About the Contributors

Anna Ursyn, PhD, is a Professor and Computer Graphics Area Head at the School of Art and Design, University of Northern Colorado. She combines programming with software and printmaking media, to unify computer generated and painted images, and mixed-media sculptures. Ursyn had over 30 single juried and invitational art shows, participated in over 100 fine art exhibitions, and published articles and artwork in books and journals. Research and pedagogy interests include integrated instruction in art, science, and computer art graphics. Since 1987 she serves as a Liaison, Organizing and Program Committee member of International IEEE Conferences on Information Visualization (iV) London, UK, and Computer Graphics, Imaging and Visualization Conferences (CGIV). She serves as Chair of the Symposium and Digital Art Gallery D-ART iV, 1997-2011.

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Ahmed Aber is a Medical Doctor practising at the Luton and Dunstable Hospital. Ahmed received his Medical Degree from the Barts and The Royal London Medical School and his Bachelor’s degree in Biomedical Engineering from Queen Mary University of London. He is currently undertaking his postgraduate training at the North Thames Central Foundation School. He is heavily involved in clinical and non-clinical research with a special interest in the use of nanotechnology, laser imaging, and artificial intelligence to enhance medical imaging. He is also responsible for teaching and organising courses for medical students at the University College London.

Mohammad Majid al-Rifaie is a PhD researcher at Goldsmiths, University of London. His background is in computing and journalism, and his artistic interests focus on the interconnections between artificial intelligence, swarm intelligence, robotics, and digital art. He has several publications in the field of swarm intelligence and biologically inspired algorithms (stochastic diffusion search, particle swarm optimisation, genetic and differential evolution algorithms), analysing their performance and providing possible integration strategies. Many of Mohammad’s projects on the aforementioned fields have been well received and sponsored by external entities (i.e. Luz by VIDA Fundación Telefónica competition of art and artificial intelligence 13th edition, Swarms Go Dutch by the American University of Paris, and Mr. Confused Robotic Household by Goldsmiths Annual Fund, University of London).

Kuai Shen Auson was born in Guayaquil, Ecuador. He holds a BA in Digital Arts and an MA in Media Arts with honors from the Academy of Media Arts in Cologne. He has brought his work, exploring the cybernetic emergence of ants into new territories, from Quito to New York and now to Cologne. His
artistic approach to self-organization and emergence is envisioned in four installations: ?Recurrent Ant Dream #1?, ?1.ant.ity?, ?The Cybernetic Emergence of Ants,? and ?Oh!m1gas: biomimetic stridulation environment.? His current research focuses on game design and theory based on his interdisciplinary artistic/scientific work with ants at the University of Applied Sciences Cologne.

**Mark John Bishop** is Professor of Cognitive Computing at Goldsmiths, University of London and Chair of the AISB. He has published over 120 articles in the field of Cognitive Computing: its theory - where his interests centre on the foundations of the swarm intelligence paradigm “Stochastic Diffusion Processes”; its application – he has worked on industrial problems in autonomous robotics, neural networks and colour; and its philosophical foundations - he has developed a novel argument against the possibility of machine consciousness. Together with John Preston, Mark has co-edited a critique of John Searle’s arguments against machine intelligence, “Views into the Chinese Room” (OUP, 2002).

Jean Constant studied art at the Beaux Arts in Tours and at the San Francisco Art Institute. He worked as a muralist for the San Francisco Art Commission and a photographer for European agencies, which lead him to record the revival of the mural movement in California and throughout the country in the mid-seventies. Jean was a gallery director in Phoenix, AZ, the Arizona Artists Program, and later in Los Angeles. He worked as Public Art consultant and producer of several TV series on art, film, and culture. Jean taught film studies at the University of New Mexico and has been acting director of the NNMC Media and Visual Communication program. He is today Executive Secretary for the European Society for Mathematics and Art.

Doug Craft is a visual artist, scientist, and musician who creates collages, photographs, and paintings that incorporate the Golden Ratio, the fractal structure associated with nature. A member of Core New Art Space, he had numerous solo and group exhibitions, and was published in Math Horizons magazine and the journal Cybernetics and Human Knowing. His microphotography was recognized by the 2008 and 2009 Nikon Small World Competitions, and his website contains one of the largest collections of microphotos on the Internet. As an environmental research chemist Doug published numerous peer reviewed journal papers and research reports concerning natural water chemistry, water quality, toxicological chemistry, fate and transport of contaminants, acid precipitation, and the geochemistry. He is the CEO of Craft Geochemistry Consulting, LLC, http://www.craftgeochemistry.com, writes and lectures on Peak Oil, energy depletion issues, and relocalization. His art and music may be found on his website, http://www.dougcraftfineart.com.

