

Paul Gestwicki

- CONTACT INFORMATION** Computer Science Department, RB455 *Telephone:* 765-285-8668
Ball State University *Email:* pvgestwicki@bsu.edu
Muncie, IN 47306 *Web:* <http://www.cs.bsu.edu/~pvg>
- RESEARCH INTERESTS** Serious game design and development; Computer Science and interdisciplinary education; interactive software and hybrid systems.
- EDUCATION** **University at Buffalo**, Buffalo, New York
- Ph.D., Computer Science and Engineering, May 2005
Title: *Interactive Visualization of Object-Oriented Languages*
Advisor: Bharat Jayaraman
 - M.S., Computer Science and Engineering, May 2000
- SUNY College at Fredonia**, Fredonia, New York
- B.S., Computer Science, May 1998
- ACADEMIC EXPERIENCE** **Ball State University**, Muncie, Indiana
- | | |
|--|-----------------------|
| <i>Professor, Computer Science</i> | Fall 2018–Present |
| <i>Associate Professor, Computer Science</i> | Fall 2010–Summer 2018 |
| <i>Assistant Professor, Computer Science</i> | Fall 2005–Summer 2010 |
- University at Buffalo**, Buffalo, New York
- | | |
|--|---|
| <i>Research and Teaching Assistant</i> | Fall 1998–Spring 2005 |
| <i>Casual Lecturer</i> | Sum 1999, 2000; Spr–Sum 2001; Fall 2004 |
- Erie Community College**, Buffalo, New York
- | | |
|-------------------|-------------|
| <i>Instructor</i> | Spring 2003 |
|-------------------|-------------|
- JOURNAL ARTICLES** Paul Gestwicki. Godot engine and checklist-based specifications: Revising a game programming class for asynchronous online teaching. *Journal of Computing Sciences in Colleges*, 37(4):30–40, October 2021
- Paul Gestwicki and Alexander Gestwicki. A father and son experience in *Gloomhaven*. *Well Played*, 8(2), 2019
- Paul Gestwicki and Brian McNely. Interdisciplinary projects in the academic studio. *Transactions on Computing Education*, 16(2):8:1–8:24, March 2016
- Paul Gestwicki. Teaching game programming with PlayN. *Journal of Computing Sciences in Colleges*, 31(1):90–97, October 2015
- Christopher Dibble, II and Paul Gestwicki. Refactoring code to increase readability and maintainability: A case study. *Journal of Computing Sciences in Colleges*, 30(1):41–51, October 2014
- Paul Gestwicki and Khuloud Ahmad. App Inventor for Android with studio-based learning. *Journal of Computing Sciences in Colleges*, 27:55–63, October 2011. Presented at the Consortium of Computing Sciences in Colleges 2011 Midwest Conference
- Paul Gestwicki and Khuloud Ahmad. A pilot study on the impact of creative achievement

on academic achievement in media-oriented cs1. *Journal of Computing Sciences in Colleges*, 26:85–92, October 2010. Presented at the Consortium of Computing Sciences in Colleges 2010 Midwest Conference

Paul Gestwicki, Carrie Arnold, and Joshua Gevirtz. Designing a proactive multi-touch display to support professional networking and planning at an interdisciplinary conference. *Journal of the International Digital Media & Arts Association*, 7(1):19–25, 2010. Presented at the 2009 Meeting of the International Digital Media & Arts Association

Paul Gestwicki, Andrew Haddad, Austin Toombs, and Fu-Shing Sun. An Experience Report and Analysis of Java Technologies in Undergraduate Game Programming Courses. *The Journal of Computing Sciences in Colleges*, 25(1):102–108, 2009. Presented at the Consortium of Computing Sciences in Colleges 2009 Midwest Conference

Paul Gestwicki, Fu-Shing Sun, and Benjamin Dean. Teaching game design and game programming through interdisciplinary courses. *Journal of Computing Sciences in Colleges*, 24(1):110–115, 2008. Presented at the Consortium of Computing Sciences in Colleges 2008 Midwest Conference

Paul Gestwicki and Fu-Shing Sun. Teaching design patterns through computer game development. *Journal on Educational Resources in Computing*, 8(1):1–22, 2008

PROCEEDINGS

Paul Gestwicki, Jennifer Coy, and David Largent. The forms and uses of undergraduate student game design logs. In *Proceedings of the International Conference on Meaningful Play*. Michigan State University, 2022

Paul Gestwicki and Katelynn Rader. Designing context-sensitive geolocative moderated group activity games. In *Proceedings of the International Academic Conference on Meaningful Play*, 2018

Paul Gestwicki. Design and evaluation of an undergraduate course on software development practices. In *Proceedings of the 49th ACM Technical Symposium on Computer Science Education*, pages 221–226, 2018

Paul Gestwicki, Kaley Rittichier, and Austin DeArmond. Culture-narration games: A definition and pilot study. In *Proceedings of Games+Learning+Society Conference (GLS 12)*, pages 261–270, 2016

Paul Gestwicki and Kaleb Stumbaugh. Observations and opportunities in cybersecurity education game design. In *Computer Games: AI, Animation, Mobile, Multimedia, Educational and Serious Games (CGAMES), 2015*, pages 131–137, July 2015

Paul Gestwicki. *Equations Squared*: Combining educational game design theory with an equations learning progression to design a mathematics assessment game. AERA Online Paper Repository, 2014. Presented at the 2014 American Educational Research Association Meeting

Paul Gestwicki and Brian McNely. Empirical evaluation of periodic retrospective assessment. In *Proceeding of the 44th ACM technical symposium on Computer science education, SIGCSE '13*, pages 699–704, New York, NY, USA, 2013. ACM

Khuloud Ahmad and Paul Gestwicki. Studio-based learning and app inventor for android in an introductory cs course for non-majors. In *Proceeding of the 44th ACM*

technical symposium on Computer science education, SIGCSE '13, pages 287–292, New York, NY, USA, 2013. ACM

