

Marc Destefano

Lecturer of Cognitive Science
Associate Director, CogWorks Laboratory
Game and Simulation Arts & Sciences Program
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Present Position:

- Lecturer of Game and Simulation Arts & Sciences
- Lecturer of Cognitive Science
- Associate Director, CogWorks Laboratory
- Core Researcher, Immersive Intelligent Learning Environments Initiative
- Core Researcher, Emergent Reality Laboratory

Education:

- Ph.D., Cognitive Science. Rensselaer Polytechnic Institute, Troy NY, 2010. Dissertation: The Mechanics of Multitasking: The Choreography of Perception, Action and Cognition over 7.05 Orders of Magnitude. Advisor: Wayne D. Gray.
- M.S., Psychology. Rensselaer Polytechnic Institute, Troy NY, 2001.
- B.S., Computer Science and Psychology. Rensselaer Polytechnic Institute, Troy NY, 1998.

Professional Experience:

- 2016: Consultant, *Hot Dogs, Horseshoes & Hand Grenades*. SteamVR.
- 2013: Core infrastructure software engineer, *The Mandarin Project*.
- 2009-2010: Chair, Game and Simulation Arts & Sciences Program, School of Humanities, Arts, and Social Sciences, Rensselaer Polytechnic Institute, Troy NY.
- 2004-2011: Clinical Assistant Professor, Department of Cognitive Science, Rensselaer Polytechnic Institute, Troy NY.
- 2004-2008: Associate, Social and Behavioral Research Laboratory, Rensselaer Polytechnic Institute, Troy NY.
- 2001-2004: Technical Director, Rensselaer Artificial Intelligence and Reasoning Laboratory, Rensselaer Polytechnic Institute, Troy NY.
- 2003-2004: Adjunct Professor, Department of Cognitive Science, Rensselaer Polytechnic Institute, Troy NY.
- 2001-2002: Lecturer, Department of Philosophy, Psychology and Cognitive Science, Rensselaer Polytechnic Institute, Troy NY.
- 1997-1999: Undergraduate Researcher, Minds & Machines Laboratory, Rensselaer Polytechnic Institute, Troy NY.

Grants and Consulting:

- 2016: Co-PI. “An Interactive Graphical System for Teaching Logical Reasoning.” Rensselaer’s Undergraduate Education Beta Classroom Seed-Grant Program, awarded 4/6/16.
- 2016: Co-PI. “Our Town.” NEA grant submitted 3/3/16. Pending.
- 2015: Consultant, “Digital Blackfriars.” NEH grant submitted 12/10/15. Pending.
- 2015: Consultant, “Our Town: A New Media Theatrical Experience.” FLASH grant awarded by Rensselaer’s School of Humanities, Arts, and Social Sciences.
- 2014: Co-PI, “Fairlandia: An Augmented Reality Mobile Application for the World’s Fair.” FLASH grant awarded by Rensselaer’s School of Humanities, Arts, and Social Sciences.
- 2014-2015: Researcher, “Elements of Extreme Expertise in Cognitive Skill.” Office of Naval Research.
- 2007-2012: Consultant, “Complex learning and skill transfer with video games”, Multidisciplinary University Research Initiative (MURI) award, Office of Naval Research.
- 2010: Researcher, “Cognitive Workload in Multimodal Task Environments,” Office of Naval Research.
- 2002-2006. Subcontractor on Contract #MDA-904-03-C-0408 to Booz Allen Hamilton from the Advanced Research and Development Activity, Novel Intelligence from Massive Data Program.

Journal Editorial Activity

- Game Studies, 2010.
- International Journal of Human-Computer Studies, 2011.
- Acta Psychologica, 2011.
- Transactions on Affective Computing, 2012.
- Topics in Cognitive Science, 2015, 2016.

Book Publisher Editorial Activity

- Technical Editor of “Introduction to Game Design, Prototyping, and Development” by Jeremy Gibson. 2014. Pearson Education Group.
- Proposal Reviewer, “Handbook of Cognitive Dynamic Systems” by Simon Haykin. 2011. John Wiley & Sons.
- Reviewer, “Video Game Design Strategies” by Joseph Saulter. 2006. McGraw-Hill
- Reviewer, “Managing Game Development” by Joseph Saulter. 2006. McGraw-Hill.