Hans Dehlinger studied Architecture at the University of Stuttgart, graduated with a Dipl.Ing./ Architektur, and then at the University of California, Berkley (M.Arch., & Ph.D.). He worked as a chief designer in the design teams for the Olympic-Game-Buildings in Munich, a planning scientist for the “Studiengruppe für Systemforschung” in Heidelberg, and as a freelance architect and design scientist. He was a founder and director of the “Institut für Rechnergestuetztes Darstellen und Entwerfen.” In 1980 he was appointed Professor of Industrial Design at the University of Kassel and started to explore computers artistically. Dehlinger’s work received worldwide recognition, and was shown first in Europe, later in Canada, Russia, Australia, the USA, Armenia, and China. Drawings of Dehlinger are in private collections, in the Victoria and Albert Museum in London, and in the Mary and Leigh Block Museum of Art in Evanston.
Deborah Harty is an artist and researcher. She holds a PhD in Drawing from Loughborough University. Harty’s ongoing research is practice-led and utilises drawing practice alongside theory to research aspects of phenomenology, perception, and experience. Harty has been involved in TRACEY - Loughborough University’s online journal of drawing research - for several years, becoming a co-editor in 2010. In 2011 Harty’s three-year long research project “drawing is phenomenology” will be launched within the new TRACEY Project Space. As a practitioner-researcher Harty has contributed to debates in drawing through both conference presentation and exhibition including a solo exhibition at C4RD and inclusion in the iNDA. Now she holds a post at Nottingham Trent University, UK.

Scott Hessels is filmmaker, sculptor, and media artist who mixes cinema with emerging technologies to explore new relationships between the moving image and the environment. His artworks span several different media including film, video, Web, music, broadcast, print, kinetic sculpture, and performance. His films have shown in numerous international film festivals, and his installations have been presented in exhibitions around the world including CiberArt in Bilbao, Ars Electronica, The Ford Presidential Museum, SIGGRAPH, ISEA, and Japan’s Media Art Festival. His work is featured in several books on new media art as well as in magazines like Wired and Discover. His recent projects have mixed film with sensors, robotics, GPS systems, and alternative forms of interactivity and have included partnerships with NASA, The Federal Aviation Administration, and Nokia, among others. He is currently an Associate Professor at The School of Creative Media in City University of Hong Kong.

Collin Hover is a Master’s of Fine Arts candidate at the University of Texas at Arlington, scheduled to complete his study in 2012. Currently his research focus is on virtual, interactive, and game-based visual communication applied to education and learning. His undergraduate study in Graphic Design was split between Virginia Tech and the University of South Dakota. Before attending university, Collin grew up in a nomadic family of (hyper)polyglots, travelling and living in the Middle East, Europe, eastern Asia, and the triangle of Polynesia to pursue a love of language.

Scottie Huang is an artist, designer, and researcher. He is interested in the use of interactive media into kinetic sculpture and architectural space. He was selected to participate in SIGGRAPH Biologic Juried Art Gallery, Prague Quadrennial of Performance Design and Space, recipient of the K. T. Creativity Award and Gold Award in Interactive Technology Art, and a Nomination of The 3rd Digital Art Award Taipei in Interactive Installation. His works has been published in a number of conferences, journals, and magazines including SIGGRAPH (ACM), Leonardo/ISAST (MIT Press), Ubiquitous, Autonomic, and Trusted Computing (IEEE Press), CAADFutures (Springer), Taiwan Reviews, RealTime Art, DeSForM, ASCAAD, etc. Scottie received a B.S. (architectural design) from National Taipei University of Technology; a M.S. (digital architecture) from National Chio-Tung University; and a Ph.D. in Architecture from National Taiwan University of Science and Technology.

Eunsu Kang is an international media artist from Korea. She creates audiovisual spaces interacting with people using interactive video, spatialized sound, site-specific installation and performance. Her work has been invited to numerous places around the world including Japan, China, Switzerland, Sweden, France, Germany and the US. All nine of her solo exhibitions, consisting of individual or collaborative projects, were invited or awarded. Her research has been presented at prestigious conferences such as
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ACM, ICMC and ISEA. Kang earned her Ph.D. in Digital Arts and Experimental Media from DXARTS at the University of Washington. She received an MA in Media Arts and Technology from UCSB and an MFA from the Ewha Woman’s University. She is currently an assistant professor of New Media Art at the University of Akron in Ohio, USA.

Matthew Kolodziej earned a BA in Economics from the University of Chicago in 1988 and an MFA in painting from Rhode Island School of Design in 1993. Interested in what people leave behind, Kolodziej worked on archaeological digs while in college. These formative experiences strengthened an interest in material culture. A Fulbright Scholar in 1995, Kolodziej traveled extensively in England to explore prehistoric ruins. In 2009, he was awarded a Pollock Krasner grant. His paintings have been featured in shows at the Rose Art Museum, The Akron Art Museum, and most recently in the exhibition There Goes the Neighborhood at The Museum of Contemporary Art Cleveland, the William Busta Gallery in Cleveland, and Pierogi in New York.

