

## About the Authors

**James Alty** received the PhD in Nuclear Physics at Liverpool University, and then worked with IBM(UK) Ltd for four years before becoming Director of the Computer Centre at Liverpool University. In 1982 he was appointed Professor of Computer Science at Strathclyde University, where he also was Executive Director of the Turing Institute in Glasgow. In 1990 he was appointed Professor of Computer Science at Loughborough University, where he was Head of Department and later Dean of Science. He is now an Emeritus Professor at Loughborough and also Professor of Human Computer Interaction at Middlesex University. Alty has published more than one hundred research papers and four books. He is also a composer of music, having had a number of works performed in public, and has carried out research into the use of music in human-computer interaction (HCI), for creating diagrams for the blind, using music in program debugging, and the sonification of algorithms.

**Olav W. Bertelsen** is an associate professor of human-computer interaction and systems development at the Department of Computer Science, University of Aarhus. He received his MSc in Computer Science and History of Ideas from the University of Aarhus, Denmark. After working on establishing the Danish National Centre for IT-research, he completed his PhD in informatics in 1998. He worked with the Danish Basic Research Foundation funded Centre for Human-Machine Interaction, and later joined the Department of Computer Science, University of Aarhus. Bertelsen has been teaching human-computer interaction at the interdisciplinary multimedia education center since 1998, and developed several courses in the intersection between human-computer interaction and digital aesthetics. His PhD thesis, "Elements of a Theory of Design Artifacts," was an attempt to give a systematic account, based on activity theory, on the tools, methods, techniques, and so on mediating the design of computer artifacts. Actual research interests include common information spaces; activity theory-based methods and techniques in human-computer interaction; and a reformation of human-computer interaction as an aesthetic discipline based in dialectical materialism.

**Jay David Bolter** is Co-Director of the New Media Center and Wesley Professor of New Media in the School of Literature, Communications, and Culture at the Georgia Institute of Technology. His work with computers led in 1984 to the publication of *Turing's Man: Western Culture in the Computer Age*, a book that was widely reviewed and translated into several foreign languages. Bolter's second book, *Writing Space: The Computer, Hypertext, and the History of Writing*, published in 1991, examines the computer as a new medium for symbolic communication. Together with Michael Joyce, Bolter is the author of Story-space, a program for creating hypertexts for individual use and World Wide Web publication. Recent books include: *Remediation*, written in collaboration with Richard Grusin, which explores the ways in which new digital media, such as the World Wide Web and virtual reality, borrow from and seek to rival such earlier media as television, film, photography, and print; and *Windows and Mirrors, Interaction Design, Digital Art and the Myth of Transparency*, written in collaboration with Diane Gromala, which examine the impact of digital art on new media and computer interface design. Bolter is now working closely with Prof. Blair MacIntyre on the use of augmented reality to create new media experiences for informal education and entertainment.

**Donna J. Cox** is Professor in the School of Art and Design at the University of Illinois at Urbana-Champaign; and the Director for Visualization and Experimental Technologies at the National Center for Supercomputing Applications. Cox received the international Coler-Maxwell Award for Excellence granted by the Leonardo International Society in Arts Science and Technology for her seminal paper on "Renaissance Teams." Cox has written numerous publications on scientific and information visualization. She is an internationally recognized keynote speaker in countries including Australia, New Zealand, Brazil, Finland, Japan, and Switzerland. Inviting institutions include MIT, Kodak, Motorola, EDUCOM, T. J. Watson Research Center, and the National Library of Medicine. Her collaborative work has been cited, reviewed, or published in more than one hundred publications including *Newsweek*, *Time*, *National Geographic*, *Wall Street Journal*, *New York Times*, and *The Chronicle of Higher Education*. Cox has been featured in numerous television programs including "Good Morning America." She was Associate Producer for Scientific Visualization and Art Director for the PIXAR/NCSA segment of the IMAX movie, "Cosmic Voyage," nominated for 1997 Academy Award in documentary short subject category. Recent projects include two Hayden Planetarium digital space shows, at the American Museum of Natural History in New York City; The Discovery Channel's "Unfolding Universe"; and the NOVA HDTV "Runaway Universe," which received the 2002 Golden Camera Festival Award. She is juror on the NSF's Visualization Challenge and SIGGRAPH 2005 Emerging Technologies Chair. Cox is currently working on a PBS NOVA show and Denver Museum of Nature and Science Planetarium Show on Black Holes.