Professional Affiliations:

- Cognitive Science Society
- International Game Developers Association
- Digital Games Research Association

Teaching:

Core Game and Simulation Arts & Sciences Courses:

- Game Design, Fall Semester. 2002-Present
- Game Mechanics, Spring Semester. 2005-Present
- Game Development I, Fall Semester. 2001-Present
- Game Architecture, Spring Semester. 2011-Present
- Game Development II, Spring Semester. 2007-2010, 2012

Other Undergraduate Courses:

- Introduction to Cognition and Gaming
- Advanced Game Design
- Advanced Game Development
- Independent Games Festival
- 3D Game Programming
- Game AI
- Advanced Game Architecture
- GSAS Research Project

Thesis Supervision

- Jason Wodicka, M.S., 2004. Bard: A System for Dynamic Interactive Storytelling
- Robert Stewart, B.S. 2014
- Ryan Hatlelid, Nicholas Korn, Nathanael Newby-Kew, B.S., 2010
- Dan Nottingham, B.S., 2009
- Nadav Pechthold, Jennifer Ash, B.S., 2008
- Erin Spencer, B.S., 2007
- Sylvia Luxemburg, B.S., 2006
- Brian Gibson, Nicholas Cooper, Robert Davis, Cory McWilliams, B.S., 2005
- Timothy Sweeney, John Puccino, B.S., 2004

Rensselaer Computer Game Development Academy, Summers of 2006-2013.

Publications and Proceedings:

- Gray, W. D. and Destefano, M. (2016). Searching not under the lightpole but where we dropped our keys: Using changepoint detection to shine the light on periods of strategy invention and change. In 57th Annual Meeting of the Psychonomic Society.
- Destefano, M. & Gray, W.D. (2016). Where Should Researchers Look for Strategy Discoveries during the Acquisition of Complex Task Performance? The case of Space Fortress. In Papafragou, A., Grodner, D., and Trueswell, J., editors, Proceedings of the 38th Annual Conference of the Cognitive Science Society.
- Chang, B., Destefano, M. (2014). Game engines and immersive displays. Post-Meeting Proceedings of IS&T/SPIE Electronic Imaging 2014. San Francisco, CA: Society of Photographic Instrumentation Engineers.
- Gray, W. D., Hope, R. M., Lindstedt, J. K., & Destefano, M. (2014). Elements of extreme expertise: searching for differences in microstrategies deployed by experts and novices. Plenary Presentation at the 12th Biannual Meeting of the German Cognitive Science Society. Universität Tübingen. Tübingen, Germany.
- Gray, W. D., Lindstedt, J. K., Hope, R. M., & Destefano, M. (2012). An update on the whys and wherefores of Space Fortress 5 and the mysteries of Tetris. Talk presented at University College London. University College London. London, England.
- Destefano, M., Lindstedt, J. K., & Gray, W. D. (2011). Use of complementary actions decreases with expertise. In L. Carlson, C. Hölscher & T. Shipley (Eds.), Proceedings of the 33rd Annual Conference of the Cognitive Science Society (pp. 2709-2014). Austin, TX: Cognitive Science Society.
- Gray, W. D., Hope, R., Destefano, M., Schoelles, M. J., Ralph, J., & Lindstedt, J. (2011). Microstrategies in Space Fortress. ONR project review meeting. Arlington, VA.
- Destefano, M. (2010). The Mechanics of Multitasking: The Choreography of Perception, Action, and Cognition over 7.05 Orders of Magnitude. Rensselaer Polytechnic Institute, Troy, NY.
- Destefano, M. (2010). Modeling space fortress. 17th Annual ACT-R workshop. Philadelphia, PA.
- Changizi, M.A., Destefano, M. (2009) Common scaling laws for city highway systems and the mammalian neocortex. Complexity 15: 11-18.
- Destefano, M. & Gray, W. D. (2009). Space fortress and cognitive control. Beckman Institute, University of Illinois.
- Destefano, M. & Gray, W. D. (2008b). Choreographing cognition, perception, and motor control over 7.03 orders of magnitude. 13th Annual ACT-R Summer Workshop. Carnegie Mellon University, Pittsburgh, PA.
- Destefano, M., Gray, W.D. (2008a) An integrated model of action video game play. In V. Sloutsky, B. Love & K. McRae (Eds.), Poster presented at the 30th Annual Meeting of the Cognitive Science Society (pp. 2016). Austin, TX: Cognitive Science Society.
- Destefano, M. (2008) Rapid inter-process communication between ACT-R and external simulations. Presented at the 15th Annual ACT-R Workshop, Pittsburgh, PA.

- Destefano, M., Gray, W.D. (2007) Use of Complementary Actions Decreases with Expertise. Poster presented at the 29th Annual Meeting of the Cognitive Science Society, Nashville, TN.
- Gray, W. D. & Destefano, M. (2007). Deconstructing video games. Kickoff meeting at University of Rochester.
- Bringsjord, S., Khemlani, S., Arkoudas, K., McEvoy, C., Destefano M., Daigle, M. (2005) Advanced Synthetic Characters, Evil, and E*. Proceedings of the 6th Annual European GAME-ON Conference. De Montfort University, Leicester, United Kingdom.
- Noble, R., Ruiz, K., Destefano, M., Mintz, J. (2003) Terms of Engagement. Proceedings of Level Up, the 1st International Conference of the Digital Games Research Association. University of Utrecht, The Netherlands

