GPU Cluster” (Co-PI, \$266K, UCF Internal Technology Fee, contrib.: 50%, 2018)

Completed: “Scalable scaffolding of novice programmers learning and automated analysis of their online activities” (PI, \$60K, NSF, contrib.: 100%, Sep 2015 – Aug 2017)

Completed: “CC*IIIE Engineer: Bridging IT and Research Computing at UCF” (PI, \$400K, NSF, contrib.: 100%, Sep 2014 – Aug 2017)

Completed: “CC-NIE Networking Infrastructure: Developing a Dedicated Research Network Infrastructure at the University of Central Florida” (PI, \$314K, NSF, contrib.: 50%, Oct 2013 – Mar 2015)

Completed: “Biologically Inspired Approaches for Reasoning on Complex Functional Networks (follow-on)” (PI, \$147K, NGA via University of Wyoming, contrib.: 100%, Aug 2011 – Sep 2014)

Completed: “The Central Florida MOSAIC Interface, Stage II” (Co-PI, \$50K, UCF, contrib.: 5%, May 2011 – Jun 2013)

Completed: “Study of dense matrix thermal and structural problems of interest to NASA for High Performance Computing Benchmark Suite” (Co-PI, \$54K, NASA/JPL via Intelligent Automation, Inc., contrib.: 0%, Apr 2011 – Aug 2012)

Completed: “High Performance Computing Benchmark Suite” (PI, \$125K, NASA/JPL via Intelligent Automation, Inc., contrib.: 60%, Aug 2010 – Aug 2012)

Completed: “Biologically Inspired Approaches for Reasoning on Complex Functional Networks” (PI, \$50K, NGA via University of Wyoming, contrib.: 100%, Aug 2010 – Aug 2011)

Completed: “Multicore Model Advancement Principles Demonstrated on STOKES” (PI, \$55K US ARL, contrib.: 100%, Aug 2010 – Aug 2011)

Completed: “Architecture to Support Interactive Training Simulation on Stokes HPC” (PI, \$5K, US ARL via Intelligent Automation, Inc., contrib.: 100%, Sep 2009 – Mar 2010)

Completed: “Learning robust behaviors in mixed-agent, heterogeneous teams” project in *Team Performance in Human-Agent Collaboration*, (PI, \$55K, US ARL, contrib.: 100%, Sep 2007 – Dec 2008)

Service Activities

Member of the CSQM Petitions Committee, Winthrop (2020 – present)

Member of the General Education Assessment Committee, Winthrop (2020 – present)

Interim program director of the Modeling & Simulation program (2018 – 2020)

Member of the Modeling & Simulation curriculum committee (2013 – present)

Member of the Modeling & Simulation admissions committee (2014 – 2018)

Member of UCF’s University Research Council (2011–present)

Chair for UCF’s *UCF Future Directions of Research Computing Committee* (2016)

Local arrangements coordinator for the Orlando *Southern Partnership in Advanced Networking* workshop (2016)

Faculty sponsor of the *Go Club* at UCF (on-going)

Organizer of the High Performance Computing Users Group of Orlando (HUGO, 2014–2016)

Interim program director of the Modeling & Simulation program (2014/2015)

Associate director of the Modeling & Simulation program (2014)

Chair of UCF’s University Research Council (2014/2015)

Faculty sponsor of the *Algorithms & Theory* student group (2010–2011)

Co-organizer of the Tenth Foundations of Genetic Algorithms (FOGA-2009, ACM)

Co-organizer of the “Introductory Tutorial on Coevolution” (2007 & 2008) and “Advanced Tutorial on Coevolution” (2006) at the Genetic and Evolutionary Computation Conference (GECCO)

Co-organizer of the “Coevolution Tutorial” (2005) at the Congress on Evolutionary Computation (CEC)

Co-moderator of the Evolutionary Computation Digest. *January 2001 – March 2005*

Co-chair of local arrangements for the 2005 Genetic and Evolutionary Computation Conference (2GECCO-2005, ACM)

Co-chair of the “Coevolution and Coadaptive Systems Workshop” at the 2005 AAAI Fall Symposium

Co-organizer of the first “Discussion Forum on Coevolution” (GECCO 2005) and “Understanding Coevolution Workshop” (GECCO 2002)

Co-organized summer lecture series on advanced topics in evolutionary computation. *Summer, 2002*

Co-organized “Workshop on Coevolution” at GECCO 2002

Reviewer for: *Evolutionary Computation Journal*, *Journal of Artificial Intelligence Research*, *IEEE Transactions on Systems, Man, and Cybernetics*, *IEEE Transactions on Evolutionary Computation*, *Journal of Theoretical Computer Science*, *PlosOne*, and *Algorithmica*