**Mark d'Inverno** is Professor and Director of the Centre for Agent Technology at the University of Westminster and has been one of the UK's leading researchers in the formal modeling of agent-based systems for the last ten years. He is best known for developing the SMART Agent Framework with Michael Luck using formal methods. Much of this research can be found in a book entitled *Understanding*

*Agent Systems*, which is now in its second edition. He has collaborated with a number of leading agent researchers such as Michael Luck, Michael Wooldridge, and Mike Georgeff and has published more than seventy papers in this area in the past ten years. In addition, he has co-authored a book published in 2004 on agent-based software development. He was one of the founding members of the UK's special interest group on MAS and was general co-chair of the fourth and fifth UK workshops (UKMAS 2000 and 2001), both supported by the EPSRC. He was the general co-chair of the *First European Conference on Multi-Agent Systems (EUMAS)* held at Oxford University in December 2001, which attracted more than 130 people. In addition, University of Westminster is a founding member of the EPSRC-funded project entitled AgentCities UK and is an original member of the European Network of Excellence for Agent-Based Computing (*AgentLink I, II, and III*). In the last year or so he has branched from his formal, theoretical work to more practical and cross-disciplinary projects such as a MAS approach to modeling stem cell behavior and using MAS techniques to build intelligent responsive *music installations*. Mark is also a well-established musician; his last album, entitled *Joy*, received widespread national acclaim.

**Stephan Diehl** is a Professor for computer science at Catholic University Eichstätt. He studied computer science and computational linguistics at Saarland University, and is a Fulbright scholar at Worcester Polytechnic Institute, Massachusetts. He got his PhD from Saarland University as a scholar of the German Research Foundation (DFG) working in Prof. Reinhard Wilhelm's group. Stephan Diehl's research interests include programming languages and compiler design, web technologies, educational software and visualization, in particular software visualization.

**Michele Emmer**, born in Milan on September 15, 1945, is full Professor of Mathematics at the University of Rome "La Sapienza," Dipartimento di Matematica, Piazzale A. Moro, Rome, Italy. He was previously Professor at the University of Ferrara, Trento, Viterbo, L'Aquila, Sassari, Venice, and Visiting Professor at Princeton, Paris Orsay, Campinas, Barcellona, and several Japanese universities. His areas of activity were PDE and minimal surfaces, computer graphics, mathematics and arts, mathematics and culture, and films and videos. He received in 1998 the Galileo award from the Italian Math Association for best popularization of Mathematics, and in 2004 the Pitagora award. He was President for three years of the Italian associations for scientific media, part of the European association Media in Science; member of the American Mathematical Society, of the American Association for Aesthetics, of the European Math Association, ISAMA, and ISAST; President of the electronic scientific journal *Galileo* (<http://www.galileo.webzone.it>); collaborator for the last twenty years on the cultural and scientific pages of the newspaper *L'Unità* and other magazines including *Diario*, *Telega*, *Sapere*, *Scientific American*, *Alliage*, and *FMR*; and a filmmaker. His series "Art and Math" has been broadcast on TV in Italy and many other countries. Emmer has organized several exhibitions and conferences on the topic of Art and Mathematics, including the annual conference on "Mathematics and Culture" at the University of Venice; the exhibitions and conferences on M. C. Escher (1985 and 1998) at the University of Rome; the section on Space at the Biennial of Venice (1986), the traveling exhibition "The Eye of Horus" (Roma, Bologna, Milano,

Parma, 1989); and the exhibition and congress on “Math & Art” in Bologna, 2000. He edited the series *Mathematics and Culture* (Springer Verlag), *The Visual Mind* (MIT Press), and the video series “Video Math” (Springer Verlag). He has been responsible for the math section of the Science Center in Naples and many other traveling exhibitions on math.