Presentations:

- Disrupting the Grind: Case Studies in Strategy Insight. ONR Cognitive Science of Learning Program Review, 10/14/2015.
- Unity 101. Presentation to the Capital Region Unity 3D Developers Group, 12/1/14.
- Panel Member, Game Design and Writing Workshop. Excelsior College, Albany, NY. 5/11/12.
- Math, Code, Games. Presentation to the Center for Talented Youth. Siena College, 8/3/2011.
- Games, Learning, and the Cognitive Spectrum. Knewton, 9/23/10.
- Destefano, M. The Choreography of Cognition. Naval Undersea Warfare Center, Newport, RI. 4/15/10
- Destefano, M. The Mechanics of Multitasking. Issues in Cognitive Science Series, Rensselaer. 9/30/09
- Destefano, M., Gray, W.D. Space Fortress and Cognitive Control. Office of Naval Research. 4/29/09
- Destefano, M. Choreographing Cognition, Perception, and Motor Control over 7.03 Orders of Magnitude. Issues in Cognitive Science Series, Rensselaer. 10/15/08
- Kantrowitz, N., Destefano, M. Pygame: Modern Game Development. PyCon, Chicago IL. 3/13/08
- Destefano, M., Mintz, J. The New Bachelor of Science Degree in GSAS. Rensselaer Alumni Weekend. 2/8/07
- Destefano, M. The Cognition of Engagement. 12/6/05
- Destefano, M. Minds, Machines, and Games. Guest Lecture, Minds & Machines, Rensselaer. 9/8/05
- Panel member, IBM Game Industry Press Briefing. Hawthorne Industry Solutions Lab, Hawthorne NY. 8/11/04
- Destefano, M. AI in Games. Guest Lecture, Artificial Intelligence, Rensselaer. 4/21/05
- Bringsjord, S., Arkoudas, K., Yang, Y., Shilliday, A., Taylor, J., Destefano, M. New Architectures, Algorithms, and Designs that Lead to Implemented Machine Reasoning over

Knowledge in Epistemic and Deontic Formats, in the Service of Wargaming. AFRL Rome, 2/23/05

- Destefano, M. Getting into the Game. Drexel University, 5/24/04
- Destefano, M. Random Ramblings on AI in games. Guest Lecture, Cognitive Engineering. 4/15/04
- Destefano, M. A Ludologist Admits (Partial!) Defeat. Rensselaer Minds & Machines Seminar, 4/14/04
- Destefano, M. Creating an Ontology of 'A Game World'. Rensselaer Minds & Machines Seminar. 2/04/04
- Bringsjord, S., Shilliday, A., Taylor, J., Khemlani, S., Destefano, M., Arkoudas, K. The Status of Slate. ARDA Review, University of Maryland, College Park. 4/5/04
- Bringsjord, S., Shilliday, A., Taylor, J., Destefano, M. What the RAIR Lab Offers for Wargaming. Air Force Research Lab, Rome, NY, 1/7/04
- Bringsjord, S., Shilliday, A., Taylor, J., Wodicka, J., Destefano, M. Status Update of RAIR Lab's NIMD/Sage R&D. ARDA review, San Diego, CA. 11/12/03
- Destefano, M. Towards a Formal Understanding of Games. Rensselaer Minds & Machines Seminar. 3/19/03
- Destefano, M., Bringsjord, S. Philosophical Robotics. SUNY Stony Brook. 11/20/02

Service:

- Game and Simulation Arts & Sciences Committee, 2007 - Present.
- GameFest Games Coordinator, 2004 - Present.
- GameFest Competition Coordinator, 2007 - Present.
- Search Committee, Assistant Professor in GSAS, 2015-2016.
- Search Committee, Professor of Practice in Game Writing, 2015
- Search Committee, Assistant Professor in Music and Media, 2014-2015.
- HASS Revenue Generation Task Force member. 2015.
- Interactive Intelligent Learning Environments Committee, 2013 - Present.
- Search Committee, Lecturer in Writing. Summer 2013.
- Search Committee, Applications Support Analyst. Spring 2013.
- GSAS Faculty Search (3 TT lines, open rank). 2009-2010.

Community Service

- Game Design Workshop, Mobile Maker Edition. Games in Education Conference. Week of July 25-29, 2016.
- Game Design Workshop, Mobile Maker Edition. Games in Education Conference. Week of August 17-21, 2015.
- Teen Game Jam. Albany Public Library, 1/19/15.

- Game Design Workshop, Mobile Maker Edition. Games in Education Conference. Week of August 11-15, 2014.
- Virtual Reality Tech Demo. Albany Public Library, 5/7/14.
- Director, Much Ado About Nothing, RPI Players, Fall 2012.