Paul Gestwicki and Brian McNely. A case study of a five-step design thinking process in educational museum game design. In *Proceedings of the International Academic Conference on Meaningful Play*, 2012

Brian J. McNely, Paul Gestwicki, Ann Burke, and Bridget Gelms. Articulating everyday actions: an activity theoretical approach to scrum. In *Proceedings of the 30th ACM international conference on Design of communication*, SIGDOC '12, pages 95–104, New York, NY, USA, 2012. ACM

Paul Gestwicki. The entity system architecture and its application in an undergraduate game development studio. In *Proceedings of the Seventh International Conference on the Foundations of Digital Games*, FDG '12, pages 73–80, New York, NY, USA, 2012. ACM

Brian J. McNely, Paul Gestwicki, J. Holden Hill, Philip Parli-Horne, and Erika Johnson. Learning analytics for collaborative writing: a prototype and case study. In *Proceedings of the 2nd International Conference on Learning Analytics and Knowledge*, LAK '12, pages 222–225, New York, NY, USA, 2012. ACM

Ellen Spertus, Mark L. Chang, Paul Gestwicki, and David Wolber. Novel approaches to CS 0 with App Inventor for Android. In *SIGCSE '10: Proceedings of the 41st ACM technical symposium on Computer science education*, pages 325–326, New York, NY, USA, 2010. ACM

Brian McNely and Paul Gestwicki. Using realtime writing technology to enable continuous formative evaluation of collaborative knowledge work. In *Proceedings of the 2010 Workshop on Computer-Supported Peer-Review in Education (CSPRED)*, 2010

Paul Gestwicki. Work in progress: Curriculum visualization. In *Proceedings of the 38th Annual Frontiers in Education Conference*, pages T3E 13–14, October 2008

Scott D. Anderson, Jonas Boustedt, Caroline M. Eastman, Dan Garcia, Paul Gestwicki, Robert McCartney, Margaret Menzin, and Josh Tenenber. It seemed like a good idea at the time. In *Proceedings of the ACM Technical Symposium on Computer Science Education*, March 2008

Paul Gestwicki and Fu-Shing Sun. On games, patterns, and design. In *Proceedings of the 2007 Science of Design Symposium*, March 2007

Paul Gestwicki and Fu-Shing Sun. Game software and the design process. In *Proceedings of the 2007 Design Science Research in Information Systems and Technology Conference*, pages 362–378, May 2007

Paul V. Gestwicki. Computer games as motivation for design patterns. In *SIGCSE '07: Proceedings of the 38th SIGCSE technical symposium on Computer science education*, pages 233–237, New York, NY, USA, 2007. ACM Press

Paul Gestwicki and Bharat Jayaraman. An architecture and implementation of JIVE. In *Proceedings of the ACM Symposium on Software Visualization*, pages 95–104, May 2005

Paul Gestwicki and Bharat Jayaraman. JIVE: Java interactive visualization environment. In *Companion to the 19th annual ACM SIGPLAN Conference on Object-Oriented Programming Systems, Languages, and Applications*, pages 226–228, October 2004

Ashim Garg, Paul Gestwicki, and Bharat Jayaraman. Interactive program visualization and graph drawing. In *Proceedings of the International Conference on Discrete Mathematics and its Applications*, December 2004

Paul Gestwicki and Bharat Jayaraman. Interactive visualization of Java programs. In *Proceedings of the IEEE Symposium on Human-Centric Computing, Languages, and Environments*, pages 226–235, September 2002

INVITED
PRESENTATIONS

Paul Gestwicki. Godot Engine Workshop. Ivy Tech IT Club, March 2021.

Paul Gestwicki. Introduction to Game Development with Unreal Engine 4. Ivy Tech IT Club, November 2019.

Paul Gestwicki. Crushing the Meeples. Muncie DevFest, September 2019.

Paul Gestwicki. Games, fun, and learning. Invited colloquium presentation at IUPUI, February 2017.

Paul Gestwicki. Games, fun, and learning. Invited colloquium presentation at Illinois State University, February 2014

Paul Gestwicki. Serious game development with java. Invited presentation at the Indianapolis Java Users Group, June 2013

Paul Gestwicki. Games, fun, and learning. Invited presentation at Educational Testing Service (ETS) headquarters in Princeton, NJ, November 2012

Paul Gestwicki. *Equations Squared* demo. Invited presentation at Educational Testing Service (ETS) headquarters in Princeton, NJ, November 2012

Brian McNely, Paul Gestwicki, John Hill, Philip Parli-Horne, and Erika Johnson. Learning analytics for collaborative writing: A prototype and case study. Educause Learning Initiative Spring Focus Session on Learning Analytics, April 2012

Paul Gestwicki and Ronald Morris. Morgan’s raid. TechPoint Tech Thursday, Presentations by MIRA Award Finalists, Indianapolis, Indiana, April 2012

Paul Gestwicki. Games, fun, and learning. EMI Speaker Series, Emerging Media Initiative, Ball State University, Muncie, Indiana, April 2012

Paul Gestwicki. Games, fun, and learning. Colloquium presentation, Department of Physics and Astronomy, Ball State University, Muncie, Indiana, February 2012

Paul Gestwicki. Fun, Learning, Games, and Responsible Design (In Under 20 Minutes). Presentation at the Indianapolis chapter of the International Game Developers Association 2011 Charity Toy Drive, December 2011

Paul Gestwicki. An introduction to agile software development using scrum. Presentation at the quarterly meeting of The Guilford Group, Fishers, Indiana, November 2011

Brian McNely and Paul Gestwicki. Interactive visualization of student collaboration with Uatu. Presentation at the Writing in Digital Environments research center, Michigan State University, Lansing, Michigan, May 2011

