

Games For Learning Institute



Ken Perlin, New York University
Jan L. Plass, New York University
Catherine Milne, New York University



Katherine Isbister, NYU Polytechnic Institute
Carl Skelton, NYU Polytechnic Institute
Joel Wein, NYU Polytechnic Institute



Steve Feiner, Columbia University



Bruce Homer, Graduate Center, CUNY



Mary Flanagan, Dartmouth College



Colleen Macklin, Parsons New School of Design



Andrew Phelps, Rochester Institute of Technology



Chuck Kinzer, Teachers College, Columbia University



Miguel Nussbaum, Pontificia Universidad Católica

Games for Learning Institute (G4LI)

Ken Perlin (New York University), Director

Ken Perlin is a professor in the Department of Computer Science at New York University's Courant Institute of Mathematical Sciences. In addition to being the director of the Games for Learning Institute, he was also founding director of the Media Research Laboratory and director of the NYU Center for Advanced Technology. His research interests include graphics, animation, user interfaces, science education, and multimedia.

He received an Academy Award for Technical Achievement from the Academy of Motion Picture Arts and Sciences for his noise and turbulence procedural texturing techniques, which are widely used in feature films and television. Perlin also received the 2008 ACM/SIGGRAPH Computer Graphics Achievement Award, the TrapCode award for achievement in computer graphics research, the NYC Mayor's award for excellence in Science and Technology, the Sokol award for outstanding Science faculty at NYU and a Presidential Young Investigator Award from the National Science Foundation. He has also been a featured artist at the Whitney Museum of American Art.

Perlin received his a Ph.D. in Computer Science from New York University, and a B.A. in Theoretical Mathematics from Harvard University. Before working at NYU, he was Head of Software Development at R/GREENBERG Associates in New York, NY. Prior to that, he was the System Architect for computer-generated animation at Mathematical Applications Group, Inc. Perlin has served on the Board of Directors of the New York chapter of ACM/SIGGRAPH, and is currently on the Board of Directors of the New York Software Industry Association. Ken has also been a reviewer for ACM ACM/SIGGRAPH every year since 1985. In addition, he has reviewed IEEE Computer Graphics and Applications and The Visual Computer, and has been a member of numerous National Science Foundation grant proposal review panels. Perlin has also been invited to present papers at Berkeley, Columbia, MIT, Princeton, Stanford, and Yale, and at corporate research centers including Apple Computer, BellCore, Bell Laboratories, IBM, Interval Research, MERL, Microsoft, NYNEX, and Xerox PARC. He is also a frequent international guest speaker. Ken Perlin retains several patents, including one for a pressure sensitive touch pad to replace a computer mouse.

Jan L. Plass (New York University), Co-Director

Jan L. Plass is Professor of Educational Communication and Technology in the Steinhardt School of Culture, Education, and Human Development at New York University, where he co-directs the *Games for Learning Institute*. He is the founding director of the CREATE Consortium for Research and Evaluation of Advanced Technology in

Education. His research is at the intersection of cognitive science, learning sciences, and design, and seeks to enhance the design of visual environments. His current focus is on cognitive and emotional aspects of information design and interaction design of simulations and educational games for science education and second language acquisition. He has received funding for his research from the U.S. Department of Education's Institute of Education Sciences, the National Science Foundation, the National Institutes of Health, and, most recently, from Microsoft Research, the Motorola Foundation, and the Bill and Melinda Gates Foundation. Dr. Plass serves on the editorial review boards of some of the most highly ranked journals in his field, including the *Journal of Educational Psychology*, *Educational Technology Research and Development*, *Computers in Human Behavior*, *Journal of Computing in Higher Education*, and the *Journal of Research on Technology in Education*.