Academic Activities

Co-Director: Joint Evolutionary Computation / Natural Computation & Coadaptive Systems labs at UCF (2007–2020)

Co-Director: *Algorithms & Theory Group*, a graduate student group in EECS at UCF (2008–2013)

Courses taught:

- *Machine Learning* (2021 – present, Winthrop)
- *Intro. to Info. Processing* (2020 – present, Winthrop)
- *Programming Tools* (2020 – present, Winthrop)
- *Computer Science II* (2020 – present, Winthrop)
- *Mathematical Foundations of Modeling & Simulation* (2019 – 2020, M&S Program UCF)
- *An Interdisciplinary Approach to Data Visualization* (2015 – 2020, M&S Program UCF)
- *Data Visualization* (2018, Business Analytics Program, UCF)
- *Quantitative Aspects of Modeling & Simulation* (2011 – 2018, M&S Program UCF)
- *Machine Learning* (2007, 2009–2013, CS Program UCF)
- *Data Structures & Algorithm Analysis* (Spring 2002 & Fall 2006, CS Program GMU)
- *Introduction to Programming, Java* (Spring 1999, CPCC)
- *Various Independent Study, Thesis, & Dissertation*

Advised & Graduated:

- Armando Fandango (Ph.D., Modeling & Simulation, 2020)
- Avonie Parchment (Ph.D., Modeling & Simulation, 2018)
- Jeff (Phillip) Hanes (Ph.D., Modeling & Simulation, 2018)
- Oddny Brun (M.S., Modeling & Simulation, 2017)
- Sean Mondesire (Ph.D., EECS, 2014)
- Joshua Haley (Undergraduate HIM, EECS, 2014)
- Gautham Anil (Ph.D., EECS, 2012)

Currently advising:

- Oddny Brun (Ph.D., Modeling & Simulation, candidate)

Thesis & dissertation committee service (graduated):

- Vera Kazakova (Ph.D., Computer Science, 2020)
- Justin Hodges (Ph.D., Mechanical & Aerospace Engineering, 2020)
- Marcel Otto (Ph.D., Mechanical & Aerospace Engineering, 2019)
- Golam Bari (Ph.D., Computer Science – USF, 2019)
- Chathika Gunaratne (Ph.D., Modeling & Simulation, 2019)
- Marcel Otto (Ph.D., Mechanical & Aerospace Engineering, 2019)
- Myungho Lee (Ph.D., Modeling & Simulation, 2019)
- Salam Daher (Ph.D., Modeling & Simulation, 2018)
- Charles Trim (Masters, Modeling & Simulation, 2018)
- Lisa Soros (Ph.D., Computer Science, 2018)
- Matthew Hackett (Ph.D., Modeling & Simulation, 2018)
- William Rivera (Ph.D., Modeling & Simulation, 2015)
- Ryan Kasha (Ph.D., Modeling & Simulation, 2015)

- Travis Wiltshire (Ph.D, Modeling & Simulation, 2015)
- Shawn Chu-Quinn (M.S., Modeling & Simulation, 2015)
- Bryan Wilder (Undergraduate HIM, EECS, 2015)
- Chris Hollander (Ph.D, Modeling & Simulation, 2015)
- Charles Harris (Ph.D., Modeling & Simulation, 2014)
- Cassondra Puklavage (M.S., EECS, 2013)
- John Barry (M.S., Modeling & Simulation, 2013)
- Sebastian Risi (Ph.D., EECS, 2012)
- Syed Mohammed (Ph.D., Modeling & Simulation, 2012)
- David D'Ambrosio (Ph.D., EECS, 2011)
- Benito Graniela (Ph.D., Modeling & Simulation, 2011)
- Omar Thompson (Ph.D., Modeling & Simulation, 2011)
- Mohamed Abdel-Raheem (Ph.D., Civil Engineering, 2011)
- Joel Lehman (Ph.D., EECS, 2010)
- Jason Gauci (Ph.D., EECS, 2010)
- Aniket Vartak (Ph.D., EECS, 2010)
- Erin Hastings (Ph.D., EECS, 2009)
- Ahmed Bakhsh (Ph.D., Industrial Engineering, 2009)

Awards and Invitations

McKnight Foundation's *William R. Jones Outstanding Mentor* award (2014)

Invited collaborative participant of Dagstuhl "Theory of Evolutionary Algorithms" seminars (2004, 2006, 2008 & 2010)

Invited talk at the UCF *EECS Seminar Series* (2009)

Invited researcher for the Collaborative Research Center on "Computational Intelligence" at Universität Dortmund.
(February 17 – April 13, 2003)

Key Journal Publications and Book Chapters

Wiegand, R.P. (to appear). "Identifying Informatively Easy and Informatively Hard Concepts." *ACM Transactions in Theory of Computing Education*. [Journal Impact Factor: 1.72]

Pattanaik, S. & **Wiegand, R.P.** (2021). "Data Visualization." Chapter in *Handbook of Human Factors and Ergonomics*, 5th Edition.