Paul Gestwicki. An introduction to games, fun, and learning. Conner Prairie Interactive History Park, Fishers, Indiana, January 2011

Paul Gestwicki. Agile Game Development with Scrum. Presentation for the Indianapolis Video Game Developers Association, December 2010

Paul Gestwicki. An introduction to the science of learning. Workshop for the Office of Student Affairs, Ball State University, Muncie, Indiana, November 2010

Paul Gestwicki. Smart Phone Application Development for Non-Computer Science Majors, October 2009. Invited presentation at Tech4U Showcase, Bracken Library, Ball State University, Muncie, Indiana

Paul Gestwicki. Interactive curriculum visualization. Ball State University Emerging Media Symposium, April 2009

Paul Gestwicki. Design Patterns + Computer Games. Lunch and Learn Presentation at Ontario Systems in Muncie, Indiana, April 2008

Paul Gestwicki. The importance of immersion in science and the arts. Keynote address at the SUNY Fredonia Research and Creativity Exposition, April 2007

Paul Gestwicki. Design patterns and computer games. SUNY Fredonia Math and Computer Science Speaker Series, April 2007

Paul Gestwicki and Bharat Jayaraman. JIVE: Java Interactive Visualization Environment. Rochester Institute of Technology Computer Science Department Colloquium, January 2005

CONFERENCE
PRESENTATIONS

Journal and proceedings articles with corresponding conference presentations are listed in their respective sections.

Paul Gestwicki. (Almost) A Year of Fam Jams, 2020. Presentation at GodotCon 2020

Paul Gestwicki. Game-based training for software engineering teamwork. Presentation at the Security and Software Engineering Center Showcase, 2018

Paul Gestwicki and Kaleb Stumbaugh. Design and evaluation of a cybersecurity education game. In *Proceedings of the 2016 International Conference on Meaningful Play*, 2016

Paul Gestwicki. A cybersecurity education game: Final report. Presentation at the Security and Software Engineering Center Showcase, 2016

Paul Gestwicki. Welcome address. Symposium on Games in Academia, sponsored by the Serious Games Knowledge Group at Ball State University, October 2015

Paul Gestwicki. A cybersecurity education game: Status report 2. Presentation at the Security and Software Engineering Center Showcase, 2015

Paul Gestwicki. From stories to games to stories (or not). Presentation at THATCamp Indiana, July 2015

Paul Gestwicki. A cybersecurity education game: Status report 1. Presentation at the Security and Software Engineering Center Showcase, 2015

Paul Gestwicki. A cybersecurity education game. Presentation at the Security and Software Engineering Center Showcase, 2014

Paul Gestwicki. Musings on the relationship between game design and software development. Work-in-progress presentation at the 2013 Midwest Consortium for Computing Sciences in Colleges conference, September 2013

Ronald Morris and Paul Gestwicki. Indiana Civil War Sesquicentennial, John Hunt Morgan and Videogames. Presented at the annual meeting of the Association of Indiana Museums, September 2011

Paul Gestwicki and Brian McNely. Exploring the knowledge work and communication patterns of software engineers. Third Software and Security Engineering Research Center Showcase (50th SERC), May 2011

Paul Gestwicki. Domain-Specific Languages and Language-Oriented Programming, May 2009. Software Engineering Research Center Showcase

Paul Gestwicki. Information visualization for software engineering research. Software Engineering Research Center Fall Showcase, November 2008

Paul Gestwicki. Investigating dynamic aggregation for information visualization. Software Engineering Research Center Spring Showcase, June 2008

Paul Gestwicki. Software Visualization with RAVE. Software Engineering Research Center Spring Showcase, June 2008. Part of the SMART Team Status Report

Paul Gestwicki and Fu-Shing Sun. Design pattern automation for re-engineering. Software Engineering Research Center Fall Showcase, December 2008

Ugo Buy and Paul Gestwicki. Visualization Support for SMART. Software Engineering Research Center Spring Showcase, June 2007

Paul Gestwicki. Robo battle pigs: AI challenge. Consortium of Computing Sciences in Colleges Midwest Conference, Nifty Tools and Assignments Panel, September 2006

Tom Abels, Dave Dorenbos, Paul Gestwicki, Robert Reinke, and Ita Richardson. Computer Science and Software Engineering Education Redesigned (Panel). Software Engineering Research Center Fall Showcase, November 2006. Panel moderator

Paul Gestwicki. Zoomable User Interfaces. Software Engineering Research Center Fall Showcase, November 2006

Paul Gestwicki. Visualization Support for SMART. Software Engineering Research Center Fall Showcase, November 2006. Part of the SMART Team Status Report

Paul Gestwicki. JIVE demo. Software Engineering Research Center Spring Showcase, June 2006

Paul Gestwicki. Visual debugging with JIVE. Software Engineering Research Center Mini-showcase at Ontario Systems, February 2006

Paul Gestwicki. Visualizing Java execution. Software Engineering Research Center Fall Showcase, November 2005

BOOK CHAPTERS

Paul Gestwicki. Learning the agile way with iterative and incremental projects. In Hal Blythe, Charlie Sweet, and Russell Carpenter, editors, *It Works for Me with High Impact Practices: A Step-By-Step Guide*, pages 39–41. New Forums Press, 2018

Paul Gestwicki and David Largent. Improving course plans via standardized committee review. In Hal Blythe, Charlie Sweet, and Russell Carpenter, editors, *It Works for Me with High Impact Practices: A Step-By-Step Guide*, pages 39–41. New Forums Press, 2018

Paul Gestwicki. Provocation: Teaching networked humanities through interdisciplinary projects. In Brian McNely and Jeff Rice, editors, *Networked Humanities*, pages 103–105. Parlor Press, 2018