**Paul A. Fishwick** is Professor of Computer and Information Sciences and Engineering at the University of Florida. He received the BS in Mathematics from the Pennsylvania State University, MS in Applied Science from the College of William and Mary, and the PhD in Computer and Information Science from the University of Pennsylvania in 1986. He worked in industry, at Newport News Shipbuilding & Dry Dock Co. and NASA Langley Research Center doing computer-aided design for six years prior to his academic post. Fishwick is a Fellow of the Society for Modeling and Simulation International (SCSI), has given twelve international keynote addresses in modeling and simulation, and serves on numerous journal editorial boards, including ACM Transactions on Modeling and Simulation and the SCS Transactions on Modeling and Simulation. He has chaired or co-chaired five conferences, and served as General Chair of the 2000 Winter Simulation Conference (WSC). He has written more than 150 technical publications, including one textbook and six edited books. Fishwick co-chaired the *Aesthetic Computing* workshop in 2002 in Dagstuhl, Germany, along with his colleagues Roger Malina and Christa Sommerer. Fishwick’s primary interests are in model representation, simulation, program visualization, and in the intersection between the arts and computing, especially as the arts can be applied to mathematics and computing, in reconsidering the role of aesthetics in these disciplines. His web page is at <http://www.cise.ufl.edu/~fishwick>.

**Monika Fleischmann** is a research artist and head of the MARS-Media Arts Research Science Department at Fraunhofer Institute for Media Communication. Previously, she founded and codirected Art+Com in Berlin. She studied visual arts, fashion design, drama and computer graphics in Zürich and Berlin. Her multidisciplinary background made her an expert in the world of art, computer science, and media technology. Her areas of expertise are Knowledge Arts & Knowledge Media, Interface Cultures, Interactive Systems, Virtual and Mixed Reality Environments. Fleischmann is the editor of the book *Digital Transformations*, and an editorial board member and reviewer for professional journals, conferences, and study courses. In 2000 *Time Fast Forward* magazine named her among the People to Watch. Her work—in partnership with Wolfgang Strauss—was awarded the Ars Electronica Golden Nica in Interactive Art in 1992. MARS is called one of the fifteen Media Art & Technology Labs with an international reputation. Since 1999 MARS has been developing an Internet platform for media art and digital culture, netzspannung.org, and knowledge discovery tools to explore this online archive.

**Ben Fry** recently completed his doctoral degree at the MIT Media Laboratory, where his research focused on methods of visualizing large amounts of data from dynamic information sources. His dissertation, “Computational Information Design,” examines methods for combining the disparate fields of computer science, statistics, graphic design, and data visualization as a means of understanding complex data.

The research has been applied to understanding the human genome data. Fry's work has been shown at the Whitney Biennial in 2002 and the Cooper Hewitt Design Triennial in 2003, as well as the Museum of Modern Art in New York, Ars Electronica in Linz, Austria, and seen in the films *Minority Report* and *The Hulk*.

**Carsten Görg** is working as a postdoctoral research fellow, funded by the German Academic Exchange Service (DAAD), at the College of Computing at the Georgia Institute of Technology in Atlanta. He studied computer science and mathematics as a double major at Saarland University in Germany, where he also received his PhD in computer science. His research interests include graph drawing, in particular dynamic graph drawing, information and software visualization, and also software engineering and software evolution.

**Susanne Grabowski** began her work on the design of hypermedia as learning environments during her studies of social management and media education at the Fachhochschule Munich and the University of Augsburg, Germany. Since 1998, she has been a member of the Working Group on Computer Graphics and Interactive System, University of Bremen. Her obligations encompassed teaching and research in digital media. As a member of the compArt project she investigates the dialectics of algorithmics and aesthetics in the early history of computer art. She has authored several papers in this area. Her current interests include computer art, semiotics, aesthetics, didactics, critical theory, and digital media. In her PhD research, she applies Peircean semiotics and the metaphor of space to describe potentials of digital media as study environments.

**Diane Gromala** is the founding Director of the BioMedia Lab and Associate Professor at the Georgia Institute of Technology. An artist, designer, theorist, and curator, Gromala's research explores the constitutive possibilities of embodiment and emerging technologies. Gromala's artwork in virtual reality, biomedical technologies, and pain has been exhibited worldwide and featured on the BBC, CNN and the Discovery Channel. Its technological innovation was recognized by American Institute of Graphic Arts, the American Institute of Architects, *Discover* magazine and the U.S. Congress. Since her work at Apple Computer in the 1980s, Gromala's design work has received numerous awards and is currently supported by the National Science Foundation and the United Nations Educational, Scientific and Cultural Organization (UNESCO). Gromala's extensive publications have appeared in numerous scholarly, scientific, art and design journals. Her recent book, *Windows and Mirrors, Interaction Design, Digital Art and the Myth of Transparency*, was coauthored with Jay Bolter and published by the MIT Press. She is currently collaborating with Dr. Tom Ettinger of Yale University on the development of systems for pain management, self-regulation, and sensory integration that combine immersive virtual reality and biofeedback technologies.