Wu, A., **Wiegand, R.P.**, & Pradhan, R. (2020). "Response Probability Enhances Robustness in Decentralized Threshold-Based Robotic Swarms." *Swarm Intelligence*. [Journal Impact Factor: 2.208]

Doocy, L., Prager, S., Kider, J., & **Wiegand, R.P.** (2019) "Robust Path Matching and Anomalous Route Detection Using Posterior Weighted Graphs." *ACM Transactions on Spatial Algorithms and Systems*. [Journal Impact Factor: 2.845]

Hanes, J. and **Wiegand, R.P.** (2019). "Analytical and Evolutionary Methods for Finding Cut Volumes in Fault Trees Constrained by Location." *IEEE Transactions on Reliability*. [Journal Impact Factor: 2.790]

Bari, G., Gaspar, A., **Wiegand, R.P.**, Albert, J., Bucci, A., and Kumar, A. (2019). "Evolutionary Parsons Puzzles: Design Implementation & Preliminary Evaluation." *IEEE Transactions on Learning Technologies*. [Journal Impact Factor: 2.267]

Giroux, A.L., Harper, C., **Wiegand, R.P.** (2018). "Evaluating Multi-criteria Connection Mechanisms: a new algorithm for browsing digital archives." In *Digital Scholarship in the Humanities*, volume 33 (3).

Prager, S. & **Wiegand, R.P.** (2013) "Modeling Use of Space from Social Media Data Using a Biased Random Walker". *Transactions in GIS*, DOI: 10.1111/tgis.12069. [Journal Impact Factor: 1.298]

Wiegand, R.P. & Christopher Ellis (2012) “Physicomimetic Swarm Design Considerations: Modularity, Scalability, Heterogeneity, and the Prediction vs Control Dilemma.” Chapter in *Physicomimetics: Physics-Based Swarm Intelligence* (Springer)

Wiegand, R.P. (2011) “Coevolutionary Learning”. Chapter in *Encyclopedia of Machine Learning* (Springer).

Popvici, E., Bucci, A., **Wiegand, R.P.**, & de Jong, E.E. (2010) “Coevolutionary Principles”. Chapter in *Natural Computation Handbook* (Springer).

Panait, L., Luke, S., & **Wiegand, R.P.** (2006) “Biasing Coevolutionary Search for Optimal Multiagent Behaviors.” *IEEE Transactions on Evolutionary Computation* 10(6). [Journal Impact Factor: 5.545]

Jansen, T. & **Wiegand, R.P.** (2004) “The Cooperative Coevolutionary (1+1) EA.” *Evolutionary Computation*, 12(4). [Journal Impact Factor: 3.103]

FOGA Publications

Foundations of Genetic Algorithms is the leading venue for publishing work related the theory of evolutionary computation and is considered a near journal-level quality publication within the field of *Evolutionary Computation*.

Anil, G. & **Wiegand, R.P.** (2009) “Black-box search by elimination of fitness functions.” In *Foundations of Genetic Algorithms X*.

Wiegand, R.P., Liles, W., & De Jong, K. (2002) “Modeling Variation in Cooperative Coevolution Using Evolutionary Game Theory.” In *Foundations of Genetic Algorithms VII*.

Luke, S. & **Wiegand, R.P.** (2002) “Guaranteeing Coevolutionary Objective Measures.” In *Foundations of Genetic Algorithms VII*.

Other Refereed Publications

Wiegand, R.P. (2021). “Population-Based Novelty Searches Can Converge.” In *Proceedings of the 34th Florida Artificial Intelligence Research Symposium*.

Vitel, D., Gaspar, A., **Wiegand, R.P.** (2021). “A Neutral Rewrite Mutation Operator for Genetic Programming applied to Boolean Domain Problems.” In *Proceedings of the 34th Florida Artificial Intelligence Research Symposium*.

Brun, O., Kider, J., **Wiegand** (2021). “Particle-Based Flow Vorticity Analysis by Use of Second-Generation Wavelets.” In *Proceedings of the 2021 Computation Methods and Experimental Measurements Conference*.

Wiegand, R.P. (2020). “The Objective of Simple Novelty Search.” In *Proceedings of the 33rd Florida Artificial Intelligence Research Symposium*.