Paul Gestwicki. Using periodic retrospective assessment in multidisciplinary project teams. In Hal Blythe, Charlie Sweet, and Russell Carpenter, editors, *It Works for Me, Metacognitively*, pages 160–162. New Forums Press, 2016

Brian J. McNely and Paul Gestwicki. Visualizing knowledge work with Google Wave. In George Pullman and Baotong Gu, editors, *Designing Web-Based Applications for 21st Century Writing Classrooms*. Baywood Press, Amityville, NY, 2012

Paul Gestwicki and Ronald Morris. Social studies education game development as an undergraduate immersive learning experience. In Maria Manuela Cruz-Cunha, editor, *Serious Games as Educational, Business, and Research Tools: Development and Design*, pages 838–858. IGI Global, 2012

PUBLISHED
ABSTRACTS

Dan Garcia, Jim Huggins, Christine Alvarado, Paul Gestwicki, Andy Gunawardena, Victoria Hong, and Ellen Spertus. It seemed like a good idea at the time (covid-19 edition). In *Proceedings of the 53rd ACM Technical Symposium on Computer Science Education V. 2*, SIGCSE 2022, pages 1021–1022, New York, NY, USA, 2022. Association for Computing Machinery

Paul Gestwicki and David L. Largent. Building community and validating co-curricular achievement. In *Proceedings of the 53rd ACM Technical Symposium on Computer Science Education V. 2*, SIGCSE 2022, page 1095, New York, NY, USA, 2022. Association for Computing Machinery

Paul Gestwicki. Mapping between the computer science body of knowledge and fundamentals of game design. *Journal of Computing Sciences in Colleges*, 35(5):119–120, October 2019

Paul Gestwicki. Independent game development in the midwest: A panel discussion. *Journal of Computing Sciences in Colleges*, 33(1):41, October 2017

Edith Aurora Graf, Paul Gestwicki, and Meirav Arieli-Attali. Designing a cryptography game to assess student understanding with respect to a learning progression for mathematical functions. AERA Online Paper Repository, 2014. Presented at the 2014

American Educational Research Association Meeting

R. Scott Anderson and Paul Gestwicki. Hello, worlds: an introduction to mobile application development for IOS and Android. *Journal of Computing Sciences in Colleges*, 27(1):32–33, October 2011. Tutorial presentation at the Consortium of Computing Sciences in Colleges 2011 Midwest Conference

Paul Gestwicki and Brian McNely. Effective teaching practices using free Google services: conference tutorial. *Journal of Computing Sciences in Colleges*, 26(1):30–31, 2010

Paul Gestwicki and Khuloud Ahmad. The Impact of Creative Achievement on Academic Achievement in Media-Oriented CS1. In *SIGCSE '10: Proceedings of the 41st SIGCSE technical symposium on Computer science education*, 2010. Poster session abstract

Paul Gestwicki. A case study approach for teaching design patterns through computer game programming: tutorial presentation. *Journal of Computing Sciences in Colleges*, 24(1):36–37, 2008

Hani Girgis, Bharat Jayaraman, and Paul Gestwicki. Visualizing errors in object-oriented programs. In *Companion to the 20th annual ACM SIGPLAN conference on Object-oriented programming, systems, languages, and applications*, pages 156–157. ACM Press, October 2005

NON-REFEREED
PUBLICATIONS

Paul Gestwicki and Kaleb Stumbaugh. Design and evaluation of a cybersecurity education game. Technical Report 318, Security and Software Engineering Research Center, 2016

Paul Gestwicki and Kaleb Stumbaugh. Observations and opportunities in cybersecurity education game design. Technical Report 314, Security and Software Engineering Research Center, 2015

Paul Gestwicki. Measurement in computer science. In Rebecca L. Jackson, editor, *This Is Not a Pipe: Essays on Man as the Measurer of All Things*, pages 30–31. Self-published, <http://issuu.com/becca.jackson/docs/wholemeasurementbooklet>, 2015

J. Holden Hill, Phillip Parli-Horne, Paul Gestwicki, and Brian McNely. The Uatu system for visualizing networked writing activity. Technical Report 2011–01, Ball State University Computer Science Department, 2011

Paul Gestwicki, Michael Goldsby, Jonathan Huer, Martha Hunt, Brian Main, Michael O’Hara, Jennifer Palilonis, David Pearson, Lauren Petersen, Philip Repp, Susan Tancock, and Matthew Wilson. Ball State: Education of the Future. Report of the Future of Education Task Force at Ball State University, 2011

Paul Gestwicki and Khuloud Ahmad. A pilot study on the impact of creative achievement on academic achievement in media-oriented CS1. Technical Report 2010–01, Ball State University Computer Science Department, 2010

Paul Gestwicki and Joseph Morris. RAVE Architecture: The Design of a System for Metrics-Based Security and Reliability Visualization. Technical Report TR293, Software Engineering Research Center, 2008

Zachary Shutters and Paul Gestwicki. Survey of game editors. Technical Report 2007–01, Ball State University Computer Science Department, December 2007

Zachary Shutters, Jonathan Wagner, and Paul Gestwicki. System design for a shared virtual environment supporting user-generated content and time navigation. Technical Report 2007-02, Ball State University Computer Science Department, December 2007

Hani Girgis, Bharat Jayaraman, and Paul Gestwicki. Visualizing errors in object-oriented programs. In *Companion to the 20th annual ACM SIGPLAN conference on Object-oriented programming, systems, languages, and applications*, pages 156-157. ACM Press, October 2005

Paul V. Gestwicki. *Interactive Visualization of Object-Oriented Programs*. PhD thesis, University at Buffalo, 2005

Paul V. Gestwicki and Bharat Jayaraman. Methodology and architecture of JIVE. Technical Report 2004-20, University at Buffalo Department of Computer Science and Engineering, December 2004

Hani Z. Girgis, Akshay V. Hegde, Manu Pushpendran, Paul V. Gestwicki, and Bharat Jayaraman. Visual queries for interactive execution of Java programs. Technical Report 2004-19, University at Buffalo Department of Computer Science and Engineering, December 2004

COURSES
DESIGNED

At Ball State University

Game Development Studio (CS490), a format through which multidisciplinary teams of students work together with a community partner, following best practices of agile software development, to create an original software product. This design is documented in my 2016 TOCE article.