Eve Andrée Laramée is an interdisciplinary artist and researcher working at the confluence of art and science, specializing in the environmental and health impacts of Cold War atomic legacy sites. Laramée divides her time between Brooklyn, NY; Santa Fe, NM; and Baltimore, MD where she is Professor of Interdisciplinary Sculpture at the Maryland Institute College of Art. Her art has been exhibited throughout the United States, England, Germany, Italy, Switzerland, France, Holland, Israel, China, Japan, Poland, and the Czech Republic. Her work is included in the collections of the MacArthur Foundation; the Museum of Modern Art, New York; the Museum of Contemporary Art, Chicago; The Fogg Art Museum of Harvard University; MIT; and in numerous other public and private collections. Laramée has received grants from the Pollock-Krasner Foundation, Andy Warhol Foundation, New York Foundation for Arts, National Endowment for the Arts, and the Guggenheim Museum.

Liz Lee received a BFA from the University of Calgary in Calgary, Alberta Canada in 1990 and a MFA in Photography from the Savannah College of Art and Design in 1996. She is a Professor of Photography in the Department of Visual Arts and New Media at the State University of New York at Fredonia. Before this, she was an Assistant Professor at Missouri State University. Liz’s work has appeared in numerous national and international exhibitions. Her work also appears in Robert Hirsch’s text Light and Lens: Photography in the Digital Age and Exploring Color Photography: From Film to Pixels 5th edition. In 2007 she received a fellowship with Booksmart Studios in Rochester, NY to produce her series Grassroots (the shun series) as a limited edition fine-art book. She recently participated as an artist-in-resident at the Vermont Studio Center in Johnson, VT.

Peter H Niewiarowski is a professor of Biology and the interim director of the Integrated Bioscience Ph.D. program at the University of Akron. He has active research projects in amphibian population biology, and the ecology and evolution of geckos, particularly as they relate to adhesion. Through collaboration with material scientists, designers, and engineers, he has begun to explore biomimicry and biologically-inspired design. Biomimicry also provides an engaging platform for interaction with artists who are curious about the relationship between art and science, especially as it impacts our professional and personal lives.
Cris Orfescu was born in Bucharest, Romania, and has lived and worked in Los Angeles since 1991. He is a self-taught artist and also a degreed scientist who has been experimenting for over 40 years with different media and art forms including digital art, murals, acrylic and oil painting, mixed media, faux painting, trompe l’oeil, collage, graphics, animation, web design, video, and multimedia. For more than 25 years he has been experimenting and perfecting a new art form, NanoArt, which reflects the transition from science to art through technology. Orfescu was showing internationally his awarded works in USA, Italy, France, Finland, Korea, UK, Ireland, Spain, Germany, Colombia, Greece, Czech Republic, and Romania, in numerous solo and group exhibitions. His art was commissioned for public and private collectors.

Victor Raphael is an artist who works in several media—including painting, photography, digital art, printmaking, and video. Raphael explores the broad themes of time and space through his investigations of nature, deep space, art history, and metaphysics. Raphael’s artwork is in many collections, including: Bibliotheque Nationale de France, Huan Tie Times Art Museum (Beijing), Los Angeles County Museum of Art, Sol LeWitt Collection, Polaroid Collection, the Skirball Museum, and Tokyo Metropolitan Museum of Photography. Raphael’s work was included in the 50th anniversary exhibition Polaroid 50: Art and Technology, which toured European museums from 1996-98, as well as American Perspectives: Photographs from the Polaroid Collection, which toured Japanese museums from 2000-2001. Raphael has had two museum retrospectives of his artwork, a 20-year survey at the Frederick R. Weisman Museum of Art at Pepperdine University in 2000 and a 30-year survey at the USC Fisher Museum of Art.

Wolfgang Schneider (born in 1945) is a Natural Scientist. He completed studies in Geology, History, and History of the Arts (Universities of Cologne and Bochum, Germany). In 1977 – 2010 he served as a Director of the Museum der Stadt Gladbeck, Germany. He was a Co-Founder of the Gesellschaft fuer Elektronische Kunst (Electronic Art Society), and in 1986 – 2010 International Biennial Competitions for the ‘Gladbeck Golden Plotter Award’ and travelling exhibitions. He is also Editor of catalogs in history and cultural history.