Fandango, A., **Wiegand, R.P.** (2020). “Impact of Augmenting GRU Networks with Iterative and Direct Strategies for Traffic Speed Forecasting.” In *Proceedings of the 33rd Florida Artificial Intelligence Research Symposium*.

Bari, G., Gaspar, A., **Wiegand, R.P.** (2018). “Selection Methods to Relax Strict Acceptance Condition in test-based Coevolution.” In *Proceedings of the 2018 Congress on Evolutionary Computation*. [Conference acceptance rate \approx 60%]

Fandango, A. & **Wiegand, R.P.** (2018). “Towards investigation of iterative strategy for data mining of short-term traffic flow with Recurrent Neural Networks”. In *Proceedings of the 2nd ACM International Conference on Information System and Data Mining*. [Acceptance rate unknown]

Gaspar, A., Bari, G., Kumar, A., Bucci, A., **Wiegand, R.P.**, and Albert, J. (2017) “Evolutionary Practice Problems Generation: More Design Guidelines.” In *Proceedings of the 29th International Florida Artificial Intelligence Symposium*. [Conference acceptance rate \approx 57%]

Caulkins, B. Goldiez, B.F. **Wiegand, R.P.**, Martin, G. Dumanoir, P., & Torres, T. (2017) “Emerging Network and Architecture Technology Enhancements to Support Future Training Environments.” In *Proceedings of the 2017 Interservice/Industry Training, Simulation, and Education Conference*.

- Gaspar, A., Bari, G., Kumar, A., Bucci, A., **Wiegand, R.P.**, and Albert, J. (2016) “Evolutionary Practice Problems Generation: Design Guidelines.” In *Proceedings of the IEEE 28th International on Tools with Artificial Intelligence*. [Conference acceptance rate \approx 31%]
- Wiegand, R.P.**, Bucci, A., Kumar, A., Albert, J., Gaspar, A. (2016). “A Data-Driven Analysis of Informatively Hard Concepts in Introductory Programming.” In *Proceedings of the 47th ACM Technical Symposium on Computer Science Education*. [Conference acceptance rate \approx 35%]
- Bucci, A., **Wiegand, R.P.**, Kumar, A., Albert, J., Gaspar, A. (2016). “Effectiveness of Dimension Extraction Methods for Student-Problem Performance Analysis.” In *Proceedings of the 28th International Florida Artificial Intelligence Symposium*. [Conference acceptance rate \approx 57%]
- Hanes, J., **Wiegand, R.P.** (2016). “Using L-Systems to Generate Fault Trees for Benchmarking & Testing.” In *Proceedings of the 28th International Florida Artificial Intelligence Symposium*. [Conference acceptance rate \approx 57%]
- Wu, A.S., **Wiegand, R.P.**, Pradhan, R., (2016). “Diversity in Top-N Recommendations via Probabilistic Selection of Neighbors in Collaborative Recommender Systems”. In *Proceedings of the 28th International Florida Artificial Intelligence Symposium*. [Conference acceptance rate \approx 57%]
- Mondesire, S. and **Wiegand, R.P.** (2014) “Forgetting Beneficial Knowledge in Decomposition-Based Reinforcement Learning Using Evolutionary Computation”. In *Proceedings of the 2014 International Conference on Genetic and Evolutionary Methods*. [Conference acceptance rate \approx 65%]
- Wiegand, R.P.** & Prager, S. (2013) “Simple Methods for Reasoning about Behavior Patterns on Graphs Given Extremely Sparse Observations”. In *The 5th International Conference on Advanced Geographic Information Systems, Applications, and Services*. [Conference acceptance rate \approx 29%]
- Mondesire, S. & **Wiegand, R.P.** (2013) “Forgetting Classification and Measurement for Decomposition-based Reinforcement Learning”. In *Proceedings of The 15th International Conference on Artificial Intelligence*. [Conference acceptance rate \approx 25%]
- Mondesire, S. & **Wiegand, R.P.** (2011) “Evolving a non-playable character team with layered learning.” In *Proceedings of IEEE Symposium on Computational Intelligence in Multi-criteria Decision-Making*.
- Anil, G. & **Wiegand, R.P.** (2011) “Domain Specific Analysis and Modeling of Optimal Elimination of Fitness Functions with Optimal Sampling.” In *Proceedings of the 2011 Genetic and Evolutionary Computation Conference*. [Conference acceptance rate \approx 38%]
- Ghosh, C., **Wiegand, R.P.**, Goldiez, B., & Dere, T. (2010) “An Architecture Supporting Large Scale MMOGs.” In *Proceedings of the 2010 Distributed Simulation & On-Line Gaming Conference*.
- Wiegand, R.P.**, Anil, G., Garibay, I., Garibay, O., & Wu, An. (2009) “On the Performance Effects of Unbiased Module Encapsulation.” In *Proceedings for the 2009 Genetic and Evolutionary Computation Conference*. [Conference acceptance rate \approx 41%]
- Ellis, C. & **Wiegand, R.P.** (2008) “Actuation Constraints and Artificial Physics Control.” In *Proceedings from the Tenth International Conference on Parallel Problem Solving from Nature*. [Conference acceptance rate \approx 55%]
- Wiegand, R.P.**, Potter, M., Sofge, D., & Spears, W. (2006) “A Generalized Graph-Based Method for Engineering Swarm Solutions to Multiagent Problems.” In *Proceedings for the Ninth International Conference on Parallel Problem Solving from Nature*. [Conference acceptance rate \approx 42%]
- Wiegand, R.P.** & Potter, M. (2006) “Robustness in Cooperative Coevolution.” In *Proceedings from the 2006 Genetic and Evolutionary Computation Conference*. [Conference acceptance rate \approx 46%]
- Jansen, T. & **Wiegand, R.P.** (2004) “Bridging the Gap Between Theory and Practice.” In *Proceedings from the Eighth International Conference on Parallel Problem Solving from Nature*. [Conference acceptance rate \approx 33%]
- Panait, L, **Wiegand, R.P.**, & Luke, S. (2003) “Improving Coevolutionary Search for Optimal Multiagent Behaviors.” In *Proceedings of the 18th International Joint Conference on Artificial Intelligence*. [Conference acceptance rate \approx 21%]