Human-Computer Interaction (CS345/445/545), a course that applies a project-oriented approach to study design, evaluation, and software architectural issues in interactive systems.

Game Programming (CS315), an upper-level elective course for Computer Science majors and minors that introduces common concepts, tools, and techniques of video game development.

Advanced Programming (CS222), in which students study object-oriented design, design patterns, unit testing, and code quality by working in small teams, following an incremental and iterative approach.

Game Design (CS215, Honrs490), an elective course in which students from any major create original game prototypes in order to understand fundamental issues of game design with an emphasis on serious games (e.g. educational games).

Visual Programming (CS116), a terminal non-majors programming course which I revised into a studio-based course using the private beta of App Inventor for Android.

COURSES
TAUGHT

At Ball State University

Undergraduate:

Visual Programming (Non-Majors)

Computer Science 1

Advanced Programming

Serious Game Design

Mixed graduate/undergraduate:

Game Programming

Human-Computer Interaction
Game Development Studio

Graduate only:
Software Requirements and Design
Seminar on Pattern-Oriented Game Software Design Analysis
Seminar on Game Engine Development

At University at Buffalo

Undergraduate:
Computer Science 1 for Non-CS Majors
Programming Languages

Graduate
Computer Science 2 for Non-CS Graduate Students

At Erie Community College

Introduction to Computers

- DISSERTATIONS SUPERVISED Khuloud Ahmad. Measuring the Impact of App Inventor for Android and Studio-Based Learning in an Introductory Computer Science Course for Non-Majors. Computer Science, Ball State University, 2012
- MASTERS THESES SUPERVISED Dannie M. Stanley. Context-Sensitive, Adaptable, Assistive Services and Technology. Master's thesis, Ball State University, July 2008
- Seth Lemons. Potential problem areas of design metrics for object oriented systems. Master's thesis, Ball State University, July 2007
- UNDERGRADUATE THESES SUPERVISED Sara Bailey. A portrait of the artist's summer. Honors College, Ball State University, 2021
- Nicholas Burrell. A preliminary qualitative study of problem-solving skills developed through playing tabletop role playing games in young adults. Honors College, Ball State University, 2021
- Garrett Evers. A reflection on *Project: Harmony*. Honors College, Ball State University, 2018
- La'Vonte Pugh. On the process and ideation of *Project: Harmony*. Honors College, Ball State University, 2018
- Joshua Schoen. Landscaping VR. Honors College, Ball State University, 2018
- Carisa Lovell. *Collaboration Station: A memoir: An honors thesis*. Honors College, Ball State University, 2016
- Kaleb Stumbaugh. *The Social Startup Game: Creating an educational cybersecurity game and collecting empirical data*. Honors College, Ball State University, 2016
- Steffan Byrne. Detailing real play experience with *children of the sun*: an honors thesis. Honors College, Ball State University, 2013

Christopher Dibble. Refactoring code to increase readability and maintainability : an honors thesis. Honors College, Ball State University, 2013

Lyle Franklin. Empirical research on the impact of *morgan's raid*. Honors College, Ball State University, 2012

Caitlyn R. Rickey. Exploration of board game design and development : an honors thesis. Honors College, Ball State University, 2012

John H. Hill. Visualizing networked writing activity: An honors thesis. Honors College, Ball State University, 2011

Austin Toombs. The impact of curriculum visualization on decision making among students : an honors thesis. Honors College, Ball State University, 2010

Daniel Lakes. An analysis of communication within immersive learning courses involving software development at ball state university : an honors thesis. Honors College, Ball State University, 2009

Lee Dobryden. Wireless social networking : an honors thesis. Honors College, Ball State University, 2008

Alex Dexter. Zombie survival. Honors College, Ball State University, 2007

EXTERNAL
GRANTS

Paul Gestwicki. The Space Race Game: An Educational Game Inspired by the Apollo Program. Indiana Space Grant Consortium. Funded Spring 2019. \$10,000.

Paul Gestwicki. *Collaboration Station*: An Educational Video Game about Science and Engineering aboard the International Space Station. Indiana Space Grant Consortium. Funded Summer 2017–Spring 2018. \$15,000.

Paul Gestwicki. A cybersecurity education game, 2015. Security and Software Engineering Research Center. \$25,453

Paul Gestwicki. App Inventor for Android Curriculum Development. Google, Inc., 2010. \$16,089.

Paul Gestwicki and Brian McNely. Interactive Visualization of Collaborative STEM Knowledge Work. Indiana Space Grant Consortium, 2010. \$15,000.

Paul Gestwicki. App Inventor for Android. Grant from Google, Inc., in the form of 20 G1 Developer Phones, access to experimental App Inventor for Android software, supplies funding, and attendance at a three-day workshop at the Googleplex in Mountain View, CA (June 8–10), 2009. \$8,272.

Paul Gestwicki and Fu-Shing Sun. Sunspots for interdisciplinary game development. Grant from Sun Microsystems in the form of seven SunSPOT development kits, 2007. \$5,250.

INTERNAL
GRANTS

Paul Gestwicki. Making Community-Engaged Games. Provost Immersive Learning Grant, funded Fall 2021–Spring 2022. \$2359.

Paul Gestwicki. Educational Experiences in Augmented Reality. Provost Immersive

Learning Grant, funded Fall 2018–Spring 2019. \$13,500.

