About the Authors

Dr. Dee H. Andrews is a research professor with the Arizona State University's College of Technology and Innovation. Previously, he was a member of the scientific and technical cadre of senior executives, is Senior Scientist, Human Effectiveness Directorate, Air Force Research Laboratory, Mesa, Ariz. As Senior Scientist, Dr. Andrews was the laboratory's principal scientific authority for training research. His responsibilities included sustaining technological superiority for training by planning and conducting theoretical and experimental studies. He also mentored and developed the technical staff to assure quality in training research, and represented the laboratory in training research matters to the external scientific and technical community.

Dr. Andrews graduated from Brigham Young University with a degree in psychology in 1976. He holds a master's degree in instructional design and development from Florida State University, and in 1980 earned a doctorate in instructional systems. Dr. Andrews entered federal civil service in 1979. He began work with the Naval Training Systems Center, Orlando, Fla., first as a training analyst and then as training researcher. In 1985 he worked as a senior training researcher with the Army Research Institute for the Behavioral and Social Sciences in Orlando. From 1987 until 2002, he was the Technical Director of the Warfighter Training Research Division of the Air Force Research Laboratory in Mesa, Ariz.

Dr. Andrews' research interests include training in distributed environments, instructor-operator station design, performance measurement, command and control, cost effectiveness, cyber training research, and decay and retention of higher order cognitive skills. He serves as a contributing or consulting editor for seven professional journals and has written more than 70 technical publications. Dr. Andrews is a certified Level III acquisition professional in systems planning, research, development, and engineering. He is a Fellow in the Human Factors and Ergonomics Society; American Psychological Association; Royal Aeronautical Society of the United Kingdom; and the Air Force Research Laboratory. Dr. Andrews is a Certified Human Performance Technologist by the International Society for Performance and Instruction and the American Society for Training and Development.

Pavlo (Pasha) Antonenko is an Assistant Professor of Educational Technology at the University of Florida. Pasha holds a Ph.D. in (a) Curriculum and Instructional Technology and (b) Human Computer Interaction from Iowa State University. He teaches educational technology graduate courses and conducts research in problem-based learning, coregulation of cognition, psychophysiology and cognition, and design of learner- and teacher-friendly interfaces.

Cansu Cigdem Aydin earned a B.Sc. degree in Electronic and Communication Engineering and master's degree in Computer Engineering from Atilim University, where she now works as an instructor. Her research interests include toy-based learning, distance learning, learning management systems, e-learning, and genetic algorithms.

Brian R. Belland is an Assistant Professor of Instructional Technology and Learning Sciences at Utah State University. His research interests center on the use of technology to support middle school students' higher-order thinking abilities. He has won national research awards including the Educational Technology Research and Development Young Scholar Award, the American Educational Research Association (AERA) Instructional Technology Special Interest Group (SIG) Best Paper Award, and the AERA Problem-based Learning SIG Best Student Paper Award. He has published in journals including *Educational Psychology Review, Educational Technology Research & Development, Computers & Education,* and the *Journal of Science Education & Technology.* He received a 2010 National Science Foundation CAREER grant that supports a 5-year project examining the use of scaffolding to support middle school students' construction of evidence-based arguments.

Robert Q. Berry, III is an associate professor of mathematics education in the Curry School of Education at the University of Virginia. His research focuses on pre- and in-service teachers' mathematical knowledge for teaching and mathematics instructional quality. He was recognized as the

J.M. Spector et al. (eds.), *Handbook of Research on Educational Communications and Technology*,
DOI 10.1007/978-1-4614-3185-5,

2011 Mathematics Educator of the Year by the Virginia Council of Teachers of Mathematics, and is a member of the executive board of the National Council of Teachers of Mathematics (2011–2014).

MJ Bishop is an Associate Professor and Director of the Lehigh University College of Education's Teaching, Learning, and Technology Program. Author of numerous national/international articles, her research interests include exploring how various instructional media and delivery systems might be designed and used more effectively to improve learning. Bishop received the 2001 "Young Scholar Award" from the Association for Educational Communications and Technology for her doctoral dissertation, "The Systemic Use of Sound in Multimedia Instruction to Enhance Learning," which was subsequently published in *Educational Technology Research and Development*. MJ teaches courses in instructional design, interface design, and Website and resource development at Lehigh.

TJ Bliss is a Ph.D. student in the Educational Inquiry, Measurement, and Evaluation Program at Brigham Young University, where he also works with the Open Education Group.

Elizabeth Boling, professor of Instructional Systems Technology at College of Education, Indiana University Bloomington, teaches and conducts research on the use of images in instruction, on the nature of design, and on design pedagogy. With 15 years experience as a designer in the commercial field, she designs innovative learning materials and explores the studio method of teaching.

Her background in practice encompasses studio art, visual and interface design for instructional media, and management of interactive products for Apple Computer. She has taught instructional design and development at Indiana University for 18 years, served as Editor-in Chief for *TechTrends* and is currently the editor of *International Journal of Designs for Learning*.

David Boud is Professor of Adult Education in the Faculty of Arts and Social Sciences, University of Technology, Sydney. He is a Senior Fellow of the Australian Learning and Teaching Council. His research interests are in teaching, learning and assessment in higher and professional education, and in learning in organizations and workplaces. His most recent books (with various others) are *Rethinking Assessment in Higher Education: Learning for the Longer Term*, and *Changing Practices in Doctoral Education*. He is Editor-in Chief of the international journal, *Studies in Continuing Education*.

Robert Maribe Branch is Professor at The University of Georgia. Rob earned an Associate of Science degree from New York City Technical College in Brooklyn, New York; a Bachelor of Science degree from Elizabeth City State University in North Carolina; and a master's degree from Ball State University in Muncie, Indiana. Rob taught secondary school in Botswana as a Peace Corps Volunteer and later joined the University of Botswana for several years as a lecturer in the Technical Education Department. Rob returned to the United States, and completed a Doctor of Education degree from Virginia Tech in Blacksburg, Virginia in 1989, specializing in learning, design, and technology. Dr. Branch joined the faculty at Syracuse University and taught graduate courses and conducted research in the Department of Instructional Design, Development, and Evaluation where he was promoted to Associate Professor and earned tenure during his 7 years there. Dr. Branch is a former Fulbright Lecturer/Researcher to the University of KwaZulu-Natal in Durban, South Africa, where he assisted with founding a master's degree program in Media Studies and conducted research on the complexities of intentional learning space. Dr. Branch recently served as an invited discussant to the 20th Annual Oxford Roundtable at Oxford University in England. He has coedited the Educational Media and Technology Yearbook since 1997, and coauthored the two recent editions of the popular Survey of Instructional Development Models book. Dr. Branch emphasizes student-centered learning, teaches courses related to project management and instructional systems design, and consults regularly with governments, businesses, and other educational institutions on strategic planning. Dr. Branch's published research focuses on diagramming complex conceptual relationships and other complicated flow processes.

Saskia Brand-Gruwel is professor in the Learning Sciences and director of the Education & Training Institute at the Centre for Learning Sciences and Technologies (CELSTEC) at the Open University of the Netherlands. She is secretary of the Dutch Educational Research Association (VOR) and theme coordinator of the Interuniversity Centre for Educational Sciences (ICO). Her expertise includes information literacy, self-regulated and self-directed learning, and designing and developing flexible learning environments.

Anique de Bruin is an assistant professor in educational psychology at Maastricht University, the Netherlands. Her Ph.D. dissertation focused on the cognitive development of expertise, more specifically on the influence of deliberate practice on achieving excellence in chess. This research instigated her interest in reflection, and more generally, in metacognition. Her research now combines these themes, studying how experts reason, and how novices can be stimulated to improve their metacognitive skills in order to optimize their study behavior and their learning performance. She received two separate grants from the Dutch Science Foundation, and supervises several Ph.D. students on these themes. She studies these themes in diverse domains (e.g., medicine, language learning, text comprehension, problem solving), with students of various ages (e.g., primary and secondary school students, college students,

expert physicians), and with several methodologies (e.g., experimental research, eye tracking, fMRI).

Glen Bull is a professor of instructional technology in the Curry School of Education at the University of Virginia and codirector of the Curry Center for Technology & Teacher Education. He is editor of *Contemporary Issues in Technology and Teacher Education* and directs the National Technology Leadership Coalition, a consortium of 12 national education associations. He is a founding member and past president of the Society for Information Technology and Teacher Education, and recipient of the Willis Award for Outstanding Lifetime Achievement in Technology and Teacher Education.

Mr. Kelvin Bullock is currently a secondary social studies teacher at Hillside New Tech High School in Durham, North Carolina. He is also a doctoral student at North Carolina State University in the department of Curriculum and Instruction. His research interests include project-based learning, action research, African American student achievement, critical theory, and equity pedagogy.

Dr. Kursat Cagiltay is Professor of the Department of Instructional Technology at the Middle East Technical University (METU), Ankara, Turkey. He earned his BS in Mathematics and MS in Computer Engineering from Middle East Technical University. He holds a double Ph.D. in Cognitive Science and Instructional Systems Technology from Indiana University. Professor Cagiltay is the director of METU's Instructional Technology Support Office which runs METU Open CourseWare project. He is also board member of Turkish OCW consortium. He is the founder of two research groups at METU: Simulations and Games in Education (SIMGE—simge.metu.edu.tr) and HCI research group (hci.metu.edu.tr). He also established Turkey's first HCI research lab with eye-tracking facility at METU. He has been publishing in various refereed journals including British Journal of Educational Technology, Innovations in Education and Teaching International, New Media & Society. He is also coauthor of the chapter "User-Centered Design and Development" in the Handbook of Research on Educational Communications and Technology (3rd ed.). His research focuses on, Human Computer Interaction, Instructional Technology, Social and cognitive issues of electronic games, sociocultural aspects of technology, technology-enhanced learning, Human Performance Technologies.

Saul Carliner is Director of the Education Doctoral Program and an associate professor of educational technology at Concordia University in Montreal. His research interests include emerging forms of online communication and training for the workplace; management of groups that prepare these materials; informal learning; and transferring research results to practice. He has received funding from the Social Sciences and Humanities Research Council of Canada, Hong Kong University Grants Council, Canadian Council for Learning, Society for Technical Communication, and Knowledge One. Also an industry consultant, Carliner offers strategic planning for departments, projects, and technology, and offers related facilitation for clients such as AT&T, Chubb Insurance, Cossette Communications, Georgia Tech, IBM, Lowe's, Microsoft Corporation, Montreal Holocaust Memorial Centre, ST Microelectronics, UPS, and several Canadian and US government agencies. An experienced author and publishing professional, he has also published over 100 articles and 8 books, including the newly published Informal Learning Basics (ASTD Press), award-winning e-Learning Handbook (with Patti Shank), and best-selling Training Design Basics and Designing e-Learning. Carliner is a Certified Training and Development Professional (CTDP), editor-in-chief of the IEEE Transactions on Professional Communication, board member and chair of the Certification Steering Committee of the Canadian Society for Training and Development, a past Research Fellow of the American Society for Training and Development, a board member of the STC Certification Commission, and a Fellow and past international president of the Society for Technical Communication. He holds degrees from Carnegie Mellon University, University of Minnesota, and Georgia State University.

Dr. Carr-Chellman is currently serving as the head of the Learning and Performance Systems department in the College of Education at The Pennsylvania State University. She teaches courses in adoption and diffusion of innovations, qualitative research, systemic theory, and e-learning. She is author of more than 100 publications including her recent book, *Instructional Design for Teachers: Improving Classroom Practice* from Routledge last year.

Dr. Chang is currently Assistant Professor in the Graduate Institute of Science Education at the National Kaohsiung Normal University, Taiwan. She conducts research on computer visualizations, animations, and models to support science learning, use of critique to scaffold student understanding of science, and design of technology-enhanced science curricula.

Dr. Ching is Visiting Assistant Professor of Educational Technology at Boise State University. She earned her Ph.D. in Instructional Systems with a doctoral minor in Educational Psychology from the Pennsylvania State University. Her research interests include Web 2.0 technologies for teaching and learning, computer-supported collaborative learning, and ill-structured problem solving. She has taught graduate level online courses on Instructional Design, Theoretical Foundations of Educational Technology, and Internet for Educators.

Jennifer Chiu is an assistant professor of STEM (science, technology, engineering, and mathematics) education in the Curry School of Education at the University of Virginia. She served as a Technology-Enhanced Learning in Science fellow at the University of California at Berkeley. Her research

interests include design of Web-based Inquiry Science Environment (WISE) curricula and extensions related to integration of engineering design processes.

Rhonda Christensen, Ph.D.: Research Scientist, Institute for the Integration of Technology into Teaching & Learning. She was an elementary school classroom teacher for 5 years prior to earning her Ph.D. in Information Sciences in 1997. She has also taught preservice and inservice teachers to integrate technology into teaching and learning for 12 years. She has extensive experience in evaluation and research of small and large technology integration projects at the local school district level as well as for state and federal government funded projects. She has recent experience as a school technology coordinator in middle school projects related to technology and hands-on science. She is currently co-PI on a National Science Foundation-funded Project called MSOSW: Middle Schoolers Out to Save the World in which she coordinates major MSOSW project activities, including curriculum development, teacher training, classroom implementations, and cross-site collaborations.

Sebnem Cilesiz is Assistant Professor of Cultural Foundations, Technology, and Qualitative Inquiry at The Ohio State University. She has earned her Ph.D. from the University of Florida (2006), Ed.M. from Harvard University (2001), and B.S. from Middle East Technical University (1998). Her current research focuses on social and cultural contexts of educational technology, international issues in educational technology, and qualitative research methodology. Dr. Cilesiz's work has been published in *American Education Research Journal*, *Educational Technology Research & Development*, and *Qualitative Inquiry*. She is the 2010 winner of the *ETR&D Young Scholar Award* from AECT.

Geraldine Clarebout is associate professor at the faculty of Psychology and Educational Sciences and works at the Center for Instructional Psychology and Technology of the KU Leuven (Belgium). She got her Ph.D. at the KU Leuven with a dissertation on the enhancement of tool use in open learning environments. Her research interests are students' tool use in open learning environments and variables that might influence tool use; use of instructional interventions; blended learning; role and functions of pedagogical agents; mobile learning; and multitasking. She teaches courses on educational technology on graduate and undergraduate level.