Bruce Homer (CUNY), G4LI Co-PI

Bruce is an Associate Professor of Educational Psychology (Learning, Development & Instruction Sub-Program) and Training Director for the Interdisciplinary Postdoctoral Research Training (IPoRT) program at the Graduate Center of the City University of New York (CUNY). He is a Primary Investigator at the Games for Learning Institute and Director for Research at the Consortium for Research and Evaluation of Advanced Technologies in Education (CREATE). Bruce's research examines how children acquire the cultural tools that are used to communicate and transmit knowledge, such as language, literacy, and information technologies, and how the acquisition of these tools transforms cognitive and developmental processes. His research has been supported by the National Science Foundation, the National Institutes of Health, and the Institute for Educational Sciences. Bruce has served as an educational consultant for private industry as well as public television. He received a B.Sc. in Psychology from Dalhousie University and a M.A. and Ph.D. in Human Development and Applied Psychology from the University of Toronto.

Katherine Isbister (New York University - Polytechnic Institute) G4LI Co-PI

Katherine is an Associate Professor of both Computer Science Engineering and Digital Media at NYU's Polytechnic Institute. She also maintains an affiliation with IT University in Copenhagen's Center for Computer Games Research. Katherine directs the Social Game Lab at Polytechnic-NYU, and serves on the Advisory Committee of the NYU Game Center. She has authored two books - *Better Game Characters by Design* and *Game Usability*. *Better Game Characters* was nominated for a Game Developer Magazine Frontline Award. She was selected as one of = MIT Technology Review's Young Innovators most likely to shape the future of technology. She received both her Bachelor's degree from the University of Chicago as well as a Masters degree and Ph.D. from Stanford University.

Chuck Kinzer (Teachers College, Columbia University), G4LI Co-PI

Charles K. (Chuck) Kinzer is a Professor of Education and Technology, and director of the program in Communication, Computing and Technology of Education at Columbia University's Teachers College) and the Games Research Lab (informally known as EGGPLANT), also at Teachers College Columbia University. He is the principal investigator, at the Teachers College site, within the Games for Learning Institute, and teaches courses and works extensively with technology in areas from software development and simulations, to virtual environments and games, including motion games, to reconceptualize educational opportunities for teaching and learning. He has published widely and has received funding for his work from the US Department of Education, the National Science Foundation, the Office of Special Education Projects, Microsoft Research, IBM and others. He has presented his work at the Serious Games Summit, Games Learning and Society, Meaningful Play, Games for Change, the American Educational Research Association, GDC, and other national and international professional and corporate meetings. While he works across content areas, his primary focus is in the area of literacy, specifically vocabulary development, reading comprehension, and computer, multimedia, and "future literacies."

Susan Stratton, Strategic Initiatives and Partnerships

Susan is a high level consultant to executives, CEO's and boards for media multinationals, publishers, private companies, investment firms and non-profits with major media licenses in NYC, LA and London. Her responsibilities include corporate strategy and business development, content creation and the research, development and launch of TV and online networks and portals with special attention to learning initiatives,

Susan was trained at the BBC in London where she worked as a researcher, writer, producer and director for BBC Radio and Television and for the CBS News show 60 Minutes. Building on her award winning development and

production experience in commercials, feature films and radio and television around the world, Susan came to the corporate sector as Vice President of Lorimar Television. She continues to use the lessons of innovation she learned as Lorimar grew into the world's largest producer and syndicator of television product and expanded into Warner Brothers Television. She witnessed the morphing of Warner Brothers into the global behemoth Time Warner on its way to become AOL Time Warner. Concurrently, Susan served as an adjunct professor at NYU's School of Film and Television at the Tisch School of the Arts.

Steve Feiner (Columbia University) G4LI Co-PI

Steve Feiner is Professor of Computer Science at Columbia University, where he directs the Computer Graphics and User Interfaces Lab. His research interests include human-computer interaction, augmented reality and virtual environments, knowledge-based design of graphics and multimedia, mobile and wearable computing, computer games, and information visualization.