**Kenneth A. Huff** is an independent fine artist working primarily in digital/new media. His three-dimensional organic constructions are presented as prints, sculptures, and time-based works and documented at <http://www.kennethahuff.com/>. He started showing his work in October 1997 and since has

received over 110 visual arts awards. His work has been exhibited in seven consecutive ACM SIGGRAPH art exhibitions (1998–2004) and is held in private, corporate, and public collections throughout the world. Huff has lectured about his work and demonstrated his techniques frequently. Venues include the School of Visual Arts (New York), the College for Creative Studies (Detroit, Michigan), and numerous SIGGRAPH conferences.

**Frederic Fol Leymarie** is a graduate of the Polytechnic School of Montreal (Electrical Engineering, honors in aeronautics, 1986), McGill University (MEng in biomedical imagery, 1990), and Brown University (PhD in 3D shape representation, 2003). He was Project Manager in the R&D group of the GIS activity of Thales (then Syseca) in Paris from 1994 until 1998. In 1999, he cofounded the SHAPE lab at Brown University. Since 2004 he has been Professor of Computing at the Goldsmiths College, University of London, in the UK, where he leads a new graduate program in Arts and Computing. His recent collaborations include working with archaeologists (site of Petra, Jordan), sculptors (from the Mid-Ocean studio in Rhode Island), textile specialists (at the Constance Howard Center, London), and applied mathematicians and engineers in computer-aided design and free-form shape understanding.

**Michael Leyton's** mathematical work on shape has been used by scientists in more than forty disciplines including radiology, meteorology, computer vision, chemical engineering, geology, computer-aided design, anatomy, botany, software engineering, architecture, linguistics, mechanical engineering, computer graphics, archaeology, and quantum mechanics. His work is widely applicable because Leyton has established new foundations for geometry that fundamentally oppose the standard foundations for geometry from Euclid to modern physics including Einstein. In Leyton's foundations, a geometric object acts as a memory store for action rather than a memoryless object (invariant) as in the standard foundations. His scientific contributions have received several prizes, such as a presidential award and a medal for scientific achievement. He is also a much exhibited artist. His paintings, sculptures, and architectural projects have been featured in international design journals and invited exhibitions. He is also a prolific composer, and the scores of his string quartets are currently being published. His artistic work exemplifies his new foundations for geometry. Leyton is a professor in the Center for Discrete Mathematics and Theoretical Computer Science at Rutgers, as well as the Psychology Department. He is President of the International Society for Mathematical and Computational Aesthetics and has been the keynote and plenary speaker at conferences in virtually every scientific and artistic discipline.

**John Lee** is deputy director of the Human Communication Research Centre at the University of Edinburgh, and also a senior lecturer in the School of Arts, Culture and Environment. He holds an MA in Philosophy and a PhD in Philosophy and Cognitive Science, both from Edinburgh. His time is divided between informatics and architecture, reflecting a longstanding interest in computing and cognition in design and learning, and in means of communication and external representation that are not narrowly linguistic, especially using graphics. He directs a master's degree program on Design and Digital Media, and has a long history of research on multimodal dialogue, including dialogue systems that

seek to combine natural language with graphics and gesture, and on the roles of dialogue and representation in learning. He is also the coordinator of the Edinburgh-Stanford Link program of research and development into speech and language technology, funded by Scottish Enterprise.

**Jonas Löwgren**, born 1964, is Professor of Interaction Design in the School of Arts and Communication, Malmö University, Sweden. His work is partly about designing digital things, mainly in the fields of interactive visualization, mixed material-virtual media and at the intersection of mass media and interactive media. The other part of his work is to contribute to the design theory of digital materials. In terms of quantitative output, Jonas's work has led to two textbooks, around forty peer-reviewed publications and thirty portfolio items as well as fifty invited talks and fifty publications for general audiences and less rigorous scientific venues. More important, however, some of the work has turned out to be useful in professional applications and other parts have worked well as learning resources for interaction design students. More details can be found at [webzone.k3.mah.se/k3jolo](http://webzone.k3.mah.se/k3jolo).