Richard Clark is Professor of Educational Psychology and Technology, Professor of Clinical Research in Surgery and Codirector of the Center for Cognitive Technology at the University of Southern California. Before coming to USC he was a faculty member in Psychology and Education at Stanford and Syracuse Universities. He is also CEO of Atlantic Training Inc. and Chief Science Officer for Expert Knowledge Solutions LLC. Dick is the author of over 300 published articles and book chapters as well as three recent books—*Learning from Media: Arguments, analysis and evidence Second Edition*. (2012, Information Age Publishers); *Handling Complexity in Learning Environments: Research and Theory* (2006, Elsevier) and *Turning Research into Results: A guide to selecting the right performance solutions* (2008, Information Age Publishers) which received the International Society for Performance Improvement (ISPI) Award of Excellence. In recent years he has received the Thomas F. Gilbert distinguished professional achievement award and a Presidential Citation for Intellectual Leadership from ISPI, the SITE Foundation Excellence in Research Award, the ASTD research study of the year award for his work on performance incentives, the 2010 Thalheimer Neon Elephant Award for bridging the gap between science and practice, the 2011 Presidential Award for Intellectual Leadership from AECT, the Socrates award for excellence in teaching from the graduate students at USC and the Outstanding Civilian Service Award from the U. S. Army for his work in distance learning. Dick is an elected Fellow of the American Psychological Association (Division 15, Educational Psychology), the American Educational Research Association and the Association of Applied Psychology and is a Founding Fellow of the Association for Psychological Science.

Norma A. Juarez Collazo is a Ph.D. student at the University of Leuven at the Center of Instructional Psychology and Technology. Her main research interests focus on exploring the functionality of tools in computer-based learning environments and the types of cognitive, metacognitive and motivational variables that may influence quantity and quality of tool use.

Dr. Connor is an Associate Professor at Florida State University in Developmental Psychology and the Florida Center for Reading Research with appointments in Communication Sciences and the School of Teacher Education. Her research examines the links between young children's language and literacy development with the goal of illuminating reasons for the perplexing difficulties children who are atypical and diverse learners have developing basic and advanced literacy skills. Most recently, her research interests have focused on children's learning in the classroom—from preschool through fifth grade. Published in journals including *Science* and *Child Development*, her studies indicate that the effectiveness of specific instructional activities depends on the language and reading skills children bring with them to school; these child-by-instruction interactions are evident as early as preschool and continue at least through third grade for a number of child language and literacy outcomes. An integral part of this intervention is software that uses algorithms to compute recommended amounts and types of instruction based on students' assessed skills. Awarded the Presidents' Early Career Award for Scientists and Engineers (PECASE, 2008), the Society for

Research in Child Development (SRCD, 2009) Early Career Award, and the Richard Snow Award (APA, 2008), her research has been and is currently funded by the US Department of Education, Institute for Education Sciences and the National Institute for Child Health and Human Development. Most recently she is investigating the classroom learning environment for children with learning disabilities and instruction to improve reading for understanding. She also conducts research focusing on the language and literacy development of profoundly deaf children including those who use cochlear implants.

Dr. Ann-Louise Davidson is an assistant professor of Education at Concordia University where she teaches in the educational technology graduate program. She holds degrees from the University of Ottawa and she completed a postdoctorate at Carleton University.

Dr. Davies is currently an assistant professor of Instructional Psychology and Technology at Brigham Young University. His professional experience includes 10 years as a high school technology and mathematics teacher. He also worked for several years teaching computer science, evaluation, assessment, and research-related topics at the college level. His research involves program evaluation in educational settings with the general objective of understanding and improving the teaching and learning process. His research has a specific focus of evaluating technology integration, assessment policy, and educational practices.

Lisa Dawley, Ph.D., is a Professor and Director in the Department of Educational Technology at Boise State University. With over 20 years of experience in teacher education research, practice, and policy, Dawley provides leadership in the innovative design and pedagogy of virtual environments for teaching and learning. She is a coinventor of *3D GameLab*, a quest-based learning software, and she created *EDTECH Island*, a VW simulation supporting global networked teacher education. She is coauthor of the *Going Virtual!* research series studying professional development for K-12 online teachers. Dawley received a Top 20 Bestselling Books Award for her text, *The Tools for Successful Online Teaching*. Dawley was a cofounder and former chair of the Applied Research in Virtual Environments for Learning Special Interest Group (ARVEL SIG) affiliated with the American Educational Research Association. She was an invited research fellow at Stanford's Center for Advanced Study in the Behavioral Sciences summer institute, and recipient of grants from HASTAC and the Spencer Foundation. She received the Distinguished Research Award from the Association of Teacher Educators, and two Presidential Service Awards from the Association of Educational Communications & Technology.

Chris Dede is the Timothy E. Wirth Professor in Learning Technologies at Harvard's Graduate School of Education. His fields of scholarship include emerging technologies, policy, and leadership. His current research includes seven grants from NSF, Qualcomm, the Gates Foundation, and the US Department of Education Institute of Education Sciences to explore immersive simulations and transformed social interactions as means of student engagement, learning, and assessment. In 2007, he was honored by Harvard University as an outstanding teacher, and in 2011 he was named a Fellow of the American Educational Research Association.

Chris has served as a member of the National Academy of Sciences Committee on Foundations of Educational and Psychological Assessment and a member of the 2010 National Educational Technology Plan Technical Working Group. He serves on Advisory Boards and Commissions for PBS TeacherLine, the Partnership for twenty-first Century Skills, the Pittsburgh Science of Learning Center, and several federal research grants. His coedited book, *Scaling Up Success: Lessons Learned from Technology-Based Educational Improvement*, was published by Jossey-Bass in 2005. A second volume he edited, *Online Professional Development for Teachers: Emerging Models and Methods*, was published by the Harvard Education Press in 2006. His latest coedited book, *Digital Teaching Platforms*, will be published by Teachers College Press in 2012.

Loretta Donovan, Ph.D., a former elementary school teacher, is an associate professor at California State University, Fullerton. Her research, teaching, and service focus on effective uses of technology for teaching and learning. She is involved in developing and evaluating 1:1 laptop programs in K-8 and higher education. Dr. Donovan received her Ph.D. in Educational Technology from the University of Nevada, Las Vegas. Dr. Donovan contributed a chapter discussing teacher education standards from the educational technology perspective in *Standards for Teacher Educators: Establishing a Vision for the Profession,* and her research was selected to be in *Considerations on technology and Teachers: The best of JRTE*.

Dr. Matt Dunleavy is an Assistant Professor in Instructional Technology at Radford University in Virginia. From 2006 to 2007, he was a postdoctoral fellow in learning technologies at the Harvard Graduate School of Education and the director of the Handheld Augmented Reality Project (HARP). Dr. Dunleavy received his Ph.D. in Educational Research, Statistics, and Evaluation at the University of Virginia, where he focused on the impact of ubiquitous computing on student learning and the classroom environment. Prior to completing his formal education, he lived overseas teaching English as a Second Language in Cameroon, Central Africa as a Peace Corps volunteer and then independently in Taiwan, Republic of China. He has served as the principal investigator on a National Science Foundation grant and a Virginia Department of Education grant (http://gameslab.radford.edu/), both of which explored how mobile technology and

augmented reality can be used to improve academic and sociocultural skills for K-16 school students.

Prof. Dr. ir. Erik Duval is a full professor ("hoogleraar") at the computer science department of the Katholieke Universiteit Leuven. Erik's research focuses on management of, and access to, structured and unstructured data. In practical terms, his research efforts mainly relate to repositories, federated search, harvesting, content management, but also more end user oriented aspects like information visualization, mobile information devices, multitouch displays, and mash-ups. His group typically applies research results to technology-enhanced learning, access to music, and "research2.0". His current obsession is massive hyper personalization ("The Snowflake Effect") a topic on which he regularly keynotes. He is a member of the Scientific and Technical Council of the SURF Foundation, a fellow of the AACE, a member of ACM, and the IEEE computer society. He is on the Board of Editors of the Journal of Universal Knowledge Management; the Editorial Review Board and the Executive Advisory Board of the International Journal on E-Learning.

Jan Elen is professor at the KU Leuven (Belgium), Center for Instructional Psychology and Technology. He got his Ph.D. at the KU Leuven with a dissertation on the transition from description to prescription in instructional design. He teaches in the domains of educational psychology and educational technology both at the graduate and the undergraduate level. His current research interests relate to the theoretical and empirical underpinnings of instructional design models, the actual use of instructional interventions by students, serious gaming in mathematics, and the integration of research into higher education. He is one of the editors of the fourth edition of the Handbook of Research on Educational Communications and Technology.

Dr. James Ellsworth is Professor of Online Education at the U.S. Naval War College, an accredited, master's degree granting institution preparing senior leaders for executive roles across the Armed Forces, State Department, Department of Homeland Security, and other national security-related agencies. A prominent theorist and practitioner in the design of learning systems for information-based society, he is also one of the coordinators of the Naval War College's leadership & professional ethics program. His civilian research focuses on leadership of change in educational settings, and he is the author of numerous publications on the subject, including the book *Surviving Change: A Survey of Educational Change Models*. Dr. Ellsworth earned his Ph.D. in Instructional Design, Development & Evaluation from Syracuse University, holds master's degrees in Business Administration and National Security & Strategic Studies, and is a Certified Performance Technologist. He is listed in both *Who's Who in America* and *Who's Who in American Education*.

Dr. Epling is an Associate Professor and Chair of the Department of Family Medicine at the State University of New York—Upstate Medical University in Syracuse, NY. He holds a joint appointment in the Department of Public Health and Preventive Medicine. In addition to maintaining an active clinical family practice, he conducts research and scholarly activity in the field of evidence-based medicine, clinical and population-based prevention, and translation and synthesis of research findings into clinical practice. He is also the medical director of the Central New York Regional Office of the New York State Area Health Education Centers.

Dr. Epling completed a faculty development fellowship in Evidence-Based Practice, Policy and Education at SUNY-Upstate Medical University in 2004. As part of that fellowship, he has received a Master of Science degree in Instructional Design, Development and Evaluation concentrating in performance technology and performance improvement.

He teaches Family Medicine, Clinical Prevention, and Evidence-Based Medicine at Upstate Medical University and its affiliated Family Medicine residency programs. He has received the Alpha Omega Alpha Gamma Chapter's Teaching award (2010) and was the University's Finalist for the Association of American Medical Colleges Humanism in Medicine award (2005).

Dr. Epling received his Bachelor of Arts degree with Honors in Russian Studies from Brown University in 1988. He received his Doctor of Medicine degree from Tufts University in 1992. He completed his residency training at the Medical University of South Carolina in 1995. He has served on the SUNY-Upstate faculty since 1999.

Dr. Michael A. Evans is Associate Professor and Program Area Leader of Instructional Design and Technology in the Department of Learning Sciences and Technologies at Virginia Tech. He received a B.A. and M.A. in Psychology from the University of West Florida and a Ph.D. in Instructional Systems Technology from Indiana University. His work focuses on the effects of multimedia methods and technologies on instruction and learning. Current research focuses on the design, development, and evaluation of instructional multimedia for interactive surfaces (personal media devices, smart phones, tablets, tables, and whiteboards) to support collaborative learning as well as the adoption of video game elements for instructional design, particularly for informal STEM learning.

Jill Feldman, Ph.D. is a Senior Study Director at Westat and past-President and current member of the Eastern Evaluation Research Society's Board of Directors. Dr. Feldman has a background in educational psychology with expertise in designing and directing large federally funded program evaluations in the areas of teacher professional development, science, technology, engineering, and mathematics (STEM) education, positive youth development, and adolescent literacy programs. Dr. Feldman has extensive

experience presenting on topics such as evaluation-related methods, designs, and findings; and has a track record of related publications. She frequently serves as an expert proposal review panelist and invited speaker at professional meetings to enhance capacity of grantees to independently design and conduct high-quality program evaluations.

Barry Fishman is an Associate Professor of Learning Technologies in the University of Michigan School of Education and School of Information. His research focuses on the use of technology to support teacher learning and practice, standards-based systemic school reform, and the role of educational leaders in fostering classroom-level reform involving technology. He serves as an Associate Editor of *The Journal of the Learning Sciences* and was a coauthor of the Obama Administration's 2010 U.S. National Educational Technology Plan. Dr. Fishman's recent research includes an NSF-funded experimental study of teacher learning in face-to-face and online conditions that examines the relationship between professional development modality and changes in teacher knowledge, practice, and student learning, and IES-funded research in collaboration with Carol Connor at Florida State University focused on developing tools to support differentiated instruction by early literacy teachers. This work builds on prior research in professional development design, including the construction of an online professional development tool for use in curriculum-based reforms called Knowledge Networks On the Web. Dr. Fishman is the 2010 recipient of the Provost's Teaching Innovation Prize and the 2003 Pattishall Junior Faculty Research Award from the University of Michigan, the 2001 recipient of the Jan Hawkins Award for Early Career Contributions to Humanistic Research and Scholarship in Learning Technologies, and his work with the Center for Learning Technologies in Urban Schools was recognized with an Urban Impact Award from the Council of Great City Schools and as a Computerworld/Smithsonian Laureate. He received his A.B. from Brown University in English and American Literature in 1989, his M.S. from Indiana University in Instructional Systems Technology in 1992, and his Ph.D. in Learning Sciences from Northwestern University in 1996.

J. D. Fletcher is a Research Staff Member at the Institute for Defense Analyses where he specializes in manpower, personnel, and training issues. He holds graduate degrees in computer science and educational psychology from Stanford University, where, as a research associate, he directed numerous projects for the Institute for Mathematical Studies in the Social Sciences. He has held academic positions in psychology, educational psychology, computer science, and systems engineering. He has held government positions in Navy and Army Service Laboratories, the Defense Advanced Research Projects Agency, and the White House Office of Science and Technology Policy. He has served on various national science and technology panels, including those of the Defense Science Board, Army Science Board, Naval Studies Board, Air Force Scientific Advisory Board, the National Academy of Engineering, and the National Research Council. He has published widely and has served on the editorial boards of professional journals in psychology, education, and human factors. He has designed computer-based instruction programs used in public schools and training devices used in military training. He has been elected Fellow in the American Educational Research Association and three Divisions of the American Psychological Association.

His publications include the following:

Fletcher, J. D., Tobias, S., & Wisher, R. L. (2007). Learning anytime, anywhere: Advanced distributed learning and the changing face of education. *Educational Researcher, 36(2)*, 96–102.

Fletcher, J. D., & Morrison, J. E. (2008). Representing cognition in games and simulations. In E. L. Baker, J. Dickieson, W. Wulfeck, & H. O'Neil (Eds.), *Assessment of problem solving using simulations* (pp. 107–137). Mahwah, NJ: Lawrence Erlbaum.