Prof. Feiner is coauthor of *Computer Graphics: Principles and Practice* and of *Introduction to Computer Graphics* (Addison-Wesley), received an ONR Young Investigator Award, and together with his students, has won the ACM UIST 2010 Lasting Impact Award and best paper awards at ACM UIST, ACM CHI, ACM VRST, and IEEE ISMAR. His lab created the first outdoor mobile augmented reality system using a see-through display in 1996, and pioneered experimental applications of augmented reality to fields such as tourism, journalism, maintenance, and construction. In recent years, Prof. Feiner has been general chair or co-chair for ACM VRST 2008 (15th Symposium on Virtual Reality Software and Technology), INTETAIN 2008 (Second International Conference on Intelligent Technologies for Interactive Entertainment), and ACM UIST 2004 (17th Symposium on User Interface Software and Technology); and doctoral symposium chair for ACM UIST 2009–2011.

Mary Flanagan (Dartmouth College), G4LI Co-PI

Mary Flanagan is an innovator focused on how people create and use technology. Her groundbreaking explorations across the arts, humanities, and sciences represent a novel use of methods and tools that bind research with introspective cultural production. As an artist, her work ranges from game-inspired systems to computer viruses, embodied interfaces to interactive texts; these works are exhibited internationally. As a scholar interested in how human values are in play across technologies and systems, Flanagan has written more than 20 critical essays and chapters on games, empathy, gender and digital representation, art and technology, and responsible design. Her three books in English include the recent *Critical Play* (2009) with MIT Press. Flanagan founded the Tiltfactor game research laboratory in 2003, where researchers study and make social games, urban games, and software in a rigorous theory/practice environment. She is the Sherman Fairchild Distinguished Professor in Digital Humanities at Dartmouth College.

Colleen Macklin (Parsons The New School for Design) G4LI Co-PI

Colleen Macklin is an associate professor in the Department of Communication Design and Technology at Parsons The New School for Design in New York City and Director of PETLab (Prototyping Evaluation, Teaching and Learning lab), a joint project of Games for Change and Parsons focused on developing new games, simulations, and play experiences which encourage experimental learning and investigation into social and global issues. PETLab projects are currently supported by MacArthur's Digital Media and Learning initiative, Microsoft, and MTV. She has led social media projects and programs with partners such as the United Nations and Open Society Institute (OSI), including a design fieldwork program connecting Parsons students with OSI's Public Health programs in Africa and the former Soviet Union. In 2006–2007, Colleen was a fellow at the India China Institute at the New School, investigating the use of mobile phones and location-based media in urban design with support from Nokia. Macklin has also designed websites and interactive applications for clients such as Citibank, France Telecom, and Moët, and DJed and VJed at site-specific venues and for cultural institutions such as SoundLab, The Whitney Museum for American Art, and Creative Time. Colleen has a BFA in media arts from Pratt Institute, and did graduate studies in computer science at CUNY and in international affairs at The New School.

Catherine Milne (New York University) G4LI Co-PI

Catherine Milne is Associate Professor in science education at New York University. Her research interests include urban science education, socio-cultural nature of learning science, the role of the history of science in learning science, the development and use of multimedia for teaching and learning science, and the nature and role of digital games in STEM learning. Currently, she is Principal Investigator of a major multidisciplinary research study

designing, developing, and evaluating scaffolds for multimedia simulations in chemistry education funded by the Institute of Education Sciences within the federal Department of Education. Her book, *The Invention of Science: Why History of Science Matters for the Classroom*, is in production. She is also co-Editor-in-Chief for the journal, *Cultural Studies of Science Education* and co-editor of two book series for Springer Publishers and Sense Publishers.

Miguel Nussbaum (Pontificia Universidad Catolica, Brazil) G4LI Co-PI

Miguel Nussbaum, Ph.D., is full professor for Computer Science at the School of Engineering of the Pontificia Universidad Catolica Chile. His research areas are Ubiquitous and Collaborative Learning with projects in Argentina, Brazil, Chile, Guatemala, United Kingdom and the United States. He has published 50 journal papers of the ISI catalogue and won the best conference paper award at CSCL 2009. Has been member of the board of the Chilean National Science Foundation and is member of the Interim Scientific Advisory Board of the FORUM of UNESCO.