Paul Gestwicki. Telling Muncie’s Stories with Geolocate Interactive Games. Provost Immersive Learning Grant, funded Fall 2017–Spring 2018. \$15,500.

Paul Gestwicki. Educational Games with Muncie Sanitary District. Provost Immersive Learning Grant, funded Fall 2016–Spring 2017. \$15,800.

Paul Gestwicki. The Intersecting Contexts of Narrative-Rich Games: A CSH Immersive Micro-Grant. Funded Spring 2016. \$1300.

Paul Gestwicki. Educational game development with The Children’s Museum. Provost’s Initiative for Immersive Learning, 2014. \$17,500

Paul Gestwicki. Games and learning with The Children’s Museum of Indianapolis. Provost’s Initiative for Immersive Learning, 2013. \$13,500

Paul Gestwicki and Ronald Morris. Educational games inspired by museums. Provost Initiative for Immersive Learning. \$16,500.

Ronald Morris, Paul Gestwicki, and Mark Groover. Digital archaeology simulation. Provost Initiative for Immersive Learning. \$15,000.

Paul Gestwicki and Brian McNely. Writing the wave. Emerging Media Innovation Grant, 2010. \$10,000.

Paul Gestwicki. Interactive Curriculum Visualization. ASPiRE Grant, 2009. \$8,200.

Paul Gestwicki and Ronald Morris. Morgan’s Raid: An Interdisciplinary Game Design Project to Support Teaching Indiana’s Civil War History. Enhanced Provost Initiative—Immersion, 2009. \$6,900.

Paul Gestwicki and Fu-Shing Sun. Computer Game Design and Development. Enhanced Provost Initiative – Immersion, 2008. \$5,000.

Paul Gestwicki. Enhancing computer science education with games. New Faculty Research Grant. \$2,450.

Paul Gestwicki. Interactive visual debugging of Java. Lilly V Grant, Ball State University. Award supported the continued development of the JIVE program visualization tool in AY2006–2007. \$5,000.

Paul Gestwicki. Interactive Program Visualization in Introductory Computer Science. Creative Teaching Grant, Ball State University. \$5,000.

FELLOWSHIPS

Shafer Fellow, Spring 2019
Ball State University, Muncie, Indiana

The Shafer Fellowship is awarded for mentoring students in community-engaged scholarship. In Spring 2019, I will be leading a multidisciplinary undergraduate team in the development of an original game based on themes of Minnetrista, a museum and cultural center in Muncie, Indiana.

Virginia B. Ball Center for Creative Inquiry, Spring 2012

Ball State University, Muncie, Indiana

Virginia Ball Center (VBC) fellows are given a full semester's load to mentor an interdisciplinary team of students in a project-oriented seminar; the students likewise earn a full semester's credit for their participation. My seminar was entitled "Games, Fun, and Learning," and our community partner was The Children's Museum of Indianapolis—the largest children's museum in the world. I recruited a team of thirteen students from Computer Science, Economics, Psychology, Electronic Art and Animation, History, Visual Communications, and Music Technology for the project. Coordinating students' credit required careful planning and communication with all the aforementioned departments; the students ended up earning credit in 24 different courses for their participation in the seminar.

The team worked full-time during the Spring semester to produce *Museum Assistant: Design an Exhibit* (see Notable Projects below for more information). Secondary products included posters for local research conferences, a blog, a Web site, and a public showcase, in addition to dozens of prototypes. My colleague, Brian McNely, led an ethnographic study of immersive learning during my seminar, which has already led to several scholarly publications.

Institute for Digital Intermedia Arts, Spring and Fall 2009

Ball State University, Muncie, Indiana

As a fellow with the IDIA, I worked closely with local media art faculty and staff to find intersections between their work and my interests. In Fall 2009, I team-taught a seminar on intermedia art, through which an interdisciplinary team of students worked on an innovative interactive installation for the Ball State University Museum of Art: a Microsoft Surface application to allow visitors to explore the museum's collections. This system was completed and installed in Fall 2010.

During this fellowship, I also worked with a team to develop *Confluence*, a proactive hybrid multitouch application to foster cross-disciplinary communication at professional conferences; see Notable Projects below for more information.

NOTABLE PROJECTS

Race to the Moon, Spring 2019

Race to the Moon is an educational two-player card game designed to teach about the historic space race. The players take on the role of the USA and the USSR. The game was created with support from the Indiana Space Grant Consortium and won a Gold Medal Award at the 2020 Serious Play Conference.

Canning Heroes, Spring 2019, Spring 2020

Canning Heroes is an educational game about historical food preservation. The original release was created by an immersive learning team, working in collaboration with Minnetrista, in Spring 2019. It was developed specifically for a museum installation on a multitouch tabletop display. This version of the game was showcased by three students and me at the Indiana State Museum's "Game On!" event in November 2019, and the game won a Silver Medal Award as a student game at the 2019 Serious Play Conference. In Spring 2020, I used the original design and assets to make a home-playable version of the game that is freely available online and linked from Minnetrista's site.

Fairy Trails, Spring 2018

Fairy Trails is an interactive geolocate game designed for groups visiting Minnetrista. One player downloads the free app from the Apple App Store or Google Play Store and then leads the rest of the group in a fairy-finding adventure. This project was created in collaboration with Minnetrista as part of an immersive learning project.

Spirits at Prairie Creek Park, Spring 2017
<http://spiritsatprairiecreek.com>

This is a geolocate game for families and small groups in which players explore Prairie Creek Park using sight, sound, touch, and smell. Players discover different spirits depending on whether they discover natural or man-made elements, which helps the game reinforce the environmental educational goals of our community partner, Camp Prairie Creek. This was created by a multidisciplinary undergraduate studio team.

Traveler's Notebook: Monster Tales, Spring 2016
<http://travelersnotebookgame.com>

This two-player game is designed to teach cultural empathy through the lens of monsters from world cultures. The game was developed by a multidisciplinary team of undergraduates in an immersive learning class in collaboration with Muncie Public Library.