- Potter, M., **Wiegand, R.P.**, Blumenthal, J., & Sofge, D. (2005) "Effects of Experience Bias When Seeding With Prior Results." In *Proceedings from the 2005 Congress of Evolutionary Computation*. [Conference acceptance rate $\approx 57\%$]
- Panait, L., **Wiegand, R.P.**, & Luke S. (2004) "A Visual Demonstration of Convergence Properties of Cooperative Coevolution." In *Proceedings from the Eighth International Conference on Parallel Problem Solving from Nature*. [Conference acceptance rate $\approx 33\%$]
- Panait, L., **Wiegand, R.P.**, & Luke S. (2004) "A Sensitivity Analysis of a Cooperative Coevolutionary Algorithm Biased for Optimization." In *Proceedings from the 2004 Genetic and Evolutionary Computation Conference*. [Conference acceptance rate $\approx 50\%$]
- Wiegand, R.P.** & Sarma, J. (2004) "Spatial Embedding and Loss of Gradient in Cooperative Coevolutionary Algorithms." In *Proceedings from the Eighth International Conference on Parallel Problem Solving from Nature*. [Conference acceptance rate $\approx 33\%$]
- Jansen, T. & **Wiegand, R.P.**, (2003) "Sequential versus Parallel Cooperative Coevolutionary (1+1) EAs." In *Proceedings of the 2003 Congress on Evolutionary Computation*. [Conference acceptance rate $\approx 65\%$]
- Jansen, T. & **Wiegand, R.P.** (2003) "Exploring the Explorative Advantage of the CC (1+1) EA." In *Proceedings of the 2003 Genetic and Evolutionary Computation Conference*. [Conference acceptance rate $\approx 47\%$]
- Wiegand, R.P.**, Liles, W., & De Jong, K. (2002) "The Effects of Representational Bias on Collaboration Methods in Cooperative Coevolution." In *Proceedings of the Seventh Conference on Parallel Problem Solving from Nature*. [Conference acceptance rate $\approx 50\%$]
- Wiegand, R.P.**, Liles, W., & De Jong, K. (2002) "Analyzing Cooperative Coevolution with Evolutionary Game Theory." In *Proceedings for the 2002 Congress on Evolutionary Computation*. [Conference acceptance rate $\approx 47\%$]
- Wiegand, R.P.** (1998) "Applying Diffusion to a Cooperative Coevolutionary Model". In *Proceedings of Parallel Problem Solving from Nature V* [Conference acceptance rate $\approx 54\%$]

Dissertation and Thesis

- Wiegand, R.P.** (2004) "Analysis of Cooperative Coevolutionary Algorithms." Ph.D. thesis, George Mason University. Advisor: Kenneth De Jong.
- Wiegand, R.P.** (1999) "A Mutable Tagging Scheme for Cooperative Coevolutionary Algorithms", Masters Thesis, University of North Carolina Charlotte. Advisor: Zbigniew Michalewicz