Andrew Phelps (Rochester Institute of Technology) G4LI Co-PI

Andrew Phelps is the Director of Game Design & Development at the Rochester Institute of Technology in Rochester, New York. He is the founding faculty member (with a lot of help!) of the Masters of Science in Game Design & Development within the B. Thomas Golisano College of Computing and Information Sciences, as well as the Bachelors of the same name, and his work in games programming education has been featured in *The New York Times*, *CNN.com*, *USA Today*, *National Public Radio*, *IEEE Computer*, and several other articles and periodicals. He regularly publishes work exploring collaborative game engines and game engine technology. He maintains a website featuring his work as an educator, artist, programmer, and game addict, and currently teaches courses in multimedia programming, game engine development, 2D and 3D graphics, and game development theory. Primary research interests include online gaming, electronic entertainment, 3 dimensional graphics and real time rendering, virtual reality, interactive worlds.

Carl Skelton (New York University - Polytechnic Institute) G4LI Co-PI

Carl is an Assistant Professor of Digital Media Polytechnic – NYU and Director of the Brooklyn eXperimental Media Center (bXmc). Carl has also worked on a National Science Foundation granted project with Dr. Joel Wein titled *Virtualized Gaming as a Pathway to Enhanced Understanding of Complex Networked Systems*. This gaming project's focus was to build gaming infrastructure that teaches students about complex networked systems.



G4LI Advisory Board

James Paul Gee

James Gee is a researcher who has worked in psycholinguistics, discourse analysis, sociolinguistics, bilingual education, and literacy. Gee is currently the Mary Lou Fulton Presidential Professor of Literacy Studies, Division of Curriculum and Instruction, at the Mary Lou Fulton College of Education at Arizona State University. Gee is a faculty affiliate of the Games, Learning, and Society group at the University of Wisconsin-Madison, and is a member of the National Academy of Education.

Gee is a member of the National Academy of Education. His book *Sociolinguistics and Literacies* (1990, Third Edition 2007) was one of the founding documents in the formation of the “New Literacy Studies,” an interdisciplinary field devoted to studying language, learning, and literacy in an integrated way in the full range of their cognitive, social, and cultural contexts. His book *An Introduction to Discourse Analysis* (1999, Second Edition 2005) brings together his work on a methodology for studying communication in its cultural settings, an approach that has been widely influential over the last two decades.

Gee’s most recent books deal with video games, language, and learning. *What Video Games Have to Teach Us About Learning and Literacy* (2003, Second Edition 2007) argues that good video games are designed to enhance learning through effective learning principles supported by research in the Learning Sciences. *Situated Language and Learning* (2004) places video games within an overall theory of learning and literacy and shows how they can help us in thinking about the reform of schools. His most recent book is *Good Video Games and Good Learning: Collected Essays* (2007). Gee has published widely in journals in linguistics, psychology, the social sciences, and education. Gee’s current work in the field of new literacies has seen him shift in his research focus somewhat from studying language-in-use to examining the discourses of a range of new social practices—with a particular emphasis on video games and learning. Gee applies many key concepts from his previous research to studying video games.

Recently, Gee’s work has focused on the learning principles in video games and how these learning principles can be applied to the K-12 classroom. Video games, when they are successful, are very good at challenging players. They motivate players to persevere and simultaneously teach players how to play. Gee began his work in video games by identifying thirty-six learning principles that are in evidence in the design of good games. Gee argues for the application of these principles in the classroom.

Alan Kay

Dr. Alan Kay is best known for the idea of personal computing and the intimate laptop computer, and the invention of the now ubiquitous overlapping-window interface and modern object-oriented programming. These were catalyzed by his deep interest in education and children, which continues to be an inspiration to him. Kay, one of the founders of the Xerox Palo Alto Research Center known widely as XEROX PARC led one of several groups that together developed modern workstations and the forerunners of the Macintosh: including Smalltalk, the overlapping window interface, the Ethernet, Laser printing, and network “client-servers”. Kay has more than lived up to the phrase he coined: “The best way to predict the future is to invent it.”