Fletcher, J. D. (2009). The military value of expertise and expert performance. In K. A. Ericsson (Ed.), *Development of professional expertise: Toward measurement of expert performance and design of optimal learning environment* (pp. 449–469). Cambridge, UK: Cambridge University Press.

Fletcher, J. D. (2009). From behaviorism to constructivism: A philosophical journey from drill and practice to situated learning (pp. 242–263). In S. Tobias, & T. D. Duffy (Eds.), *Constructivist instruction: Success or failure*? New York, NY: Taylor and Francis.

Fletcher, J. D. (2009). Education and training technology in the military. *Science, 323*, 72–75.

Fletcher, J. D., & Chatham, R. E. (2010). Measuring return on investment in military training and human performance. In P. E. O'Connor, & J. V. Cohn (Eds.), *Human performance enhancements in high-risk environments* (pp. 106–128). Santa Barbara, CA: Praeger.

Fletcher, J.D. (2010). Cost analysis in evaluation studies. In E. Baker, B. McGaw, & P. Peterson (Eds.), *International encyclopedia of education*(3rd ed., pp. 585–591). Burlington, MA: Elsevier.

Fletcher, J. D. (2010). Why ADL? Research foundations. In R. A. Wisher, & B. H. Khan (Eds.), *Learning on demand: ADL and the future of e-Learning* (pp. 21–39). Washington DC: Department of Defense.

Tobias, S., Fletcher, J. D., Dai, D.Y., & Wind, A. (2011). Review of research on computer games. In S. Tobias, & J. D. Fletcher (Eds.), *Computer games and instruction* (pp. 127–222). Charlotte, NC: Information Age.

Wellesley R. ("Rob") Foshay is Director of Educational Research for the Education Technology Group of Texas

Instruments, where he manages TI's extensive research portfolio on effectiveness of their products and services in math and science education. His research interests include teaching and assessment of ill-structured problem solving, decision making, design and troubleshooting/diagnosis competencies, and e-learning design strategies including learning objects and simulations, as well as applications of Human Performance Technology. He is active in ISPI, AERA, and AECT, and reviews for four research journals. His doctorate is from Indiana University in educational technology.

Andy Gibbons is the chair of the Instructional Psychology and Technology department at Brigham Young University. Prior to that, he was a faculty member at Utah State University for 10 years. For the first 18 years of his career he led instructional design projects in industry, including work on large-scale training development, design of simulations, and innovative forms of computer-based instruction. Dr. Gibbons' research focuses on the architecture of instructional designs. He has published a design theory of Model-Centered Instruction, proposed a Layering Theory of instructional designs, and is currently studying the use of design languages in relation to design layers to create instructional systems that are adaptive, generative, and scalable.

Linda Gilbert has been presenting and training on qualitative data analysis software since 1998. Dr. Gilbert received her Ph.D. in Instructional Technology from the University of Georgia in 1999, where she studied the use of qualitative data analysis programs by researchers who had experience working manually and with qualitative data analysis software for her dissertation work (*Reflections of qualitative researchers on the use of qualitative data analysis software: An activity theory perspective*). She was an invited keynote speaker at the Third Conference on Strategies in Qualitative Research: Methodological issues and practices in using QSR NVivo and NUD*IST, held at the University of London, Institute of Education in 2002. Her research interests involve the ways in which people use computers for higher-level creative and intellectual tasks, activity theory, and qualitative research methodology and practice.

Tamara van Gog is Associate Professor of Educational Psychology at the Institute of Psychology of the Erasmus University Rotterdam, The Netherlands. She holds a Master degree in Developmental and Educational Psychology from Tilburg University, The Netherlands, and a Ph.D. in Educational Technology from the Open University of The Netherlands. Her main research interests pertain to example-based learning, self-regulated learning, and techniques for uncovering and measuring cognitive processes and cognitive load.

Susan R. Goldman, (Ph.D., University of Pittsburgh) is Distinguished Professor of Liberal Arts and Sciences, Psychology, and Education and Codirector of the Learning Sciences Research Institute at the University of Illinois at Chicago. She conducts research on subject matter learning, instruction, assessment, and roles for technology, especially in literacy and mathematics. A particular focus of her current research is on understanding the literacy demands in different disciplinary contexts and the implications of these demands for supporting learning. She is pursuing this work in the context of a recently funded major initiative of the Institute for Education Sciences, U. S. Department of Education, *Reading for Understanding Across Grades 6 through 12: Evidence-Based Argumentation for Disciplinary Learning*. As Principal Investigator for this grant, she is coordinating a research and development collaboration among five institutions (University of Illinois at Chicago, Northern Illinois University, Northwestern University, WestEd, and Inquirium LLC) and several school districts. They are researching the processes, instructional practices, and materials needed to support evidence-based argumentation from multiple sources in literature, history, and science across grades 6–12. In other work, Goldman is focusing on the language demands of ninth grade algebra. In the assessment area, she is developing Web-based tools for measuring digital literacy skills, including selection, analysis, and synthesis of multiple information sources in the context of inquiry tasks. She is also examining the cognitive, psychometric, and instructional validity of embedded assessments in two standards-based mathematics curriculum. She collaborates with educational practitioners to bridge research and practice, and has recently completed a project that focused on building capacity for high quality teaching and student learning in literacy in K-8 schools. She has developed and researched several technology-based environments for learning and assessment, including the mathematics problem-solving series *The Adventures of Jasper Woodbury,* and *The Little Planet Literacy Series.* Goldman is widely published in discourse, psychology, and education journals. Her contributions have been recognized by election to the National Academy of Education, being named a Fellow of the American Educational Research Association and of the Society for Text and Discourse, and selection as the Inaugural Outstanding Alumnus of the Learning Research and Development Center. Goldman serves the field through a number of editorial appointments, including serving as Executive Editor for *Cognition & Instruction* and Associate Editor for *Journal of Educational Psychology.* She is on the editorial board of *Reading Research Quarterly, Journal of the Learning Sciences,* and *Educational Psychologist.* Goldman is a board member and President of the International Society of the Learning Sciences (2011–2012), served as President of the Society for Text and Discourse (2000–2007), and Vice-President for Division C of the American Educational Research Association (2000–2002).

Peter Goodyear is Professor of Education and codirector of the CoCo research center at the University of Sydney. He is a Senior Fellow of the Australian Learning and Teaching Council and an Australian Research Council Laureate Fellow. His research interests include: methods and tools for the design of complex learning environments; computer-supported collaborative learning (networked learning); the nature of professional knowledge and professional learning; teachers' professional knowledge. He has been using online methods for collaborative professional learning and innovation for over 20 years—in the UK and Europe as well as Australia. He has extensive experience of managing large-scale evaluation projects. His latest books (2010) are *Students' experiences of e-learning in higher education: the ecology of sustainable innovation* (Routledge, with Rob Ellis) and *Technology-enhanced learning: design patterns and pattern languages* (Sense Publishers, with Simeon Retalis). He edits the journal *Instructional Science* and is a member of the executive of the Australian Association for Research in Education.

Erik de Graaff (Ph.D.). Professor in Engineering Education and PBL at Aalborg University, Associate Professor in Engineering Education at TU Delft

Erik de Graaff is trained as psychologist and holds a Ph.D. in social sciences. He has been working with Problem-Based learning (PBL) in Maastricht from 1979 till 1980. In 1994 he was appointed as associate professor in the field of educational innovation at the Faculty of Technology Policy and Management of Delft University of Technology. Dr. de Graaff has been a visiting professor at the University of Newcastle, Australia in 1995 and a guest professor at Aalborg University in Denmark. In 2007 he was appointed as extraordinary professor at Aalborg University. The collaboration with Aalborg University resulted in an appointment as full professor at the department of Development and Planning in 2011. Dr. de Graaff contributed to the promotion of knowledge and understanding of higher engineering education with numerous publications and through participation in professional organizations like SEFI, IFEES and ALE. He has published over 200 articles and papers and he has presented more than 50 keynotes and invited lectures. Since January 2008 he is Editor-in-Chief of the European Journal of Engineering Education.

Dr. Grabowski is Professor of Education in the Instructional Systems Program, College of Education at Penn State University. She is a former president of the International Board of Standards for Training, Performance, and Instruction (ibstpi) and current ibstpi fellow. She has also held an academic appointment at the University of Maryland School of Medicine and Syracuse University. In between academic appointments, she worked at the University of Maryland University College where she designed, developed and evaluated a premier distance education program for nuclear reactor operators, and designed multimedia materials for industry, the military, and medical environments. She has been nationally and internationally recognized for the innovative programs she designed and developed over the years. She has also received two outstanding book awards from the Association for Educational Communications and Technology, has published widely, and has been an invited keynote speaker on four continents. Her research over the years has focused on pedagogical uses of emerging technologies, with a special emphasis on online teaching and learning for K-12, college, and adult learners.

Sabine Graf has a Ph.D. from Vienna University of Technology, Austria, and is presently an Assistant Professor at Athabasca University, School of Computing and Information Systems, in Canada. Her research expertise and interests include adaptive and personalized learning systems, student modeling, ubiquitous and mobile learning, artificial intelligence, and collaborative learning technologies. She has published more than 80 peer-reviewed journal papers, book chapters, and conference papers in these areas, of which three conference papers were awarded with a best paper award. Dr. Graf is Executive Board Member of the IEEE Technical Committee on Learning Technologies, Editor of the Learning Technology Newsletter, a publication of the IEEE Computer Society's Technical Committee on Learning Technology (TCLT), and Associate Editor of the International Journal of Interaction Design and Architectures. She is an active member of the research community, serving as editorial board member of three international journals, workshop chair and organizer of eight international workshops, doctoral consortium chair at three international conferences, and guest editor of three special issues. Dr. Graf has been invited to given keynote/invited talks at universities/companies/conferences in Austria, Canada, Colombia, New Zealand, Taiwan, and UK.

Charles R. Graham is an associate professor in the Department of Instructional Psychology and Technology at Brigham Young University, with interest in technology-mediated teaching and learning. Charles studies the design and evaluation of online and blended learning environments and the use of technology to enhance teaching and learning. He has authored articles in many journals, including *Quarterly Review of Distance Education*, *Educause Quarterly*, *Small Group Research*, *Educational Technology*, *TechTrends*, *Educational Technology Research & Development*, *Active Learning in Higher Education*, *Journal of Computing in Teacher Education, Computers in the Schools* and the *International Journal of Instructional Technology and Distance Learning*. Charles has also published work related to online and blended learning environments in edited books including *Online Collaborative Learning: Theory and Practice*; *Blended Learning: Research Perspectives*; *The Encyclopedia of Distance Learning*; and

the *AECT Handbook of Research on Educational Communications and Technology.* Charles also coedited the *Handbook of Blended Learning: Global Perspectives, Local Designs,* which contains 39 chapters with examples of blended learning in higher education, corporate, and military contexts from around the world.

Dr. Green, a former K-12 teacher, is a Professor in the Department of Elementary and Bilingual Education at California State University, Fullerton where he specializes in educational technology. His degree is in Instructional Systems Technology from Indiana University. He has written and presented in the areas of integrating educational technology in teaching at learning in K-12 and higher education, instructional design, and online distance education. He is the coauthor of *The Essentials of Instructional Design: Connecting Fundamental Principles with Process and Practice (2nd Edition).* He is a contributing editor for *The Social Studies*.

Brian Greer studied mathematics at Cambridge University (B.A., 1966) and then education and psychology at Queen's University, Belfast (M.Sc. in Developmental and Educational Psychology, 1969, Ph.D. in Psychology, 1973). He worked in the School of Psychology at Queen's University till 2000, advancing to the position of Reader. From 2000 to 2005 he was a Full Professor in the School of Mathematical Sciences at San Diego State University, before moving to Portland, Oregon, where he continues to work as an independent scholar, often closely in collaboration with his wife, Swapna Mukhopadhyay. As part of a fruitful long-term collaboration with Lieven Verschaffel and others, he was a Senior Visiting Fellow at University of Leuven in 2005 and 2007.

His work evolved from a general interest in the psychology of mathematical cognition to a more practice-oriented interest in mathematics education, to an interest in the social, cultural, and political aspects of mathematics education. These phases are exemplified, respectively, in three of his books: *Analysis of Structural Learning* (with M. A, Jeeves, 1983, Academic Press), *Making Sense of Word Problems* (with L. Verschaffel and E. De Corte, 2000, Swetz & Zeitlinger), and *Opening the Cage? Critique and Politics of Mathematics Education* (edited with O. Skovsmose, in press, Sense Publishers). During the first phase (1973–1983), his main interests were in structural learning and in the relationships between cognitive and developmental psychology and mathematics education. During the second phase (1983–1996), he worked on multiplicative structures, mathematical modeling, probability and statistics, and word problems. Since 1996, his work has focused on critical mathematics education, with a continuing interest in the relationships between psychology and mathematics education.

Silvana di Gregorio received her Ph.D. in social policy from the London School of Economics in 1986. She has worked in several applied research settings in the UK. As Director of Graduate Research Training at Cranfield School of Management during the 1990s, she developed her interest in methodological issues relating to CAQDAS. In 1996 she set up SdG Associates focusing on consulting and teaching on a range of packages that support qualitative analysis. She is coauthor with Judith Davidson of *Qualitative Research Design for Software Users* (2008) which addresses both methodological and practical issues related to working with CAQDAS packages. She is currently exploring the use of Web 2.0 tools to support the analysis of qualitative data.

Jennifer Hamilton, Ph.D. is a Senior Study Director at Westat. She has more than 17 years of experience in program evaluation and applied research, and has directed numerous multisite evaluations and research projects involving at-risk children and youth. She currently serves on the Board of Directors of the Eastern Evaluation Research Society. With her educational background in applied statistics, Dr. Hamilton's current research interests focus on evaluation methodology, with a focus on experimental and quasi-experimental designs. She has written and presented on a number of topics including power estimation, missing data imputation, fidelity of implementation, logic models, and randomized designs.

Michael Hannafin earned his Ph.D. in Educational Technology from Arizona State University, and has since held academic positions at the University of Colorado, The Pennsylvania State University, and Florida State University. Currently, he is the Charles H. Wheatley-Georgia Research Alliance Eminent Scholar in Technology-Enhanced Learning and Professor in the Department of Educational Psychology and Instructional Technology at the University of Georgia (UGA) where he directs the Learning and Performance Support Laboratory—an R&D organization that studies the potential for and impact of emerging technologies for teaching and learning. His current research focuses on the study of technology-enhanced teaching and learning environments—especially those that are open and student-centered in nature.

Phillip Harris is executive director of the Association for Educational Communications and Technology. He previously was Director of the Center for Professional Development at Phi Delta Kappa International, the association for professional educators, and was a member of the faculty of Indiana University for 22 years, serving in both the Department of Psychology and the School of Education.