**Roger Malina** is an astronomer and space scientist. He was the Principal Investigator of NASA-EUVE Observatory, which carried out the first maps of the sky in the extreme ultraviolet portion of the spectrum. He is currently a coinvestigator in the Super Nova Acceleration Probe proposal to build a wide-field space telescope to map the large-scale structure and geometry of the universe; such mapping using supernovae as standard candles and mapping of gravitational lensing will allow the nature of dark energy and dark matter to be studied. Malina is a Directeur de Recherche of the CNRS at the Laboratoire d'Astrophysique de Marseille. He has also been, since 1982, Chairman of Leonardo/International Society for the Arts, Sciences and Technology; Leonardo/ISAST is the publisher of the Leonardo Journals and Books with MIT Press, awards a number of prizes and organizes workshops and other services to the art, science, and technology profession. A member of the International Academy of Astronautics and co-chair of the IAA Space and Society Commission, Malina leads the Leonardo Space Arts Working Group, which seeks to enable collaborations between artists and space scientists and engineers.

**Laurent Mignonneau** is an internationally renowned media artist working in the field of interactive computer installation. He holds a position as Professor for Interface Culture at the University of Art and Design in Linz Austria and at the IAMAS International Academy of Media Arts and Sciences in Gifu, Japan. He previously worked as researcher and Artistic Director at the ATR Advanced Telecommunications Research Lab in Kyoto, Japan. Mignonneau has been collaborating since 1992 with media artist Christa Sommerer, to create pioneering interactive computer installations such as "Interactive Plant Growing" (1992), "Anthroposcope" (1993), "A-Volve" (1994), "Trans Plant" (1995), "Intro Act" (1995), "MIC Exploration Space" (1995), "GENMA" (1996), "Life Spacies" (1997), "Life Spacies II" (1999), "HAZE Express" (1999), "VERBARIUM" (1999), "Industrial Evolution" (2000), "PICO\_SCAN" (1999/2000), "Riding the Net" (2000), "The Living Room" (2001), "The Living Web" (2002), "Nano-Scape" (2002), "Mobile Feelings" (2003), and "Eau de Jardin" (2004). Their works have been shown in around 130 exhibitions worldwide and are permanently installed in media

museums and media collections around the world, including the Media Museum of the ZKM in Karlsruhe, Germany, the NTT-ICC InterCommunication Center in Tokyo, the Cartier Foundation in Paris, the Millennium Dome in London, the Tokyo Metropolitan Museum of Photography in Japan, the AEC Ars Electronica Center in Linz, Austria, the NTT Plan-Net in Nagoya, Japan, Shiroishi Multimedia Art Center in Shiroishi, Japan, and the HOUSE-OF-SHISEIDO in Tokyo. Mignonneau and Sommerer have won major international media awards, for example, the Golden Nica Ars Electronica Award for Interactive Art 1994 (Linz, Austria), the Ovation Award of the Interactive Media Festival 1995 (Los Angeles), the Multi Media Award '95 of the Multimedia Association Japan, and the World Technology Award in London (2001). They have published numerous research papers on Artificial Life, interactivity, and interface design and lectured extensively at universities, international conferences, and symposia. In 1998, together with Christa Sommerer, Mignonneau edited a book on the collaboration of art and science called *Art@Science*, published by Springer Verlag.

**Frieder Nake** is a Professor of Graphic Data Processing and Interactive Systems at the Department of Computer Science, University of Bremen, Germany. He earned degrees in mathematics from the University of Stuttgart (Diplom in 1963, Dr.rer.nat. in 1967). He was a visiting researcher in computer art at the University of Toronto in 1968–69, and an Assistant Professor in Computer Science at the University of British Columbia, Vancouver, in 1970. In 1972, he went to Bremen as a full professor. His research interests are in computer graphics, digital media, computer art, computers in education, semiotics, and the theory of computing science. He began work in computer graphics and art in December 1963, and is recognized as one of the first to exhibit computer art (November 1965). He contributed to many art exhibitions, mainly between 1965 and 1972. Recently, he had one-man shows at the prestigious Kuns-thalle Bremen and ZKM Karlsruhe, and has designed hypermedia installations for museums in Germany. He has published widely and taught on all levels of computer science, but also in the humanities and education. He won the First Prize of the Computer Art Contest of “Computers and Automation” in 1966. He has been a visiting professor to the University of Vienna, University of Oslo, University of Colorado at Boulder, and University of Aarhus, Denmark.