Prior to his work at Xerox, Kay was a member of the University of Utah ARPA research team that developed 3D graphics. His PhD in 1969 (with distinction) was awarded for the development of the first graphical object-oriented personal computer. His undergraduate degrees were in Mathematics and Molecular Biology (from the University of Colorado in 1966). He also participated in the original design of the ARPANet (which became the Internet).

After Xerox he was Chief Scientist of Atari, and from 1984 has been a Fellow at Apple Computer and Disney Fellow and Vice President of Research and Development for The Walt Disney Company. He is a Fellow of the American Academy of Arts and Sciences, the National Academy of Engineering, the Royal Society of Arts, and The World Economic Forum. Dr. Kay has received numerous honors, including the ACM Software Systems Award and

the J-D Warnier Prix D'Informatique He has been elected a Fellow of the American Academy of Arts and Sciences, the National Academy of Engineering, and the Royal Society of Arts. A former professional jazz guitarist, composer, and theatrical designer, he is now an amateur classical pipe-organist.

Jaron Lanier

Jaron Lanier is a computer scientist, composer, visual artist, and author. His current appointments include Interdisciplinary Scholar-in-Residence, CET, Center for Entrepreneurship and Technology (CET), UC University of California, Berkeley. His interests include biomimetic information architectures, user interfaces, heterogeneous scientific simulations, advanced information systems for medicine, and computational approaches to the fundamentals of physics. He collaborates with a wide range of scientists in fields related to these interests.

His name is also often associated with Virtual Reality research. Indeed, he did coin the term 'Virtual "Virtual Reality" Reality' and in the early 1980s founded VPL Research, the first company to sell VR products. In the late 1980s he led the team that developed the first implementations of multi-person virtual worlds using head mounted displays, for both local and wide area networks, as well as the first "avatars" or representations of users within such systems. While at VPL, he and his colleagues developed the first implementations of virtual reality applications in surgical simulation, vehicle interior prototyping, virtual sets for television production, and assorted other areas.

He also led the team that developed the first widely used software platform architecture for immersive virtual reality applications. Sun Microsystems acquired VPL's seminal portfolio of patents related to Virtual Reality and networked 3D graphics in 1999. Lanier was an early proponent of the Internet's open culture. In his new book, *Your Are Not a Gadget*, published in January 2010, by Knoph, Lanier examines the downside.

Kaelan Doyle-Myerscough

Kaelan is a gamer, game designer, blogger, (<http://kaylin.deviantart.com/>) and llama herder. She is indispensable in helping the Games for Learning Institute keep its finger on the pulse of their target demographic.

Mitchell Resnick

Mitchel Resnick explores how new technologies can help people (especially children) learn new things in new ways. His Lifelong Kindergarten research group at the MIT Media Lab has developed a variety of educational tools, including the "programmable bricks" that were the basis for the award-winning LEGO MindStorms robotics construction kit. Resnick co-founded the Computer Clubhouse project, an international network of after-school centers where youth from low-income communities learn to express themselves creatively with new technologies. Resnick's group recently developed a new programming language, "Scratch," which makes it easier for kids to create their own animated stories, video games, and interactive art.

Resnick earned a B.S. in physics Physics from Princeton, and an M.S. and Ph.D. in Computer Science from MIT. Before pursuing his graduate degrees, he worked for five years as a science and technology journalist for *Business Week* magazine. He is the author or co-author of several books, including *Turtles*, *Termites*, and *Traffic Jams*." At MIT, Mitchell Resnick is currently the LEGO Papert Professor of Learning Research, the Academic Head, Program in Media Arts and Sciences as well as the Co-Director, Center for Future Civic Media.