Dr. Jan Herrington is Professor of Education at Murdoch University in Perth. The last 25 years of her professional life have been devoted to the promotion and support of the effective use of educational technologies in learning in schools and universities. Jan's recent research focuses on mobile learning, authentic learning, and the use of authentic tasks as a central focus for e-learning courses. She has published many journal articles, conference papers and chapters, and

several books including a coedited book entitled *Authentic Learning in Higher Education* (with Anthony Herrington) and a coauthored book in 2010 (with Thomas C Reeves and Ron Oliver) *A Guide to Authentic e-Learning*, winner of the Association for Educational Communication and Technology (AECT) Outstanding Book of the Year Award. She was a Fulbright Scholar in 2002 at the University of Georgia, USA, and has won awards for her research including the AECT Young Researcher Award.

Janette Hill earned her Ph.D. in Instructional Systems Design from Florida State University, and has since held academic positions at the University of Northern Colorado and Georgia State University. Currently, she is a faculty member in the Department of Lifelong Education, Administration, and Policy at the University of Georgia (UGA) where she also serves as Department Head. Her current research focuses on the study of emerging/Web-based technologies, community building in virtual environments, resource-based learning, and information/knowledge management systems.

Dr. Ellen S. Hoffman is a Professor and Chair of the Department of Educational Technology in the College of Education at the University of Hawai'i-Mānoa, the state's only research-intensive university located in Honolulu. She teaches graduate and undergraduate courses on campus and online. Courses include research and evaluation methods, foundations of instructional design, advanced doctoral seminars, and emerging technologies for teachers. Her research has focused on research methods in educational technology, technology policy, distance education, digital libraries in schools, information literacy, usability of networked information systems, and systemic change at the K-12 and higher education levels. She has served as an administrator in academic computing, as a consultant for the Michigan Department of Education, and worked as a technology coordinator and computer teacher at a private elementary school. She is an Internet pioneer who worked on the NSFNET project from 1987 to 1995 and served as the Director of User Services, Learning Technologies, Eastern Michigan University, from 1995 to 1998. Her background is in anthropological archaeology and journalism. She earned her undergraduate and master's degrees from the University of Michigan and a doctorate in Educational Leadership from Eastern Michigan University. Her publications include articles in *TechTrends*, *Educational Technology and Media Yearbook*, *School Library Media Research,* and *Computers in the Schools.*

Dr. Hsu is Assistant Professor of Educational Technology at Boise State University. He earned his Ph.D. in Instructional Systems with a doctoral minor in Educational Psychology from the Pennsylvania State University. He also holds two degrees of EdM in TESOL and Education and Technology from SUNY at Buffalo. His research interests include learning and instruction innovation through emerging technologies, cognitive and metacognitive processes of integrating multiple representations in STEM fields, and collaborative learning. He has been selected as one of the mLearning Scholars of Boise State University in both 2011 and 2012 for integrating and studying mobile learning and Web 2.0 technologies in his class. He also teaches graduate courses on research method, graphic design for learning, mobile app design, and emerging trends in Educational Technology.

Dr. Ifenthaler's research interests focus on the learning-dependent progression of mental models, complex problem solving, decision making, situational awareness, game-based learning, and emotions. He developed automated and computer-based methodologies for the assessment and analysis of graphical and natural language representations (SMD Technology, HIMATT, AKOVIA). Additionally, he developed components of course management software and an educational simulation games (DIVOSA, SEsim). He is also interested in the development of educational software and learning management systems (LMS) as well as technology integration into the classroom. Dr. Ifenthaler has published multiple books and book chapters as well as numerous articles in leading journals of the field. Dr. Ifenthaler is the current Fulbright Scholar-In-Residence at the Jeannine Rainbolt College of Education, University of Oklahoma.

Kristi Jackson began using qualitative data analysis software in 1993, became an expert and trainer of one of the leading software packages in 1996, and started her own company using the software and coaching other researchers on the methodological implications of software use in 2002. She spends a third of her time collecting data for evaluation research projects (primarily in education), a third of her time using NVivo to analyze data, and a third of her time consulting with other researchers. From NVivo versions 2 through 8, the sample data that accompanied the software was based on her analysis. Many of her conference presentations and published papers discuss the implications of the growing importance of qualitative data analysis software, and she is recognized as one of the international leaders in this area. Her article on "Blending technology and methodology: A shift toward creative instruction of qualitative methods with NVivo" (*Qualitative Research Journal*, 2003) was one of the first, detailed examinations of how to incorporate software into graduate-level qualitative methods courses. She was a principal organizer of the Technology in Qualitative Methods day at the International Congress on Qualitative Inquiry (May, 2008), and she is frequently invited as a speaker in the area of Qualitative Data Analysis software and qualitative methods. Her current research interests include conceptualizations of "transparency" in the qualitative research process by researchers who use Qualitative Data Analysis software, as well as those who do not.

Lai Jiang is a researcher and coordinator in the Institute of Tropical Medicine, Antwerp. She received her Ph.D. at the University of Leuven. Her research deals with the effects of support in learning environments. A particular point of interest relates to learners' use of scaffolds/tools in computer-based environments. She has an expertise in the analysis of data to look deeply into the students' cognitive operations of different tools/scaffolds. Her research is devoted to gain an in-depth understanding on the comprehensive interactions between learner-related variables and characteristics of learning environments

Dr. David Jonassen is Curators' Professor at the University of Missouri where he teaches in the areas of Learning Technologies and Educational Psychology. Since earning his doctorate in educational media and experimental educational psychology from Temple University, Dr. Jonassen has taught at the University of Missouri, Pennsylvania State University, University of Colorado, the University of Twente in the Netherlands, the University of North Carolina at Greensboro, and Syracuse University. He has published 35 books and hundreds of articles, papers, and reports on text design, task analysis, instructional design, computer-based learning, hypermedia, constructivism, cognitive tools, and problem solving. His current research focuses on the cognitive processes engaged by problem solving and models and methods for supporting those processes during learning, culminating in the book, *Learning to Solve Problems: A Handbook for Designing Problem-Solving Learning Environments*.

Chris Jones is a Reader in the Institute of Educational Technology at the Open University. He authors course materials for the master's programme in Online and Distance Education and coordinates the Technology Enhanced Learning strand of the Doctorate in Education (Ed.D.). His research focuses on the utilization of the metaphor of networks to the understanding of learning in tertiary education. Chris has a longstanding interest in collaborative and cooperative methods for teaching and learning and in the use of the ideas of Communities and Networks of Practice.

Chris was the principal investigator for a UK Research Council funded project "The Net Generation encountering e-learning at university" until March 2010. Chris has published over 70 refereed journal articles, book chapters, and conference papers connected to his research. He is the joint editor of two books in the area of advanced learning technology—*Networked Learning: Perspectives and Issues* published by Springer in 2002 and a second edited collection with Lone Dirckinck-Holmfeld and Berner Lindström (2009) *Analysing Networked Learning Practices in Higher Education and Continuing Professional Development*. Sense Publishers, BV. Chris is on the Steering Committee of the international Networked Learning Conference series and the editorial boards of the *International Journal of Computer-Supported Collaborative Learning*, *Research in Learning Technology* and the *Journal of Flexible and Distance Learning*.

Ton de Jong received his master's in cognitive psychology at the University of Amsterdam and received a Ph.D. in Technological Sciences from the Eindhoven University of Technology on the topic "problem solving and knowledge representation in physics for novice students." Currently he is full professor of Educational Psychology at the University of Twente Faculty of Behavioral Sciences where he is department head for Instructional Technology. He specializes in inquiry learning (mainly in science learning) by technology. He was project manager of the EC projects SERVIVE, KITS, AND CO-LAB in which simulation and gaming was the central didactical approach, and currently is coordinator of the EC SCY project that focuses on learning by design, again in science. He also coordinated several national projects including the ZAP project. In the ZAP project interactive simulations for psychology were developed that are sold worldwide. For ZAP and SimQuest he has won a number of international prizes. Ton de Jong published over 100 journal articles and book chapters and is on the editorial board of six ISI journals. He is associate editor of *Instructional Science* and of the *Journal of Engineering Education*. In 2006 he published a paper in *Science* on inquiry learning with computer simulations.

Nuri Kara is a Ph.D. candidate in the department of Computer Education and Instructional Technology at Middle East Technical University. He also works as a research assistant there. His primary interests are educational robotics, smart toy-based learning, technology-enhanced learning, faculty development, and game-based learning.

Her research interests revolve around the changes brought by digital technologies in society and in the educational system, and their impact on how human beings learn individually and socially. In education, she uses collaborative action research methods as a means to understand and explain how users experience technologies. In noneducational settings, she studies the impact of digital technologies on the social integration of minorities and marginalized populations. In the past few years she has been involved with several charitable organizations to help adults living with intellectual disabilities develop new capabilities through solving ill structured problems and developing a better sense of self-advocacy. She has published articles on technology in education, including how teachers use technologies in their activities, how technologies can be used to learn and how they can be used to design learning individually and in communities of practice.

Turkan Karakus is a Ph.D. and lecturer at the Department of Computer Education and Instructional Technology in Ataturk University. Her main research interest is the training of instructional designers. She is also interested in game-based learning, human computer interaction, online education, and Internet safety for children.

Dr. Trent Kaufman is Cofounder and President of Education Direction, an education reform company that provides data-driven decision-making consulting, training, and coaching to over 500 districts and schools around the country. Trent earned his doctorate from the Harvard Graduate School of Education in Education Policy, Leadership, and Instructional Practice. His research includes district and school use of the Balanced Scorecard and other performance management systems to drive instructional improvement. Trent earned his master's degree in Education Leadership from the University of California at Berkeley, where he also earned his administrative license. Trent is a former middle and high school teacher, department chair, technology coordinator, athletic coach, dean of students, assistant principal, and principal and is now a national faculty member for High School Futures. He has served as a teaching fellow for the Data Wise weeklong summer institute, as well as teaching the year-long Harvard Data Wise course; in addition he has delivered over a dozen invited Data Wise presentations at conferences and events nationwide. Trent is an author of *Collaborative School Improvement: Eight Practices for District-School Partnerships to Transform Teaching and Learning* (2012, Harvard Education Press) and is a contributing author of *Data Wise in Action* (2007, Harvard Education Press).

Kristen Kereluik is a doctoral candidate in educational psychology and educational technology in the College of Education at Michigan State University. Her research focuses on cognitive, contextual, and motivational variation in the use of multimedia tools for teaching and learning.

Liesbeth Kester is Associate Professor for Effective Learning Strategies in the Centre for Learning Sciences and Technologies (CELSTEC) at the Open University of the Netherlands. She is associate editor of the Journal of Computer Assisted Learning, a member of the editorial board of Educational Technology Research and Development and a member of the editorial board of the Dutch Academic Book Guide. Her expertise includes multimedia learning, hypermedia learning, personalized learning, cognitive aspects of learning, including for example, prior knowledge and learning, testing and retention or worked examples and learning, and designing and developing flexible learning environments.

Wendy Kicken is Assistant Professor at the Open University in the Netherlands. Her research and consultancy activities focus mainly on helping students to self-direct their learning by means of a development portfolio and an appropriate guidance model.

ChanMin Kim is Assistant Professor of Educational Psychology and Instructional Technology at the University of Georgia. Her Ph.D. is in Instructional Systems from Florida State University. Dr. Kim's primary interests are in the intersection of cognitive and noncognitive aspects of teaching and learning, especially as they interact with technologies. Her research agenda involves improving learning in domains typically regarded as challenging or difficult. She focuses on facilitating learners' emotion control, motivation, and self-regulation throughout the implementation of a virtual change agent in online learning environments.

Yoon Jeon Kim is a doctoral candidate in the Instructional Systems program at Florida State University. After she received her bachelor's degrees in Educational Technology and Business Administration from the Ewha Womans University in South Korea, she decided to come to FSU to become an educational researcher. She wants to help children, especially children in poverty, to have opportunities to receive better education and live healthy and productive lives. She firmly believes that new educational technologies can open up more learning opportunities in and outside of school. She currently works with her advisor, Dr. Valerie Shute, on various projects developing innovative ways of assessing complex cognitive and noncognitive skills in dynamic learning environments. Particularly, for her dissertation study, she plans to develop an assessment to measure and support creativity. She loves to explore and learn new digital media technologies that can support sociocultural embodied learning. In her educational technology class she teaches for preservice teachers, she tries to model to her students what a technology-savvy teacher acts like by integrating various technologies throughout the semester-long course.

Dr. Kinshuk is NSERC/iCORE/Xerox/Markin Industrial Research Chair for Adaptivity and Personalization in Informatics, Associate Dean of Faculty of Science and Technology, and Full Professor in the School of Computing and Information Systems at Athabasca University, Canada. His work has been dedicated to advancing research on the innovative paradigms, architectures, and implementations of learning systems for individualized and adaptive learning in increasingly global environments. Areas of his research interests include learning technologies, mobile and location aware learning systems, ubiquitous technologies, cognitive profiling, and interactive technologies. With more than 300 research publications in refereed journals, international refereed conferences, and book chapters, he is frequently invited as keynote or principal speaker in international conferences (22 in past 5 years) and visiting professor around the world (16 in the past 5 years in Finland, Germany, Italy, Japan, Taiwan, and Ukraine). He also has a successful record of procuring external funding over 11 million Canadian dollars as principal and coprincipal investigator. He is Founding Chair of IEEE Technical Committee on Learning Technologies, and Founding Editor of the Educational Technology & Society Journal (SSCI indexed with Impact Factor of 1.067 according to Thomson Scientific 2009 Journal Citations Report).

Paul A. Kirschner is professor of Educational Psychology, Program Chair of the Learning and Cognition program and Coordinator of Research at the Centre for Learning Sciences and Technologies (CELSTEC) at the Open University of the Netherlands. He was President of International Society for the Learning Sciences in 2010, is Chief Editor of the Journal of Computer Assisted learning and Associate Editor of Computers in Human Behavior, and coauthor of Ten Steps to Complex Learning. His areas of expertise include computer-supported collaborative learning, designing electronic, and other innovative learning environments, media-use in education, and innovation and the use of information technology educational systems.

James D. Klein is the Walter Dick Distinguished Professor of Instructional Systems Design at Florida State University and Professor Emeritus at Arizona State University. He has authored over 60 refereed journal articles, 3 books, 11 chapters, and numerous conference papers, winning several awards for his scholarship. He has served in a number of leadership positions including Development Editor of Educational Technology Research & Development and as a fellow of the International Board of Standards for Training, Performance and Instruction. He was identified as the third most productive author in Educational Technology, Research & Development from 1989 to 2008. Dr. Klein's research, teaching and consulting activities are in the areas of instructional design, strategies for active learning, and performance improvement. He can be reached at jklein@fsu.edu.