**Ray Paton** was Lecturer of Computer Science at the University of Liverpool, UK, and passed away during the editing of this book. The following text was taken from the Computer Science Department web page, and we include it here verbatim. Ray entered academia relatively late in life, after a spell as a teacher in a Liverpool high school. He joined the Department of Computer Science in 1989, initially as a research assistant in the area of knowledge-based systems. He became a Lecturer in 1991, and was promoted to Senior Lecturer in 2001, and then Reader in January 2004. Ray’s main research interests were at the intersection of biology and computer science. He was an original, influential, and charismatic researcher, with collaborators across the world. Many computer scientists with an interest in biology are met with scepticism by researchers in the biology community, but Ray had the rare ability to win over researchers in both computer science and biology with his vision. Those who worked with him will

readily attest to his enthusiasm and willingness to listen, and his skill at making connections between people and ideas. The author of innumerable research papers and books, Ray was also involved in founding and editing several journals. As well as being a successful academic, Ray was a dedicated and loving father and husband. He is survived by his wife Christine and two sons, Daniel and Andrew. Our thoughts are with them.

**Jane Prophet** is Co-Director of the Centre for Arts Research, Technology and Education (CARTE) and Professor of Visual Art and New Media at the University of Westminster, London. She graduated in Fine Art (Sheffield Hallam University 1987), completing her PhD at Warwick University in 1995. She is an artist whose work includes large-scale installations, digital print, websites and CD-ROMs. Her art reflects her interest in complexity theory, landscape, and artificial life. Among her past projects is the award-winning piece, TechnoSphere. Site-specific projects include Conductor (the inaugural installation at The Wapping Project, made using 74 tons of water and 120 electroluminescent cables), Decoy, and The Landscape Room, which combine images of real and computer-simulated landscapes. She works collaboratively across disciplines in a number of internationally acclaimed projects that have broken new ground in art, technology and science. In CELL (2002–) she collaborates with mathematician Mark d’Inverno and Neil Theise, a scientist whose ground-breaking research into stem cells behavior is changing the way we understand the body. She has just been awarded a National Endowment for Science Technology and the Arts Dream Time Fellowship to spend a year developing her interdisciplinary collaborations.

**Aaron Quigley** is a member of the systems research group and college lecturer in the University College Dublin, Ireland. He has previously held positions as a Senior Research Fellow in the University of Sydney, Australia, a visiting scientist in Mitsubishi Electric Research Labs, Massachusetts and an Associate Lecturer in the University of Newcastle, Australia. He was awarded his PhD in 2002 and has produced over thirty publications since 1998. These include three journal publications (two in submission); two edited volumes; one book chapter; eighteen international conferences and workshops; and twelve national conferences and workshops. He holds two international patents. His research interests fall broadly within the area of adaptive systems. In particular, his specific research interests include information visualization and ubiquitous computing. Along with this, he is a core member of the ARC Research Network in Enterprise Information Infrastructure in Australia and was recently appointed as a faculty fellow with the IBM Dublin Centre for Advanced Studies. He has previously collaborated with Motorola, MERL, Semantic Designs, NICTA, Smart Internet CRC, and Telstra on joint research projects. Dr. Quigley’s supervision responsibilities currently include two PhD students and he has had two MSc and six honors (1st class) completions. He is a member of the Editorial Board of Journal of Pervasive Computing and Communications. He has taken a leading role in four international conference/workshops (Treasurer Chair, Co-Chair, Volunteer Chair, Proceedings Editor) and has been a member of eighteen other conference/workshop scientific/program/organizing committees.

**Casey Reas** is an artist and educator exploring process and abstraction through diverse digital media. Reas has exhibited and lectured in Europe, Asia, and the United States and his work has recently been shown at Ars Electronica (Linz), Kunstlerhaus (Vienna), Microwave (Hong Kong), ZKM (Karlsruhe), and the bitforms gallery (New York). Reas received his MS degree in Media Arts and Sciences from MIT, where he was a member of the Aesthetics and Computation Group. He is an Assistant Professor in UCLA's Design|Media Arts Department.