Social Startup Game (Spring 2016)
<http://socialstartupgame.info>

This single-player game is designed to teach concepts of cybersecurity to upper middle school and early high school students. The player is cast as the new chief security officer for an up-and-coming social media company, and they have to balance demands for new features against potential security problems. Narrative events introduce major themes in cybersecurity. This project was created with undergraduate research assistant Kaleb Stumbaugh and undergraduate artist Coy Yuan, and it was funded by a grant from the Security and Software Engineering Research Center.

Collaboration Station, Spring 2015
<http://about.collaborationstationgame.info>

This is a cooperative puzzle game for two to four players who take on the roles of astronauts aboard the International Space Station. The commander assigns tasks to each player, ensuring that the team produces enough science points and maintenance points to have a successful mission. This game features local network multiplayer to encourage players to talk to each other while playing the game. The game was developed by a multidisciplinary team of undergraduates in an immersive learning class.

Bone Wars, Spring 2014
<http://www.cs.bsu.edu/homepages/pvg/games/2014/bonewars>

This is a two-player strategy game inspired by the historic 19th-century feud between rival paleontologists O. C. Marsh and E. D. Cope. The players compete to acquire sites, excavate fossils, identify species, and publish their results: the player with the most fame at the end of eight rounds wins. The game was developed by a multidisciplinary team of undergraduates in an immersive learning class.

Children of the Sun, Spring 2013

This multiplayer iPad game for upper-elementary students that places the player in the role of a Middle Mississippian chieftain. The design features collocated competitive play: all the players have their own devices and are in the same physical space. The game was designed exclusively for the educational outreach programs at the Indiana State Museum. The game was developed by a multidisciplinary team of undergraduates in an immersive learning class.

The Underground Railroad in the Ohio River Valley, Fall 2012
<https://sites.google.com/site/undergroundrailroadgame>

The player takes the role of a fugitive slave in the 19th century in this game for upper-elementary students. This project was directed by my colleague, Ronald Morris, and was funded by the Entertainment Software Association Foundation. I served as the technical director, converting the paper prototype into technical specifications in Summer 2012 and mentoring a multidisciplinary team in the digital production. This game uses the Unity3d Web Plugin and so will not work on some modern browsers.

Equations Squared, Summer 2012
<http://www.cs.bsu.edu/homepages/pvg/games/equations-squared>

This game for grades 5–9 won the grand prize of the ETS Math Assessment Game Challenge. I designed it around the “Equality and Variable: Equations and Expressions Model” learning progression, provided by ETS and based on the scholarship of Arieli-Attali, Wylie, and Bauer. A player’s level in the learning progression is surfaced through a system of badges and demerits incorporated into gameplay, while the scoring system serves as motivation for replay.

Museum Assistant: Design a Collection, Spring 2012
<https://sites.google.com/site/designanexhibit>

This game was created by my team of thirteen students at the Virginia B. Ball Center for Creative Inquiry. The game introduces players to the behind-the-scenes workings of the Children’s Museum of Indianapolis. The player is a volunteer who is asked to create four different digital exhibits. The player explores the various storerooms and photographs the artifacts in the American Collection and the World Culture Collections. The pictures of the artifacts have additional information about them, such as where they are from, where they were created, and what type of object the artifact is. By matching and comparing this information, the player must successfully create exhibits that meet the curators’ specifications. The game was featured at the 2012 Indiana State Fair. This game uses the Unity3d Web Plugin and so will not work on some modern browsers.

Morgan’s Raid, Spring 2010–Summer 2011
<https://sites.google.com/site/morgansraidgame>

Morgan’s Raid was created by 25 students over three semesters. The game puts the player into the role of Confederate Brigadier General John Hunt Morgan during his historic 1863 raid of Indiana. The player must strategically allocate orders in order to reach the Ohio border while increasing his reputation. It received the 2011 Outstanding Project of the Year Award from the Indiana Historical Society and was featured at the 2011 Indiana State Fair. The project was co-mentored with Ronald Morris, Ball State University Professor of History, and it enjoyed the collaborative support of Conner Prairie Interactive History Park, Basilisk Games, and Richard Skidmore. Note that this project will not work on modern browsers due to changes in Java plug-in security

policies.

Confluence, Summer–Fall 2009

<https://sites.google.com/site/confluencevisualizationssystem>

Confluence is a hybrid proactive system to encourage communication at interdisciplinary conferences. Each conference attendee has an RFID tag embedded into his or her name badge. As the attendee approaches the Microsoft Surface that runs the Confluence client, a “card” appears on the screen that displays his or her bio and interests. Animated connections are drawn to nearby attendees who share interests. Confluence was deployed at the International Digital Media & Arts Association 2009 Conference at Ball State University. Our paper in the *Journal of the International Digital Media & Arts Association* provides more details about the design and implementation of the system.

DEPARTMENTAL
SERVICE

Foundations Curriculum Committee Chair, Fall 2012–Present

Search Committee, 2011–12, 2014–15 (chair), 2015–16 (chair in Spring), 2016–17, 2020–2021

Promotion and Tenure Committee, 2007–08 (chair), 2012–13 (chair), 2014–15 (chair), 2018–19, 2019–20, 2020–21, 2021–22 (chair)

Director of Undergraduate Programs, Fall 2006–Fall 2011

Member of the service, foundations, and advanced curriculum committees

Oversaw curriculum revision to match CS2008 and ABET recommendations

Served as primary departmental advisor

Met with prospective students

Represented the department at preview days for prospective students

Evaluated transfer credits

Assessed extraordinary student circumstances and authorize exceptions to regular policies such as prerequisites and graduation requirements

Coordinated the department’s participation in the 1+2+1 Sino-American study program, Fall 2006–Spring 2010

Other notable departmental contributions

Led efforts to articulate and clarify learning objectives, both for the department’s degree programs as well as for individual courses

Oversaw and reported on experimental offerings of the Media Computing approach to CS1, which was later adopted as the introductory course pedagogy

Coached several programming competition teams for the Consortium of Computing Sciences in Colleges Midwest competitions and regional ACM ICPC competitions

Department assessment liaison, Fall 2010–Fall 2011

Self-study committee member, 2008–2009

Initiator and coordinator of the department’s Spring Banquet, 2010–present

Barry M. Goldwater Scholarship Evaluation Committee, 2016–present

Ball State University Game Design & Development Discord Server, Administrator, Moderator, and Community Manager, 2021–present. I also managed this community’s first game jam, Beaker Jam, in late 2021.