Dr. Joris Klerkx is a post-doctoral research expert at the Computer Science department of the Katholieke Universiteit Leuven in the research group Human-Computer Interaction (HCI). His research interests include user experience design (i.e. information visualization, facetted search, multi-touch, mobile devices), metadata, and flexible access to a global learning infrastructure based on open standards in general. Joris coordinated the research on educational content discovery in the EU eContentPlus project of ASPECT and has been furthermore involved in other EU eContentPlus projects of ICOPER, MACE and MELT. Currently, he's technical coordinator of the ARIADNE foundation and active in the CEN workshop on Learning Technologies.

Gerald A. Knezek, Ph.D.: Professor of Learning Technologies. Dr. Knezek has two decades of experience in teacher training in information technology, and three decades of experience in research design and analysis. He has worked in multivariate data analysis as well as modeling and simulations for much of his career. Dr. Knezek previously served as a member of a research group that examined U.S. Dept. of Education *Preparing Tomorrow's Teachers* (PT3) projects to share data and extract common research findings. He has served as evaluator for several U.S. National Science Foundation projects. He was President of the Society for Information Technology & Teacher Education (SITE) from 2008 to 2011. He was a Fulbright Scholar to Japan in 1993–1994 and held Fulbright Senior Specialist appointments to Ecuador in 2006–2007 and the Netherlands in 2011–2012.

Matthew J. Koehler is an Associate Professor of Educational Technology and Educational Psychology at Michigan State University. His research and teaching focus on understanding the affordances and constraints of new technologies; the design of technology-rich, innovative learning environments; and the professional development of teachers. He has collaborated with Punya Mishra to develop theoretical, pedagogical, and methodological perspectives that characterize teachers who effectively integrate technology, pedagogy, and content knowledge (TPACK). His work has been published in several prominent national and international research journals. Dr. Koehler teaches undergraduate, master's, and doctoral in the College of Education on educational psychology, educational technology, teacher education, and research design.

Anette Kolmos (Ph.D.). Professor in Engineering Education and PBL and Chair holder of the UNESCO Chair in Problem-Based Learning in Engineering Education at Aalborg University.

During the last 20 years Anette Kolmos has conducted research in the following areas: Change to PBL curriculum, development of transferable skills and faculty development. She is actively involved in developing the profile of Engineering Education Research in Europe as well as internationally.

She has been involved in SEFI activities for more than 20 years and she is Past President of SEFI (2009–2011). She is cofounder of IIDEA, a joint initiative of SEFI and IFEES establishing leadership training institute focused on establishing a global network of engineering faculty development programs to disseminate learning about the transformation of engineering education worldwide. Professor Dr. Kolmos is associate editor for European Journal of Engineering Education, SEFI and has served as associate editor for Journal of Engineering Education. She has published more than 170 articles in various journals and she has given more than 50 keynote addresses and invited lectures.

Dr. Kopcha joined the LDT at UGA faculty in January 2010. He received a Ph.D. in Educational Psychology from Arizona State University in 2005. Dr. Kopcha is an educational technologist specializing in the implementation of technology in today's classrooms. Prior to working at the University of Georgia, he spent 5 years as a teacher of mathematics in Connecticut and 3 years at San Diego State University in the Department of Educational Technology. He has written several articles on topics such as learner control over elements of instruction and self-presentation bias in self-report data. His current research focuses on the use of technology to support the elements of cognitive apprenticeship between student and master teachers. He is presently

developing a technology-driven supervision process that supports the student teaching field experience and examining the impact of that process on the knowledge and performance of student teachers. This research is funded in part by the University Grant Program at SDSU.

Dr. Koszalka earned a Master of Science degree in Instructional Technology and a Doctorate in Instructional Systems Design with a minor emphasis in Cultural Anthropology. She is currently a professor in Syracuse University's Instructional Design, Development and Evaluation program. Her research focus is studying the integration of learning, instruction, and technologies in instructional and learning environments.

She has spent considerable time exploring technologies in university-level instruction, specifically for education, medical, and engineering domains. She maintains active collaborations with K-12 educational technology integration efforts both in the US and abroad. She often serves in both evaluation and research roles for instructional projects and consults on instructional design, educational technology integration, and human performance efforts in many contexts.

Dr. Robert Kozma is an independent consultant operating out of San Francisco, California, and an Emeritus Director and Principal Scientist at the Center for Technology in Learning at SRI International in Menlo Park, California. For 20 years prior to his position at SRI, he was a professor and research scientist at the University of Michigan. His research expertise includes technology policy in support of education reform and economic and social development, technology assessment and evaluation in education reform, media theory, the impact of technology on cognition, and the application of technology to improve teaching and learning. He has consulted with the Ministries of Education in Egypt, Thailand, Jordan, India, Singapore, Norway, and Chile and with Intel Corporation, Cisco, Microsoft, the World Bank, OECD, UNESCO, and the Ford Foundation on the use of technology to improve educational systems. He provided pro-bono consulting for the Millennium Villages Project on the role that ICT can play in supporting poverty reduction and development in Africa. In all, he has directed or codirected more than 25 research and development projects, authored or coauthored more than 75 academic articles, chapters, encyclopedia entries, and books, and given more than 100 presentations and invited addresses at national and international conferences. He began his career as a primary mathematics teacher in the inner city of Detroit, Michigan.

Susan Land earned her doctorate from The Florida State University and is an Associate Professor in the Instructional Systems Program at The Pennsylvania State University. Her research emphasizes frameworks for the design of open-ended, technology-rich learning environments. She studies learning environments and design connected to everyday contexts, social networking, and student-created design projects.

Ard Lazonder is associate professor of instructional technology. He specializes in simulation-based inquiry learning, and has a warm interest in underlying disciplines such as developmental psychology, cognitive psychology, and software engineering. Ard Lazonder has a broad experience in international research projects on knowledge acquisition through student-directed learning, and has documented his empirical and theoretical contributions to the field in more than 50 journal articles and book chapters.

Eunbae Lee is a doctoral student in the Learning, Design, and Technology program at the University of Georgia. She worked previously as an instructional designer creating online student-centered undergraduate and graduate courses at institutions of higher education. Her research interest revolves around promoting student-centered learning in higher education.

Jennifer Lee is a doctoral candidate in the Department of Learning Technologies at the University of North Texas. Her research interests include media multitasking, distributed learning, new media and technologies, and the scholarship of teaching and learning.

Dr. Jing Lei is an Associate Professor in the Instructional Design, Development and Evaluation in the School of Education at Syracuse University. Dr. Lei's scholarship focuses on how information and communication technology can help prepare a new generation of citizens for a globalizing and digitizing world. Her research papers appear in such journals as *Teachers College Record, Journal of Educational Computing Research, British Journal of Educational Technology, Journal of Computing in Teacher Education,* and *Computers and Education*. Her recent publications include *The Digital Pencil: One-to-One Computing for Children* (2008) and *The Handbook of Asian Education: A Cultural Perspective (2009)*. Her research has been featured in influential media including *USA Today, US News and World Report,* and *Education Week*.

Hod Lipson is an associate professor at Cornell University and associate director of the Department of Mechanical and Aerospace Engineering. Lipson is lead principal investigator on federally funded projects that include an NSF award for fault tolerant systems, NSF CDI program on Cyber-driven discovery and Innovation, and a DARPA funded project on programmable matter. Lipson is a recipient of a number of awards, including eight best paper awards, NSF Career award, and DARPA Young Faculty Award.

Dr. Barbara Lockee is Professor of Instructional Design and Technology at Virginia Tech., USA, where she is also Associate Director of the School of Education, managing the Office of Educational Research and Outreach. She teaches courses in instructional design, message design, and distance education. Her research interests focus on instructional

design issues related to technology-mediated learning. She has published more than 80 papers in academic journals, conferences and books, and has presented her scholarly work at over 100 national and international conferences. Dr. Lockee is Immediate Past President of the Association for Educational Communications and Technology, an international professional organization for educational technology researchers and practitioners. She earned her Ph.D. in 1996 from Virginia Tech in Curriculum and Instruction (Instructional Technology), M.A. in 1991 from Appalachian State University in Curriculum and Instruction (Educational Media), and B.A. in 1986 from Appalachian State University in Communication Arts.

Joost Lowyck, is Professor Emeritus at Leuven University, Belgium. He was Full Professor in Educational technology, Instructional design and Corporate Training design from 1979 until 2006. He was successively director of the Centre for Educational technology (EDUCATEC), and after a merge with the Centre of Educational psychology, codirector of the Center for Instructional Psychology and Technology (CIP & T). In the 1990s he has been involved in several NATO Advanced research workshops. He was project coordinator and partner in several European research projects on educational technology, like CL-Net, ParlEuNet, Flex, SPOT, E-xcellence+, and OER-HE. He has been Associate Editor of the *British Journal of Educational Psychology* and member of the International Advisory Board *Learning and Instruction*. Publications are in the domain of instructional design and educational technology with a focus on student's perspectives on learning environments.

Thomas F. Luschei is an associate professor in Claremont Graduate University's School of Educational Studies. He earned an M.A. in economics and a Ph.D. in international comparative education from Stanford University and a Master of Public Affairs from the University of Texas at Austin. He came to CGU in 2010 from Florida State University, where he held joint appointments in the College of Education and the Learning Systems Institute. Luschei's research areas include international and comparative education, the economics of education, teacher labor markets and teacher quality, and distance education of teachers in developing countries. The primary focus of his research is the impact and availability of educational resources—particularly high-quality teachers—in developing areas. Luschei's recent publications have appeared in the *American Educational Research Journal*, the *Asia Pacific Journal of Education,* the *Comparative Education Review, Distance Education,* the *International Journal of Educational Development*, *Prospects,* and *Teachers College Record*.

Griet Lust is a Ph.D. student at the University of Leuven at the Center of Instructional Psychology and Technology. Her main research interest is on the use of tools in blended learning environment with a high interest towards ecological settings and the influence of students self-regulation skills with respect to tool use.

Dr. Meghan Manfra is an assistant professor of social studies education at North Carolina State University. Her research focuses on digital history, technology integration, and action research for the professional development of teachers. She is a former high school history teacher and holds a doctorate in education and a master's degree in history. She is the coeditor of the technology section of *Social Education* and is the chair of the Social Studies Research SIG of the American Educational Research Association. She currently serves on the Executive Board of the College and University Faculty Assembly of the National Council for the Social Studies. She has contributed to *Theory and Research in Social Education*, the *Journal of Research on Technology in Education*, *Social Studies Research and Practice*, the *Journal of Curriculum and Instruction*, *Contemporary Issues in Technology and Teacher Education*, and *Social Education.*

Dr. Marcia A. Mardis is an Assistant Professor of Information Science at the College of Communication & Information at the Florida State University. She teaches graduate courses online and on campus including collection development and doctoral seminars. Her research focuses on research methods in school librarianship and information science, digital libraries in K-12 schools, large-scale distributed collaboration, and home and school broadband connectivity. She has worked as a school librarian, school administrator, and classroom teacher. Dr. Mardis who also directed one of the nation's first digital libraries for educators, Michigan Teacher Network, from 1998 to 2008, edited a 2003 book *Developing Digital Libraries for K-12 Education* (available through AECT), and played a leadership role in the NSF National Science Digital Library from 2000 to 2012. With a background in history and classical studies, she earned her undergraduate and graduate degrees from the University of Michigan and a doctorate in Educational Leadership from Eastern Michigan University. Her publications include articles in the *Journal of the Association of Information Science & Technology* (JASIST), *Journal of Education in Library and Information Science* (JELIS), *Library Trends*, *Educational Media and Technology Yearbook* (EMTY), *School Libraries Worldwide*, and *School Library Research.*

Richard E. Mayer is Professor of Psychology at the University of California, Santa Barbara. His research interests are in applying the science of learning to education, with a focus on multimedia learning. He served as President of Division 15 (Educational Psychology) of the American Psychological Association and Vice President of the American Educational Research Association for Division C (Learning and Instruction). He is the winner of the Thorndike Award for career achievement in educational psychology, the

Scribner Award for career research in learning and instruction, the Distinguished Contribution of Applications of Psychology to Education and Training Award, and is ranked #1 as the most productive educational psychologist in the world in Contemporary Educational Psychology. He serves on the editorial boards of 12 journals mainly in educational psychology. He is the author of more than 400 publications including 25 books, such as *Applying the Science of Learning*, *e-Learning and the Science of Instruction* (with R. Clark), *Multimedia Learning*, *Learning and Instruction*, *Handbook of Research on Learning and Instruction* (coeditor with P. Alexander) and the *Cambridge Handbook of Multimedia Learning* (editor).

Mary McEwen is a Ph.D. student in the Instructional Psychology and Technology program at Brigham Young University, where she also works with the Open Education Group.

Dr. McKenney is Associate Professor in the Centre for Learning Sciences and Technologies at the Open University and also within the Education Department of the Faculty of Behavioral Sciences at the University of Twente. Her research focuses on understanding and supporting the interplay between curriculum development and teacher professional development. In various settings, she has extensively studied the supportive role of technology in curriculum development. Dr. McKenney is committed to exploring how educational research can serve the development of scientific understanding while also creating sustainable solutions to real problems in educational practice. Since educational design research lends itself to these dual aims, she also works on developing and explicating ways to conduct this exciting form of inquiry. In addition to authoring numerous journal articles, she coedited the book, *Educational Design Research* in 2006 and, together with Tom Reeves, wrote the book, *Conducting Educational Design Research* in 2012. Dr. McKenney and is current editor of *Educational Designer*, the journal of the International Society for Design and Development in Education. Dr. McKenney has received multiple merit-based scholarships from both the University of Twente and the Dutch Science Foundation (NWO), as well as from other organizations. Professional organizations in which she is active include: AERA, EARLI, ICO, ISDDE, ISLS and VOR. Dr. McKenney has taught preschool and middle school, as well as bachelor, master and doctorate courses. In addition to regular conference participation around the globe, she has given invited speeches in Belgium, China, India, Italy, the Netherlands, South Africa, and the USA.