Tobi Saulnier

After earning B.S., M.S., and Ph.D. degrees in Electrical Engineering from Rensselaer Polytechnic Institute, Tobi Saulnier spent five years overseeing product development at respected game developer Vicarious Visions before founding 1st Playable Productions in 2005. At VV, she delivered over 60 game titles ranging from *Blue's Clues GBC* to *Doom III Xbox*, establishing a track record of being able to build and train diverse teams to deliver high quality games on time. She led a product development team that grew over five years to include 90 artists, engineers, designers, and project managers, as well as a number of established subcontractors.

1st Playable Productions, located in Troy, NY, is an independent game development studio with a focus on handheld games for kids. 1st Playable is known for building the entertainment brands they represent. They are a licensed developer for Nintendo DS, Nintendo Wii, XBox360 as well as other embedded game platforms. 1st Playable is a community oriented games studio, modeled on the principles of social entrepreneurship. Employees volunteer their time and energy to build community and educational organizations. Company employees balance their passion for development of engaging and fun entertainment license-based games for kids, with new product research to create a new generation of educationally oriented games to inspire and engage kids of all ages. 1st Playable's mission is to inspire kids, gamers and games developers with fun games for entertainment and learning.

Active in the games industry, Tobi is a frequent speaker at industry conferences, and has delivered seminars on topics ranging from kid testing, to IP rights, to the application of new software processes to improve industry quality of life through structured planning and development processes.

Before joining the games industry, Tobi managed R&D in embedded and distributed systems at General Electric Research and Development, where she earned 16 patents, and led initiatives in new product development, software quality, business strategy, and outsourcing. She has written articles appearing in over 25 professional publications.

Will Wright

Will Wright is a pioneer in video game design. As co-founder of the video game developer, Maxis, he is best known as the original designer of the groundbreaking computer game franchise, The Sims, which has gone on to become the best-selling PC game franchise of all time, being available in 22 languages in 60 countries. Wright, who studied Architecture in college, originally conceived of the game as an architectural design simulator. To "score" the quality of the design, he added tiny people who would inhabit the buildings. These simulated people quickly stole the spotlight, and Will realized that watching the lives of the Sims unfold was the real entertainment. The Sims franchise has now sold more than 100 million units sold around the world!

The first computer game Wright designed was Raid on Bungeling Bay in 1984, but it was Sim City that brought him to prominence. The game was released by Maxis, a company Wright formed with Jeff Braun, and he built upon the game's theme of computer simulation with numerous other titles including The Sims, Sim Earth, Sim Ant, Sim Copter as well as a multiplayer version of the game called The Sims Online. Wright's company, Maxis became part of EA Electronic Arts in 1987. In April 2009, Wright left Electronic Arts to run Stupid Fun Club, an entertainment and toy think tank in which Wright and EA are principal shareholders.

Wright's latest work, Spore, was released in September 2008, and features game play based very loosely upon the model of evolution and scientific advancement. The game sold 406,000 copies within three weeks of its release. Will Wright, widely acknowledged for creating the simulation video game realm, unveiled the highly anticipated Spore™ in September 2008. Spore is a "universe in a box" that allows players to create a species and guide it to sentience, helping it build a society, develop its culture, and explore an infinite cosmos of worlds created by other players. Fans eagerly embraced the creation tools in Spore and have created more than 90 million pieces of user-created content as of March 2009. Spore has been distinguished with such honors as Popular Science's "Best of What's New Award", Popular Mechanics' "Breakthrough Award", PC Magazine's "Technical Excellence Award", TIME Magazine's "50 Best Inventions of 2008," and the Jim Henson Technology Honor.

Over his 22-year career in interactive entertainment, Will has won numerous awards and been included in a number of noteworthy lists. In March 2009, Rolling Stone named Will Wright one of the "100 People Who Are Changing America." In 2008, Will received the first ever Gamer God Award at the Spike Video Game Awards. In 2007, the British Academy of Film and Television Arts recognized the videogame industry for the first time when it named Wright a fellow; he received the Producers Guild of America Vanguard Award that same year. Will has been included in Entertainment Weekly's "It List" of the 100 most creative people in entertainment as well as Time magazine's Digital 50, a listing of "the most important people shaping technology today."