Immersive Learning Advisory Committee, Periodic membership since approximately 2017 (whenever one of my own proposals is not under consideration)

Promotion and Tenure Committee, College of Sciences and Humanities, 2007–2008, 2012–2013, 2014–2015, 2021–2022

Symposium on Games, Event chair, October 2015, 2017, 2019, 2021. This was the “Symposium on Games in Academia” until 2017 and was retitled in 2019.

Games Knowledge Group, Director, Fall 2013–present. This was the “Serious Games Knowledge Group” until approximately 2019, when we renamed ourselves to reflect a broader influence.

Global Game Jam, Site Coordinator, January 2017–2021; Consulting with new site coordinator, January 2022

Interactive Learning Space Initiative, Member of Cohort 4, Active 2015–2017

6th Congressional District Leadership Academy

- Cybersecurity session co-organizer, Spring 2016
- Implementation Committee and Game Development session co-organizer, Fall 2013–Spring 2014

Honors College Colloquium Curriculum Committee, Fall 2013–Fall 2016

Honors College Dean’s Advisory Council, Fall 2016–2018

Honors College Search Committee for Voran Distinguished Professor, Summer 2017

Strategic Planning Committee, Summer 2011–Spring 2012

Future of Education Task Force, Fall 2010–Spring 2011

Worked with a multidisciplinary team to make recommendations on how to advance effective and modern learning at the university. This culminated in the 2011 internal report, *Ball State: Education of the Future*.

College Curriculum Committee, College of Sciences and Humanities, 2009–2011

Reviewed curricular additions and modifications from across the twenty departments of the college. Serves as committee chair during the 2010–2011 academic year.

Innovative Teaching Committee, 2009–2010

Served with three colleagues from different departments on campus to give a presentation on innovative teaching methods at the Spring 2010 university administrative retreat.

Society for Game Design and Development (previously the BSU Game Developers Club), advisor, 2006–2013

Ph.D. Committee member:

Margo Brines, English
Elizabeth Buck, English, 2016
Elmar Hashimov, English, 2015
Stephanie Hedge, English, 2013
Jennifer Stewart, English, 2013
Amy Byerly, Educational Psychology, 2010

PROFESSIONAL
SERVICE

Joint Task Force on Computing Curricula, ACM/IEEE/AAAI
Human-Computer Interaction (HCI) Subcommittee, 2021–present

Consortium of Computing Sciences in Colleges Midwest Chapter Conference Committee

Student Showcase Chair, Fall 2010–Present
Publicity Chair, Fall 2009–Fall 2011

Consortium of Computing Sciences in Colleges Midwest Chapter Steering Committee

Member At-Large, Fall 2010–Fall 2013

Journal Review

IEEE Transactions on Education
ACM Transactions on Computing Education
ASEE Advanced in Engineering Education
ACM Journal on Educational Resources in Computing
International Journal of Engineering Education, Special Issue on Software Engineering Education
Journal of Computing Sciences in Colleges

Conference Review

ACM Conference on Innovation in Technology in Computer Science Education (ITiCSE)
IEEE/ASEE Frontiers in Education (FIE)
Consortium of Computing Sciences in Colleges (CCSC) Midwest Conference
ACM Computer-Human Interaction (CHI)
ACM Technical Symposium on Computer Science Education (SIGCSE)
Games, Learning, and Society (GLS)

Grant Review

Vienna Science and Technology Fund, Information and Communication Technology
National Science Foundation International Research Fellowship Program, invited ad hoc review
Ball State University Faculty Internal Grant

Professional memberships

International Game Developers Association, Indianapolis Chapter (previously the Indianapolis Video Game Developers Association)

ACM, including Special Interest Group in Computer Science Education (SIGCSE)

Miscellaneous

Judge for the East Central Indiana Regional Science Fair, 2006, 2009–2011

Judge for the International Science and Engineering Fair, 2006

OTHER
TEACHING
EXPERIENCE

Indiana Academy for Science, Mathematics, and Humanities, Muncie, Indiana

Instructor Summer 2008

Taught *Game On!* Summer enrichment courses on game design and development for grades 3–5 and 6–9.

CONSULTING

Educational Testing Services, Princeton, NJ

Educational game design consultant Summer 2013–Spring 2014

Consulted with ETS on the design of mathematics educational games.

AWARDS

Best Non-Digital Game for *Race to the Moon*, International Conference on Meaningful Play, 2022.

Gold Medal Award for *Race to the Moon*, K–12 Education Sector. Serious Play Conference, 2020.

ACM Senior Member, September 2016.

WLBC Difference Maker of the Month, May 2015, for my work with undergraduates to design and develop *Collaboration Station*.

ETS Math Assessment Game Challenge, Grand prize winner, October 2012

Awarded for my entry, *Equations Squared*, a game designed around the equations and variables learning progression for 5th to 9th grades.

Outstanding Project Award, Indiana Historical Society, Fall 2011

Awarded to the Ball State University College of Sciences and Humanities for my work with Ronald Morris on *Morgan's Raid*, an educational game about Indiana's Civil War history.