Jeroen van Merriënboer is full professor of Learning and Instruction at Maastricht University, the Netherlands, where he is heading the research program of the Graduate School of Health Professions Education (SHE). He holds a master's degree in experimental psychology from the VU University of Amsterdam and a Ph.D. degree in instructional technology from the University of Twente. Van Merriënboer specializes in cognitive architecture and instruction, instructional design for complex learning, holistic approaches to instructional design, and adaptive e-learning applications. His prize-winning monograph *Training Complex Cognitive Skills* (1997) describes his four-component instructional design model (4C/ID) and his book *Ten Steps to Complex Learning* (2012) offers a systematic, research-based approach to designing environments for complex learning. He published over 150 articles and is associate editor of the journal *Learning and Instruction*. He is a fellow of the AERA, was declared world leader in educational technology by *Training Magazine*, and received the international contributions award from the AECT.

Dr. Punya Mishra is Professor of Educational Psychology and Educational Technology at Michigan State University where he directs the Master of Arts in Educational Technology program. He has also served as the chair of the Innovation & Technology Committee of the American Association of Colleges of Teacher Education (AACTE). He is nationally and internationally recognized for his work on the theoretical, cognitive, and social aspects related to the design and use of computer-based learning environments. He has worked extensively in the area of technology integration in teacher education, which led to the development (in collaboration with Dr. M. J. Koehler) of the Technological Pedagogical Content Knowledge (TPACK) framework, which has been described as being "the most significant advancement in the area of technology integration in the past 25 years." His current research focuses on techniques for enhancing teacher creativity and trans-disciplinary learning using technology. He has received over $4 million in grants, has published over 45 articles and book chapters and has edited two books. Dr. Mishra is an award winning instructor who teaches courses at both the master's and doctoral levels in the areas of educational technology, design, and creativity. Dr. Mishra is the recipient of multiple awards, including a Lilly Faculty Fellowship (2001), the MSU Teacher Scholar Award (2004), the College of Education's Teaching Excellence Award (2006), and the AT&T-MSU award for Instructional Technology (2008). You can find out more about him by going to http://punyamishra.com/

A/Prof Elizabeth Molloy is Director of the HealthPEER team in the Faculty of Medicine, Nursing and Health Sciences at Monash University. Elizabeth coordinates the Masters in Health Professional Education, provides curricular consultation and professional development workshops and has published research on feedback in clinical education, professional transitions, and the role of practitioners and university-based educators in facilitating active student learning. In 2009 she coedited a book with Elsevier entitled "Clinical education in the health professions" targeting a multi professional audi-

ence. She is Deputy Editor for the journal *Medical Education*. She has a clinical background as a physiotherapist and worked as Team Physiotherapist for the Australian Athletics Team for 7 years.

Stephanie Moore, Ph.D. is in the Department of Engineering & Society in the School of Engineering and Applied Science at the University of Virginia and is Director of Engineering Instructional Design. She is also affiliated with the Department of Instructional Technology in the Curry School of Education at UVA. She teaches classes on assistive technology and universal design; legal and ethical issues for educational technology; and engineering, society, and contemporary issues including an online, transnational class in partnership with Technische Universitat, Dortmund, Germany that focuses on cultural competency and global perspectives. Stephanie's research and publications focus in applied ethics for technology professionals, cultural and global competencies, accessibility and universal design, and systemic planning and evaluation. Her book *Ethics by Design* is focused on strategic planning for desirable societal impact. She has done award-winning in online education for over 15 years designed for different learner populations including learners with disabilities, under-represented populations in STEM, and statewide teacher professional development. Prior to her work at UVA, she has worked for the Colorado Department of Education as Assessment Coordinator for K-3 literacy in low-income areas, and she has worked for the National Center on Low-Incidence Disabilities at the University of Northern Colorado.

Professor Morgan's expertise in research, administration, and teaching is based on over three decades of successful experience in the higher education systems of North America, Europe, Pacific and the Middle East. He has edited numerous peer-reviewed books, papers, encyclopedia entries, and articles in the areas of human computer interaction, psychology, and human factors. His research interests have focused on understanding the human and social impact of information and communications technology (ICT). He has been principal scientist on a number of externally funded projects (>3 million Euros in personal grants) and has led successful fund raising initiatives for academic and charitable organizations. His scientific work includes a number of original contributions: The first empirical evaluations and explanations of why direct manipulation and graphical user interfaces are superior in usability terms; some of the first explanations of gender differences and attitudes in ICT use; revealing the role of personality types in computer-based behavior; and finally, the influence of early parental encouragement in later technology competence and attitudes.

Gary R. Morrison received his doctorate in Instructional Systems Technology from Indiana University and is a professor and graduate program director in the instructional design and technology program at Old Dominion University. His research focuses on cognitive load theory, instructional strategies, K-12 technology integration, and distance education. He is author of two books: Morrison, Ross, and Kemp's *Designing Effective Instruction* (5th Edition) and Morrison and Lowther's *Integrating Computer Technology into the Classroom* (3rd Edition). He has written over 25 book chapters and over 40 articles on instructional design and educational technology. Gary is the editor of the *Journal of Computing in Higher Education* and is on the editorial boards of *Computers in Human Behavior, Quarterly Review of Distance Education,* and Libraries Unlimited's *Instructional Technology Serie*s. He has worked as instructional designer for three Fortune 500 companies and the University of Mid-America. Two of the distance education courses he designed were accepted for broadcast on PBS and NPR. Gary is a past president of Association for Educational Communication and Technology's (AECT) Research and Theory Division and Design, Development Division, and Distance Learning Division. His research focuses on cognitive load theory, instructional strategies, K-12 technology integration, and distance education. Gary is a past president of Association for Educational Communication and Technology's (AECT) Research and Theory Division and Design and Development Division, and is the current president of the Distance Learning Division.

Anjum Najmi is a Teaching Fellow in the Learning Technologies Department at the University of North Texas. She is working on her Ph.D. in Educational Computing through the College of Information, Library Science and Technologies. Her research interests are emerging technologies, games and simulations, and the scholarship of teaching and learning.

Bahadir Namdar is a doctoral student in the Department of Mathematics and Science Education at the University of Georgia. His research focuses on modeling-based instruction, socio-scientific argumentation in technology-enhanced science classrooms and online discussion settings.

Eunjung Oh is an assistant professor in the Foundations, Secondary Education, and Educational Technology Department at the Georgia College and State University. She has diverse professional experiences in K-12, higher education, and corporate training as a Human Resources Development (HRD) specialist, trainer, instructional designer, multimedia developer, instructor, and consultant in both Korea and the United States. Her interests include (1) design of online and blended learning environments to enhance students' learning experiences (e.g., collaborative group work, authentic learning tasks, critical thinking, and reflective practice); (2) educational design research methods; and (3) digital generation learners.

Martin Oliver is Reader in ICT in Education at the London Knowledge Lab, a collaboration between the Institute of Education and Birkbeck College, University of

London. His research focuses on the use of technology in Higher Education, he teaches on the MA in ICT in Education and is head of the Learning Technologies Unit. Martin edits the journal, *Learning, Media and Technology,* and serves on the editorial boards of *Research in Learning Technology*; *Innovations in Education and Teaching International*; *Research and Practice in Technology Enhanced Learning*; and *the Journal of Open, Flexible and Distance Learning*. He is currently vice-chair of the Association for Learning Technology (www.alt.ac.uk)

Ron Oliver is Pro-Vice-Chancellor (Teaching and Learning) at Edith Cowan University in Western Australia. Throughout his university career he has researched and published widely in the areas of authentic learning, task-based learning, and the sharing and reuse of technology-facilitated learning activities. He is an active member of the editorial boards of several international elearning journals and conference committees and is regularly invited to share his ideas and work at national and international conferences.

Awards and recognition he has received for his innovative teaching and research with learning technologies include an Australian Award for University Teaching (1997), an Australian Learning and Teaching Council Fellowship (2006), a Fellowship from the Association for the Advancement for Computer in Education (2007) and a Fellowship from of the Australasian Society for Computers in Learning in Tertiary Education (2009).

Fred Paas works as a full professor of educational psychology at Erasmus University Rotterdam in the Netherlands, as professorial fellow at the University of Wollongong in Australia, and as adjunct professor at the university of New-South Wales, Sydney, Australia. His main research interest is in instructional control of cognitive load in lifelong learning of complex tasks. His six most influential publications have been cited over 4,000 times, including "Cognitive Load Theory and Instructional Design" (Educational Psychologist, 2003), "Cognitive Load Measurement as a Means to Advance Cognitive Load Theory" (Educational Psychologist, 2003), "Cognitive Architecture and Instructional Design" (Educational Psychology Review, 1998), "Variability of Worked Examples and Transfer of Geometrical Problem-Solving Skill" (Journal of Educational Psychology, 1994), "The Efficiency of Instructional Conditions" (Human Factors, 1993), "Training Strategies for Attaining Transfer of Problem-Solving Skill in Statistics" (Journal of Educational Psychology, 1992).

Gilbert Paquette holds a Ph.D. from the Université du Maine (France) in Artificial Intelligence and Education. Researcher at the LICEF research center he has founded in 1992, he holds a Canada Research Chair in Instructional and Cognitive Engineering (CICE), has acted as the Scientific Director of the LORNET Canadian research network (2004–2009) and is a full professor at Télé-université du Québec in Montreal since 1986. In 2007, he received an Honoris Causa Doctorate from the University Pierre et Marie Curie (Paris VI) for pioneering strategic projects in the field of knowledge-based systems, instructional Design and distance education, and also for his political involvement as Minister for Science and Technology in the Quebec Government. Recent publications include four books on Instructional Design and Knowledge Modeling. He has given invited conferences in many parts of the world and sits on the advisory committee for six Journals, three in France, one in the US, and two in Canada. He represents Canada on the Globe consortium for learning objects repositories. He has also participated in advisory committees for two European networks: TENCompetence and Share-TEC.

Reinhard Pekrun received his Dipl.-Psych. (M.Sc.) from the Technical University of Braunschweig and is Dr. Phil. (Ph.D.) from the University of Munich, Germany. Currently, he is holding the chair of Personality and Educational Psychology at the University of Munich. His research focuses on achievement emotion and motivation, the development of educational assessment, and the evaluation of classroom instruction and educational systems. He is one of the originators of current research on emotion in education and the developer of the Control-Value Theory of Achievement Emotions (Pekrun, 2006). Pekrun has authored and coauthored 19 monographs and edited volumes, including the recent state-of-the art volume *Emotion in Education* (San Diego 2007), and more than 180 journal articles and chapters, including numerous papers in leading journals such as *Journal of Educational Psychology*, *Contemporary Educational Psychology*, *Learning and Instruction*, *Psychological Science*, *Emotion,* and *Cognition and Emotion*. He is a Fellow of the International Academy of Education and Past-president of the Stress and Anxiety Research Society. Pekrun was senior editor of *Anxiety, Stress and Coping* as well as the *German Journal of Developmental and Educational Psychology*, and is currently a member of the editorial boards of *Journal of Educational Psychology, Contemporary Educational Psychology*, *Educational Psychologist*, *Educational Research Review*, and *Metacognition and Learning.* He served as Dean of the Faculty for Psychology and Education and Founding Director of the Center for Higher Education Research and Development at the University of Regensburg, and as Vice-President for Research at the University of Munich. Pekrun is active in policy development and implementation in education, including active roles in international student assessments such as the OECD's Programme for International Student Assessment (PISA), and serves on a number of committees on school reform.

Anthony G. Picciano is a professor and executive officer in the Ph.D. Program in Urban Education at the Graduate Center of the City University of New York. He is also a

member of the faculty in the Graduate Program in Education Leadership at Hunter College, the Doctoral Certificate Program in Interactive Pedagogy and Technology at the City University of New York Graduate Center, and the CUNY Online BA Program in Communication and Culture. He has extensive experience in education administration and teaching, and has been involved in a number of major grants from the U.S. Department of Education, the National Science Foundation, IBM, and the Alfred P. Sloan Foundation. In 1998, Dr. Picciano cofounded CUNY Online, a multimillion dollar initiative funded by the Alfred P. Sloan Foundation that provides support services to faculty using the Internet for course development. He was a founding member and continues to serve on the Board of Directors of the Sloan Consortium.

Dr. Picciano's major research interests are school leadership, education policy, Internet-based teaching and learning, and multimedia instructional models. He has authored numerous articles and nine books including *Data-Driven Decision Making for Effective School Leadership* (2006, Pearson), *Educational Leadership and Planning for Technology*, 5th Edition (2010, Pearson), Blended Learning: Research Perspectives (2007, The Sloan Consortium), *Distance Learning: Making Connections across Virtual Space and Time* (2001, Pearson), and *Educational Research Primer* (2004, Continuum). He has also conducted three major national studies (2007, 2009, 2010) with Jeff Seaman on the extent and nature of online and blended learning in American K-12 school districts. In 2010, Dr. Picciano received the Sloan Consortium's Award for Outstanding Achievement in Online Education by an Individual.

Pablo Pirnay-Dummer is Assistant Professor at the Department of Educational Science at the Albert-Ludwigs-University of Freiburg, Germany. His research and publications are located in the area of language, cognition, learning, expertise, and technology where his practical focus is on model-based knowledge management and organizational learning.

Dr. Ponder, an Associate Professor in the Department of Elementary and Bilingual Education at California State University, Fullerton, specializes in social studies education. Her degree is in Curriculum Studies from Indiana University. Her teaching and research interests include education for democratic citizenship, experiential learning, and infusing the arts into the curriculum. Prior to earning her Ph.D., she taught elementary school for 5 years.

Aaron Popham is an administrator in the Office of the Dean in the David O. McKay School of Education at Brigham Young University with responsibilities in the areas of data and data systems, accreditation, assessment, technology integration and support, grants and research, and human subjects compliance. In addition to his full-time administrative responsibilities, Aaron is completing doctoral studies in the Department of Instructional Psychology and Technology at Brigham Young University with an emphasis in measurement and assessment. His research interests include the impact of accreditation on the culture, practices, and curriculum in teacher and leadership preparation programs; data-driven decision making and data systems; and the reliability and validity of teacher preparation assessments. Aaron has presented and published in the areas of technology integration, data system development, assessment development, and evidence-based practice. Aaron is presently coordinating a project in the McKay School of Education to design and build a comprehensive data and assessment system to foster a culture of data-driven decision making.

Jennifer Reece-Barnes is a doctoral student at Syracuse University in the Instructional Design, Development and Evaluation department. Jennifer received a B.A. in psychology from Le Moyne College and a M.S. in Cultural Foundations of Education from Syracuse University. Her research interests include disaster response evaluation and programming. Ms. Reece-Barnes is also a member of the American Evaluation Association.