**Christa Sommerer** is an internationally renowned media artist working in the field of interactive computer installation. She holds a position as Professor for Interface Culture at the University of Art and Design in Linz, Austria, and at the IAMAS International Academy of Media Arts and Sciences in Gifu, Japan. He previously worked as a researcher and Artistic Director at the ATR Advanced Telecommunications Research Lab in Kyoto, Japan. Sommerer has been collaborating since 1992 with media artist Laurent Mignonneau, creating pioneering interactive computer installations such as "Interactive Plant Growing" (1992), "Anthroscope" (1993), "A-Volve" (1994), "Trans Plant" (1995), "Intro Act" (1995), "MIC Exploration Space" (1995), "GENMA" (1996), "Life Spacies" (1997), "Life Spacies II" (1999), "HAZE Express" (1999), "VERBARIUM" (1999), "Industrial Evolution" (2000), "PICO\_SCAN" (1999/2000), "Riding the Net" (2000), "The Living Room" (2001), "The Living Web" (2002), "Nano-Scape" (2002), "Mobile Feelings" (2003) and "Eau de Jardin" (2004). Their works have been shown in around 130 exhibitions worldwide and are permanently installed in media museums and media collections around the world, including the Media Museum of the ZKM in Karlsruhe, Germany, the NTT-ICC InterCommunication Center in Tokyo, the Cartier Foundation in Paris, the Millennium Dome in London, the Tokyo Metropolitan Museum of Photography in Japan, the AEC Ars Electronica Center in Linz, Austria, the NTT Plan-Net in Nagoya, Japan, Shiroishi Multimedia Art Center in Shiroishi, Japan and the HOUSE-OF-SHISEIDO in Tokyo. Sommerer and Mignonneau have won major international media awards, including the Golden Nica Ars Electronica Award for Interactive Art 1994 (Linz, Austria), the Ovation Award of the Interactive Media Festival 1995 (Los Angeles), the Multi Media Award '95 of the Multimedia Association Japan, and the World Technology Award in London (2001). They have published numerous research papers on Artificial Life, interactivity, and interface design and lectured extensively at universities, international conferences, and symposia. Sommerer is also an international coeditor of the *Leonardo Journal* (MIT Press). In 1998, together with Laurent Mignonneau, she edited a book on the collaboration of art and science called *Art@Science*, published by Springer Verlag.

**Wolfgang Strauss** is an architect, media artist, and Codirector of the MARS-Exploratory Media Lab at Fraunhofer Institute for Media Communication. He was a Visiting Professor in Kassel and Saarbrücken and a research scientist. He studied Architecture and Visual Communication at the Berlin University of the Arts. His areas of expertise are Interactive Media Art and Design. Currently he is working on interfaces connecting the human body and digital media space. His work, in partnership with Monika Fleisch-

mann, was awarded the Ars Electronica Golden Nica in Interactive Art in 1992. MARS is one of the fifteen Media Art & Technology Labs with an international reputation that has been developing an Internet platform for media art and digital culture, [netzspannung.org](http://netzspannung.org), since 1999, and knowledge discovery tools to explore this online archive.

**Noam Tractinsky** is a Senior Lecturer at the Department of Information Systems Engineering at Ben-Gurion University. He received his PhD in Information Systems from the University of Texas at Austin. His research appeared in journals such as *Behavior & Information Technology*, *Communications of the ACM*, *Human-Computer Interaction*, *Interacting with Computers*, *International Journal of Human-Computer Studies*, and *MIS Quarterly*. His recent research projects involved the study of consumer behavior in e-commerce and the effects of time pressure and time delays on decision making and user behavior. He is currently interested in the study of aesthetic and affective aspects of information technology.

**Paul Vickers** holds a BSc degree in Computer Studies from Liverpool Polytechnic and a PhD in Human-Computer Interaction from Loughborough University. He is currently Principal Lecturer in at Northumbria University, where he has been since 2001. Between 1989 and 2001 Vickers taught at Liverpool John Moores University, and before that worked in a software development team at Digital Equipment Co. Ltd. Vickers is a UK Chartered Engineer and a member of the Institution of Electrical Engineers as well as a registered practitioner in the UK's Higher Education Academy. His research centers on human-computer interaction (HCI) and auditory visualization, with a particular focus on the use of music as a medium for external representations. Vickers has presented at and been on the organizing committees for a number of international conferences and has been interviewed by international media about his work on auditory representations of programs. A keen musician, he is very interested in bringing together technologists, engineers, musicians, composers, sound artists, audio engineers, and programmers to build well-motivated and well-designed tools for exploring sound as a communication medium. He owns no cats.

**Dror Zmiri** is a graduate student at the Department of Information Systems Engineering at Ben-Gurion University. He has a BSc in Management & Industrial Engineering, specializing in Information Systems, and a BSc in Computer Science & Mathematics, both from the Ben-Gurion University.