Professor Emeritus Thomas C. Reeves taught in the Learning, Design, and Technology (formerly Instructional Technology) program for nearly 30 years. He continues to work as a consultant and he is a frequent invited speaker around the globe. He designed, developed and evaluated numerous interactive learning programs for education and training. He is a past president of the Association for the Development of Computer-based Instructional Systems (ADCIS) and a former Fulbright Lecturer. From 1997 to 2000, he was the editor of the *Journal of Interactive Learning Research*. He served as a member of the Scientific Panel on Interactive Consumer Health Information for the U.S. Department of Health and Human Services and the National Visiting Committee for the National Science Digital Library. In 2003, he was the first person to receive the AACE Fellowship Award from the Association for the Advancement of Computing in Education. His *Interactive Learning Systems Evaluation* book (with John Hedberg) was published in 2003; his *A Guide to Authentic E-Learning* book (with Jan Herrington and Ron Oliver) was published in 2010; and his *Conducting Educational Design Research* book (with Susan McKenney) was published in 2012. In 2010, Reeves was made a Fellow of the Australasian Society for Computers in Learning in Tertiary Education (ASCILITE). His current research interests include: (1) evaluation of educational technology, (2) authentic learning tasks, (3) socially responsible research in education, (4) educational design research, and (5) applications of instructional technology in developing countries.

Youqun Ren is a Vice President of East China Normal University (ECNU), Shanghai China. He received his bachelor's degree in computer science, his master's degree in

higher education, and his Ph.D. in curriculum and instruction in ECNU. He is a Professor of Educational Technology and Codirector of the Learning Science Research Center at ECNU. Professor Ren's research focuses on educational technology, instructional design, curriculum and instruction, and teacher education. He has published dozens of papers and several books, and is leading the team of experts translating the third edition of *Handbook of Research on Educational Communications and Technology* into Chinese. Professor Ren serves as the principal investigator for several projects sponsored by the Chinese Education Ministry; he has been awarded grants from the Program for New Century Excellent Talents in University (NCET). He serves as the Director of UNESCO APEID Associated Center at ECNU, and he collaborates extensively with the UNESCO community.

Dr. Peter Rich is an Assistant Professor in Instructional Psychology and Technology at Brigham Young University, where he teaches courses in educational psychology, qualitative research methods, distance education, instructional design, and e-learning (online and mobile) development. His research focuses heavily on the cognitive aspects of learning and on the use of video self-analysis to improve teaching and learning. Dr. Rich has organized video-analysis researchers from over a dozen different universities and across several countries to synthesize knowledge of how video is best used to aid in teacher self-evaluations. Through these associations, he seeks to advance understanding and use of video annotation software in educational situations.

Rita C. Richey is Professor Emeritus of Instructional Technology at Wayne State University. She was at Wayne State for 37 years and has extensive experience in program design and development, teaching and in education, and training research. She is widely published in the area of instructional design and technology. She has written or edited 11 books, and published over 40 articles and books chapters. She has two Outstanding Book Awards from the Association of Educational Communication and Technology (AECT) Division of Design and Development and also two AECT Brown Publication Awards. While at Wayne State University, she coordinated the Instructional Technology program for over 20 years and received five major University awards, including induction into the Academy of Scholars. In recognition of her career's work, in 2000 she received the AECT Distinguished Service Award. She can be reached at rrichey@wayne.edu.

Jochen Rick's research interests lie at the intersection of learning, collaboration, and new media. He creates innovative and effective educational technologies and researches their value in authentic contexts. With a M.S. in Electrical Engineering and Ph.D. in Computer Science, he feels comfortable developing for new technologies. As a learning scientist, he recognizes the potential these technologies have to support constructivist learning. In particular, he values exploratory, design-based, and inquiry-based collaborative learning. His current focus is on supporting colocated collaborative learning with interactive surfaces. He is the founder of *surfacelearning.org*, an interactive interdisciplinary resource for research on interactive surfaces and learning.

In 2010, he joined the Department of Educational Technology, Saarland University as a research fellow/instructor, contributing a computer science perspective to an interdisciplinary department. Before that, he spent 3 years as a postdoc at the Open University working with Yvonne Rogers on supporting colocated collaboration with shareable interfaces. In 2007, he received a Ph.D. in Computer Science (area of Learning Sciences and Technology) from the Georgia Institute of Technology; his dissertation research, supervised by Mark Guzdial, investigated the role that personal home pages play in academia. His work on CoWeb (Collaborative Websites) was the first research on using wikis to support learning in university classes.

Steven M. Ross received his doctorate in educational psychology from Pennsylvania State University. He is currently a senior research scientist and professor at the Center for Research and Reform in Education at Johns Hopkins University. Dr. Ross is the author of 6 textbooks and over 125 journal articles in the areas of educational technology, at-risk learners, educational reform, extended learning time programs, and research and evaluation. He is a noted lecturer on school programs and educational evaluation, Editor Emeritus of the research section of the *Educational Technology Research and Development* journal, and a member of the editorial board for four other professional journals. In 1993, he was the first faculty recipient of The University of Memphis Eminent Faculty Award for teaching, research and service, and recently held the Lillian and Morrie Moss Chair of Excellence in Urban Education and a Faudree Professorship at The University of Memphis. He has testified on school restructuring research before the U.S. House of Representatives Subcommittee on Early Childhood, Youth, and Families, has been a consultant to the National Science Foundation on project evaluation design, and is a technical advisor and researcher on current federal and state initiatives regarding the evaluation of out-of-school learning, technology usage, evaluation of principals, and supplemental educational services. Current projects include the evaluation of a school-wide social-emotional learning program ("Together 4 All") in N. Ireland, a city-wide turnaround initiative in Syracuse, NY, and after-school mentoring and experiential learning programs for children and adolescents in multiple states.

Gregory Russell is a Ph.D. student in the Learning Technologies program at the University of Texas at Austin. Previously, he earned an M.A. in Education from Pepperdine University (CA) and a B.A. in Economics from Wake Forest

University (NC). Before attending UT, Greg was a middle school teacher at an urban charter school in downtown Los Angeles, and a teacher-mentor, school coordinator, and associate board member for Los Angeles Team Mentoring. His current professional interests include instructional design, tablet computing, technology integration into K-12 schools, and diversity in public education.

Dr. Wilhelmina (Willi) Savenye is a Professor and Ph.D. Program Leader in Educational Technology at Arizona State University. She has also served on the education faculty at The University of Texas at Austin and San Diego State University, and been an adjunct faculty member of Instructional Design and Distance Education at Nova Southeastern University. She began her career in instructional media, serving on the staff of what is now Seattle Pacific University, as well as North Seattle and Bellevue Community Colleges, and the Bellevue (WA) School District. For the past 10 years, she has also had the pleasure of working with Texas State University, San Marcos, Instructional Technology staff in leading Technology Integration Summer Workshops for faculty.

Dr. Savenye has published over 70 articles, chapters, and monographs related to instructional design and evaluation of technology-based learning systems. She is the Associate Editor of the new Journal of Applied Instructional Development, serves on several editorial boards, serves as a manuscript reviewer for several additional journals, and has served as guest editor for several special issues of educational technology journals. She has held several elected conference leadership positions. She has also made over 140 presentations at international, national and regional conferences and workshops. She has been awarded numerous federal and foundation grants in these areas. She has designed and produced numerous digital media products and programs.

Her research and teaching focus on instructional design, assessment, and evaluation for online, eLearning, and technology-based learning systems in schools, museums, universities, and corporations.

Dr. Savoy is currently a Math Field Service Specialist with Pearson/School Achievement Services. Prior to joining Pearson/America's Choice, he led many school improvement efforts as the Director of Policy and Research at DCVOICE, a nonprofit community advocacy organization. He began is educational career as a high school math and physics teacher and school improvement chair. Dr. Savoy is coauthor of several publications on the subject of user-design.

Dr. Norbert M. Seel is distinguished professor of education especially in the field of research on learning and instructional design. He is also the chair of the Department of Educational Science at the Albert-Ludwigs-University at Freiburg, Germany.

His research interests include model-based learning and thinking, inductive reasoning, and complex problem solving, the investigation of exploratory learning within technology-enhanced environments, and processes of decision making in instructional design.

Dr. Seel has published 18 books, among them the textbook "Psychology of Learning" (2nd ed.), as well as more than 150 refereed journal articles and book chapters in the area of education and cognitive psychology. He is associate-editor of several journals, such as *Frontiers of Cognitive Science* and *Technology, Instruction, Cognition and Learning*. He is also the editor-in-chief of the Encyclopedia of the Sciences of Learning.

Dr. Shen is currently Assistant Professor in the Department of Mathematics and Science Education at the University of Georgia. His scholarly work focuses on developing a comprehensive instructional theory based on transformative modeling, designing and implementing innovative technology-enhanced science modules at the middle and high school levels, fostering interdisciplinary science learning at the college level, and constructing diagnostic assessments in science at all levels.

Tae Seob Shin is currently an Assistant Professor in the Department of Education at Hanyang University, Seoul, South Korea (HYU). He received his Ph.D. in Educational Psychology and Educational Technology from Michigan State University (MSU). He holds an M.A. in Educational Psychology and a B.A. in Education from Seoul National University (SNU). Dr. Shin's research interests include motivating students to learn, developing pre- and in-service teachers' technological pedagogical content knowledge, and understanding motivational aspects of online learning environments. His research has been presented at various international conferences including American Educational Researcher Association (AERA), American Psychological Association (APA), and Society for Information Technology and Teacher Education (SITE). He has coauthored two book chapters and published several articles in peer-reviewed journals. A recipient of the 2009 APA Dissertation Research Award (Dissertation Title: Effects of Providing Rationales for Learning a Lesson on Students' Motivation and Learning in Online Learning Environments), Dr. Shin also received the Korean Honor Scholarship from the Korean Consulate General in Chicago. He was also the recipient of Robert Craig Fellowship in Psychological Studies in Education at MSU, where he completed his Ph.D. under the guidance of W. Patrick Dickson. Other honors and awards include the 2009 SITE International Conference Outstanding Paper Award, MSU AT&T Faculty-Staff Awards in Instructional Technology, and Cum Laude Honors at SNU.

Valerie Shute is a Professor at Florida State University. Before coming to FSU in 2007, she was a principal research scientist at Educational Testing Service (2001–2007) where she was involved with basic and applied research projects related to assessment, cognitive diagnosis, and learning from

advanced instructional systems and where she generally honed her psychometric skills. Prior to ETS, Val worked in industry for 2 years, and before that, she was enthusiastically employed at the Air Force Research Lab in San Antonio, Texas (1986–1999). She earned a Ph.D. in cognitive/educational psychology from the University of California, Santa Barbara (1984), and held a 2-year postdoctoral fellowship at the Learning Research and Development Center. Her general research interests hover around the design, development, and evaluation of advanced systems to support learning—particularly related to twenty-first century competencies. Towards this end, she's been involved in (a) exploratory and confirmatory tests of aptitude-treatment interactions using the controlled environments offered by intelligent tutoring systems, (b) student modeling research using evidence-centered design, and (c) developing automated knowledge elicitation and organization tools. An example of current research involves using immersive games with stealth assessment to support learning—of cognitive and noncognitive knowledge and skills. Another example of current research involves externalizing mental models and assessing understanding of complex phenomena. Towards that end, she and her colleagues are developing a suite of model-based tools that are used to assess understanding and provide the basis for informative and reflective feedback during instruction.

Kennon Smith is an assistant professor in the Indiana University Interior Design Studies group. Her research interests include design pedagogy and comparative design. She teaches courses on design principles and sustainable design, as well as conducting design studios.

J. Michael Spector is Professor and Chair of the Department of Learning Technologies at the University of North Texas. Previously, he was Professor Educational Psychology and Instructional Technology and Graduate Program Coordinator for Learning, Design, and Technology at the University of Geogia (2009–2012), and prior to that he was the Associate Director of the Learning Systems Institute and Professor of Instructional Systemsat Florida State University (2004–2008). He was Chair of Instructional Design, Development and Evaluation at Syracuse University (2000–2004) and Director of the Educational Information Science and Technology Research Program at the University of Bergen (1996–1999). He is a distinguished graduate of the United States Air Force Academy and earned a Ph.D. in Philosophy from The University of Texas at Austin (1978). His recent research is in the areas of intelligent support for instructional design, system dynamics-based learning environments, assessing learning in complex domains, distance learning, and technology integration in education. Dr. Spector served on the International Board of Standards for Training, Performance and Instruction (*ibstpi*) as Executive Vice President; he is on the Executive Committee of the IEEE Technical Committee for Learning Technology and is Past President of the Association for Educational and Communications Technology (AECT). He is the editor of the Development Section of *Educational Technology Research & Development* and serves on numerous other editorial boards. He coedited the third edition of the *Handbook of Research on Educational Communications and Technology*, is again lead editor on the fourth edition. He has more than 100 journal articles, book chapters and books to his credit.

Donald Stepich, Ph.D. Steve is an Associate Professor and Department Chair in the Instructional and Performance Technology (IPT) Department at Boise State University. His research interests include the use of instruction to develop professional expertise. A frequent author and conference presenter, he is a member of ISPI and ASTD, and a contributing editor to Performance Improvement Quarterly. Don completed his doctorate in education at Purdue University.

Kate Thompson is a research associate at CoCo research center. Her PhD examined the intersection of learning sciences theory (multiple representations, CSCL) with simulation model use, and sparked an interest in user-specific scaffolds and strategies for the interrogation of simulation models. Kate's background in environmental science has led her to a systems perspective, and work on environmental education programs has involved mobile learning as well as virtual worlds. Currently, Kate's research is focussing on measuring and representing processes in CSCL as well as designing for these environments.

Sigmund Tobias is Eminent Research Professor, University at Albany, SUNY. Previously he was: Distinguished Research Scientist, Institute of Urban and Minority Education, Teachers College, Columbia; Distinguished Scholar, Fordham University; Research Professor, City College, CUNY. He was (1987–1988) President of the Division of Educational Psychology, American Psychological Association. His research interests include educational technology, adapting to unexpected events, assessment of metacognition, and adapting instruction to student characteristics.

Among his recent publications are the following:

Fletcher, J. D., & Tobias, S. (2011). Turning the corner in educational technology: Reflections on a half-century of research. *Educational Technology, 51*(5), 14–20.

Tobias, S., & Duffy, T. D. (2009). *Constructivist instruction: Success or failure?*. New York, NY: Routledge, Taylor and Francis.

Tobias, S. (2009). An eclectic appraisal of the success or failure of constructivist instruction: In S. Tobias, & T. D. Duffy (Eds.), *Constructivist instruction: Success or failure?* (pp. 335–350). New York, NY: Routledge, Taylor and Francis.

Tobias, S. (2010). Generative learning, paradigm shifts, and constructivism. A tribute to Wittrock. *Educational Psychologist, 45*, 51–54.

Tobias, S. (2010). The expert reversal effect and aptitude treatment interaction research. *Insructional Science, 38*, 309–312.

Tobias, S. (2010). Aptitudes and instructional methods. In N. J. Salkind (Ed.), *Encyclopedia of research design* (Vol. I, pp. 38–40). New York, NY: Sage.

Tobias, S., & Everson, H. T. (2009). The importance of knowing what you know: A knowledge monitoring framework for studying metacognition in education. In D. L. Hacker, J. Dunlosky, & A. Graesser (Eds.), *Handbook of metacognition in education* (pp. 107–127). New York, NY: Routledge, Taylor, and Francis.

Tobias, S., & Fletcher, J. D. (2009). Transforming learning with technology redux. *Educational Technology, 49(3)*, 54–58.

Tobias, S., & Fletcher, J. D. (2011). *Computer games and instruction.* Charlotte, NC: Information Age.

Tobias, S., & Fletcher, J. D. (2011). Computer games and instruction. The present, and future. In S. Tobias, & J. D. Fletcher (Eds.), *Computer games and instruction* (pp. 525–545). Charlotte, NC: Information Age.

Tobias, S., Fletcher, J. D., Dai, D. Y., & Wind, A. (2011). Review of research on computer games. In S. Tobias, & J. D. Fletcher (Eds.), *Computer games and instruction* (pp. 127–222). Charlotte, NC: Information Age.

Monica W. Tracey is an Associate Professor of Instructional Technology in the College of Education at Wayne State University. Her teaching and research experience center on the theory and research of design and its applications. She is a recipient of the 2011 Association for Educational Communications and Technology Achievement Award and the 2008 Design and Development Award. Tracey has worked for over 25 years in design and on design projects. Her work includes designing internationally and across disciplines. Recently, she directed a large-scale cross-cultural customized instructional design and performance improvement project in Dubai, The United Arab Emirates.

Agustin Tristán-López, Ph.D. (Solid Mechanics) is the General Director of the Institute of Evaluation and Advanced Engineering, San Luis Potosi, Mexico and is affiliated with the International Test Commission. He focuses on educational assessment for professional certification and statistical models for evaluation of teaching and learning, psychometrics with the Rasch model and validity and design of tests for nursing and health-related projects.

Mieke Vandewaetere is a postdoctoral researcher at the Center for Instructional Psychology and Technology (KU Leuven) and at the Academic Center for General Practice (KU Leuven). Her research interests are learners' perceptions and how they influence self-controlled tool use; complex learning and medical education.

Dr. George Veletsianos is Assistant Professor of Learning Technologies at the University of Texas at Austin. His teaching and research interests focus on the study of emerging technologies and pedagogies in online and hybrid education settings, and their relationship to student and instructor experiences and practices. Foci areas include online education, pedagogical agents, adventure learning, and networked participatory scholarship.

Dr. Katrien Verbert is a postdoctoral researcher of the Research Foundation—Flanders (FWO) at the HCI research unit of the Katholieke Universiteit Leuven. Her research interests include content models, content reusability, context-aware recommendation and personalization, and applications thereof in technology-enhanced learning, science information systems, and music information retrieval. In that respect, she is currently involved with the RAMLET IEEE LTSC standardization project that is developing a reference model for resource aggregation. She is also involved with the EU FP7 project ROLE that is focusing on the issue of contextual recommendation as a basis to support the development of Responsive Open Learning Environments. A key element of the ROLE vision for PLEs is that they should be adaptive depending on the needs, preferences and skills of the learner. In this context, she is involved in research on user-centric and context-aware methodologies, technologies and systems for tracking learner interactions with content and tools. These interactions are used for data analysis and computing of personal, social and contextual information about users and applications that is used as a basis for recommendation. She coorganized the workshop on Context-Aware Recommendation for Learning, at the Second Alpine Rendez-Vous in 2009 and the First workshop on Recommender Systems for Technology Enhanced Learning (RecSysTEL) that is jointly organized by the Fourth ACM Conference on Recommender Systems (RecSys 2010) and the 5th European Conference on Technology Enhanced Learning (EC-TEL 2010).

Lieven Verschaffel (1957) obtained in 1984 the degree of Doctor in Educational Sciences at the Katholieke Universiteit Leuven, Belgium. From 1979 until 2000 he obtained several subsequent research positions at the Fund for Scientific Research-Flanders. Since 2000 he is a full professor in educational sciences of that same university.

His major research interests are: teaching and learning of (mathematical) problem-solving skills, metacognitive and affective aspects of (mathematics) learning, and mathematics education. He is the coordinator of a Concerted Research Action funded by the Research Council of the KU Leuven entitled "Number sense: analysis and improvement" and he is the coordinator of the Scientific Network on "Critical and Flexible Thinking" that stimulates and supports research collaboration between several Belgian and European teams on this topic. He is a member of the editorial board of several international journals such as *Mathematical Thinking and*

Learning, *Educational Studies in Mathematics*, *Educational Research Review*, *Learning and Instruction*, *Human Development*, and *Cambridge Journal of Education*. His publication list contains about 120 SSCI-ranked international journal articles, 200 other journal articles, 25 monographs and edited volumes, 120 book chapters, and 75 papers published in international congress proceedings. For his contribution to (mathematics) education, he has been honored several times. In 2009 he was elected in 2009 as Member of the Flemish Royal Academia for Sciences and Arts of Belgium, and, in 2010 as a Member of the Academia Europaea.

Steven W. Villachica, Ph.D. Steve is an Associate Professor of Instructional and Performance Technology (IPT) at Boise State University. His research interests focus on leveraging expertise in the workplace in ways that meet organizational missions and business goals. He is currently working on an NSF grant to increase engineering faculty adoption of evidence-based instructional practices [NSF #1037808: Engineering Education Research to Practice (E2R2P)]. A frequent author and conference presenter, he is a member of ISPI, ASTD, and AECT. A contributing editor to *ETR&D*, Steve completed his doctorate in educational technology at the University of Northern Colorado.

Wayan Vota is a senior director at Inveneo, a social enterprise deploying sustainable tools of ICT to rural and underserved communities. His 15 years of experience includes technology solution assessment and design, and the sustainable deployment of information and communication technologies in a variety of global settings. He has developed and deployed technology solutions for USAID, UNICEF, Cisco Systems, Hewlett-Packard, and PricewaterhouseCoopers Moscow and advised the government of Jordan on its ICT in education policy, strategy, and operational plan. Wayan Vota draws on Inveneo's extensive experience in delivered solutions to more than 2.1 million people in 917 communities across 27 countries around the world. Mr. Vota also advises the World Bank on best practices in the deployment and use of ICT devices for education.

Mr. Vota has addressed the Clinton Global Initiative, International Telecommunications Union, Korea Institute of Science and Technology, the World Summit on Information Society, and the Government of Queensland, Australia on sustainable deployment methodologies. He is a Technology Museum Laureate, Global Social Business Incubator Alumni, DevEx International.

Donovan R. Walling is an independent scholar, writer, and editor and a senior consultant for the Center for Civic Education. He previously was Director of Publications for Phi Delta Kappa International. His numerous publications feature works on arts education, civic education, and the teaching of writing, including *Writing for Understanding, Why Civic Education Matters,* and *Public Education, Democracy, and the Common Good.*

Dr. Feihong Wang is a postdoctoral research associate in the School of Education at Virginia Tech. Dr. Wang's work has focused on technology-supported teaching and learning, game-based learning, collaborative learning, and distance education. She earned her Ph.D. in Instructional Design and Technology at Virginia Tech in 2010.

Scott Warren works as an Associate Professor of Learning Technologies at the University of North Texas. His current research examines the use of emerging online technologies such as immersive digital learning environments and educational games and simulations in K-20 settings. Prior to working in higher education, he taught both social studies and English in public schools for nearly a decade. His early work included creating the *Anytown* world to support writing, reading, and problem solving. His current work is with *The 2015 Project* alternate reality course and he designed the online literacy game *Chalk House*.

Dr. West is currently an assistant professor of Instructional Psychology and Technology at Brigham Young University. He has taught technology integration courses for preservice teachers for 4 years. He also teaches courses on instructional technology, program evaluation, and research strategies. He researches the design and support of learning environments that foster collaborative creativity, collaborative online learning, and technology integration in K-16 environments, as well as the effective training of preservice teachers in technology integration.

Dr. David Wiley is an associate professor in the Department of Instructional Psychology and Technology at Brigham Young University and associate director responsible for the research unit of the Center for the Improvement of Teacher Education and Schooling (CITES) in the David O. McKay School of Education. David is founder and board member of the Open High School of Utah and chief openness officer of Flat World Knowledge. Dr. Wiley leads the Open Education Group at BYU and is currently Senior Fellow for Open Education at the National Center for Research in Advanced Information and Digital Technologies (Digital Promise). Formerly he was an associate professor of instructional technology and Director of the Center for Open and Sustainable Learning at Utah State University. Nonresident fellow at the Center for Internet and Society at Stanford Law School, visiting scholar at the Open University of the Netherlands, and recipient of a US National Science Foundation's CAREER grant are among his other honors and accomplishments. David is Founder of OpenContent.org and was recently named one of the 100 Most Creative People in Business. His career is dedicated to increasing access to educational opportunity for everyone around the world.

Alexander Wind is currently in the PhD program in Educational Psychology and Methodology at the University at Albany, SUNY. He is also an adjunct with the Institute for Defense Analyses. His research interests are in the construct of dealing with the unexpected (and the related construct of mental rigidity) and the focus of this chapter, the relationships between gameplay and learning outcomes.

Recent publications include:

Fletcher, J. D., & Wind, A. P. (in press). The evolving definition of cognitive readiness for military operations. In H. F. O'Neil, Jr., R. S. Perez, & E. L. Baker (Eds.), *Teaching and Measuring Cognitive Readiness.*

Fletcher, J. D., & Wind, A. P. (2011). *Preparing to be Prepared: Cognitive Readiness and Dealing with the Unexpected* (IDA Document D-4402). Alexandria, VA: Institute for Defense Analyses.

Tobias, S., Fletcher, J. D., Dai, D. Y., & Wind, A. P. (2011). Review of research on computer games. In S. Tobias, & J. D. Fletcher (Eds.), *Computer games and learning* (pp. 127–222). Charlotte, NC: Information Age Publishing, INC.

Dai, D. Y., & Wind, A. P. (2011). Computer games and opportunity to learn: Implications for teaching students from low socioeconomic backgrounds. In S. Tobias, & J. D. Fletcher (Eds.), *Computer games and learning* (pp. 447–502). Charlotte, NC: Information Age Publishing, INC.

His current projects include an ongoing study involving a computerized instrument of dealing with the unexpected and a study of mental rigidity, the Einstellung Effect. The latter will be the topic of his dissertation.

Wally Wulfeck is a Senior Research Psychologist at the Space and Naval Warfare Systems Center in San Diego, CA, where he serves as Coprincipal Investigator and Project Scientist on the Interactive Multisensor Analysis Training (IMAT) project. The IMAT effort is developing new approaches to teaching complex tasks involved in sensor employment for Anti-Submarine Warfare. Products include training systems, mission simulations, and Navy tactical decision aids. The IMAT vision is to integrate training, mission rehearsal, tactical execution, and post-mission analysis to develop and maintain mission-related critical skills. IMAT products are prototypes for future human performance support systems which span career-long skill development from apprentice to master performance, across missions, platforms, and communities, at individual, team, platform, and command levels.

Dr. Wulfeck served during 2004–2007 as Deputy Science and Technology Officer for the Capable Manpower Future Naval Capability program at the Office of Naval Research (ONR). In that position he managed the $100 million budget and led the effort to redefine the program for future years.

Dr. Wulfeck has a continuing record of training research, technology development, and transition to operational use. During the 1990s, he directed the Instructional Simulations Division and Training Research Computing Facility at the Navy Personnel Research and Development Center in San Diego, California. His division developed training systems for use throughout the Navy and DoD, including the Naval Education and Training Command; the Naval Submarine School; Trident Training Facilities; AEGIS Training Center; the Navy/Marine Corps Intelligence Training Center; the Propulsion Engineering School, Naval Training Center Great Lakes; and the Joint Staff.

He is the author of well over 100 journal articles, book chapters, technical reports, and conference presentations. Dr. Wulfeck has also served as Science Advisor to the Chief of Naval Personnel, and received the Navy Meritorious Civilian Service Award.

Dr. Wulfeck received his Ph.D. in learning from the University of Pennsylvania in 1975, following undergraduate and graduate degrees in Mathematics and Mathematics Education from the University of California, Santa Barbara. He is a member of the American Psychological Society, the American Educational Research Association, and the Cognitive Science Society.

Charles Xie is a senior scientist at the Concord Consortium, a nonprofit organization focused on educational technology. He is currently the principal investigator of several NSF-funded research projects on engineering education and augmented reality. He developed the *Molecular Workbench* software, which has reached nearly a million users worldwide and won a prestigious *Science* Prize for Online Resources in Education. His current research covers the educational applications of mobile computing, sensors, simulations, infrared imaging, and CAD/CAM.

Miguel Angel Ylizaliturri-Salcedo, B.Sc., (Computer Engineering) is an Assistant Professor at the University of San Luis Potosi and head of the Informatics Department of the Institute of Evaluation and Advanced Engineering, San Luis Potosi, Mexico. He is responsible for test scoring and the development of software for online testing and item banking. Along with Dr. Tristán-López, he is developing software for lexical analysis of texts in Spanish.

Patricia A. Young, Ph.D. is an Associate Professor in Literacy Education at the University of Maryland, Baltimore County. Dr. Young earned her Ph.D. in Education: Language, Literacy and Culture from the University of California Berkeley. For the last decade, Dr. Young's experiences and education have culminated into her present work. Dr. Young developed the Culture Based Model as an instructional design framework that supports designers in creating culture-based information and communication technologies. Her current research involves mapping the model to a variety of interdisciplinary uses. This research is outlined in her book *Instructional Design Frameworks and Intercultural Models* (2009) published by IGI Global. Dr. Young's

research also examines the history of Instructional Design and Technologies made by and for African Americans and Race & Ethnicity in Urban Teacher Education. She has published referred articles in journals such as: Artificial Intelligence and Society; British Journal of Educational Technology; Journal of Educational, Technology & Society; Journal of Language, Identity and Education; and Race, Ethnicity & Education. In 2009, Dr. Young received the Outstanding Journal Article Award from the Association of Educational Communications & Technology—Design & Development Division for her article: *Integrating Culture in the Design of ICTs.*