Clayton S. Spada, artist, curator, writer, and adjunct faculty at Cypress College, works on applications in digital signal processing, still- and motion-based imaging. Clayton holds a PhD in Biology from Leicester University in England. He has been a Photoshop beta-tester and consultant for Adobe Software. Previously in charge of the Orange County Center for Contemporary Art, Spada was also co-founder and editor-in-chief of the art quarterly NoMoPoMo: A Contemporary Artist’s Resource. Member of The Legacy Project, six Southern California photographers who document the decommissioned Marine Corps Air Station at El Toro, California, and its transition into the Orange County Great Park. Works exhibited and published in annuals, periodicals, and textbooks, and also featured in cable and network television spots in the US and abroad, held in institutional collections including the Fisher Gallery (University of Southern California), Digital Media Studio (University of California), and private collections in the US, UK, Germany, and China.
Shen-Guan Shih is Associate Professor in Department of Architecture at National Taiwan University of Science and Technology, Taiwan. His research interests are in computer-aided design in architecture, design theory, and artificial intelligence. He teaches architectural design, computer applications for architecture, as well as the methods and theory for architectural design.

Mark J. Stock is an artist, programmer, and scientist working in the space between visualization, computation, and new media art. His work depicts scenes from the hidden world of computational physics—the science of digitally simulating complex natural phenomena on supercomputers—and is created with custom software developed over the course of his scientific research. He has been producing art since 2000 and has had work in dozens of curated and juried exhibitions since 2002, including *Ars Electronica*, *ASPECT Magazine*, and six SIGGRAPH Art Gallery appearances. Mark finished his Ph.D. in Aerospace Engineering at the University of Michigan in 2006 for the study of vortex sheet methods, and he has worked for a small computational physics research company in Santa Ana, California since. He currently works and develops art in his studio in Newton, MA, where he lives with his wife and a pile of computers.

Kalyan Chakravarthy Thokala earned a Master of Science degree in Computer Science from the University of Akron. The title of his thesis was “Haptic-enabled Multi-dimensional Canvas.” As part of the thesis work, he developed a virtual paint brush that allows artists to paint in multiple dimensions with gravity and force feedback. His interest in the arts motivated him to design and build innovative tools for artistic expressions. He has a particular interest in the mathematical theory of creating virtual flora and fauna and the relationship between such artwork and the nature of science behind it. Thokala also received a Bachelor of Engineering degree in Information Technology from Chaitanya Bharathi Institute of Technology affiliated with Osmania University in India.


Donna Webb has been a Professor of Art at the Myers School of Art at the University of Akron since 1981. She teaches ceramics and the history of craft. She is also a studio artist. Her diverse work in ceramics includes vessels, sculpture, and tile installations. Her primary concentration has been in mixed media tile installations in public buildings throughout Ohio. Her work in glaze formulation has resulted in mosaics in which color is used in a painterly way. Her work has been published in “The Art of Mosaic Design” and in the “Penland Book of Crafts.” Her studio and Gallery, Blue Sky, has been in operation since 1995.
Yingcai Xiao is an Associate Professor of Computer Science at the University of Akron. His research interests are in the applications of computer graphics and visualization. One area of particular interest to him is digital arts, where computer scientists can be inspired to develop tools for artists to expand their creativity in the virtual space. Xiao has been serving as the program chair of IADIS International Conference on Computer Graphics and Visualization since 2007. He received a Ph.D. in Physics and a Ph.D. in Computer Science, both from the University of Alabama in Huntsville. He was a computer scientist at Intergraph Corporation prior to joining the faculty of the University of Akron.

Hironori Yoshida was a visiting scholar at Carnegie Mellon University and researcher at dFAB and CoDe Lab. He organizes hy-ma.com, collecting new material experiences recently emerged due to computation, electronics, and advanced tooling process. His education in Material Engineering at Waseda University and Industrial Design at TU Delft crystallized to his recent work, Digitized Grain, presented at SIGGRAPH 2011. He worked as an interior designer in Tokyo and model maker at Vincent de Rijk Werkplaats. His current focus is hybridization of technology and materials, resulting in materiality augmented by technology such as advanced fabrication and sensing/actuating technology. The mediation of his focus is rooted in his multidisciplinary background among engineering, material science and interior design, and multi-national design activity in Europe, United States, and Japan.

Rachel Zuanon is media artist and designer. She is a researcher and Professor in the MA Design Program at the Anhembi Morumbi University, Brazil, coordinates the CNPq research group “Design: creation, language and technology,” the “Sense Design Lab,” the “TVDi Design Lab,” and the study group “Design of Physical-Digital Interfaces.” She holds a PhD in Communication and Semiotics (PUC-SP). She is partner-director of the Zuanon Integrated Solutions in Design, Interactivity, and Technology, a company focused in development of projects and interactive solutions for physical and digital environments. Her artwork “NeuroBodyGame” presented at File 2010 was finalist at FILE PRIX LUX 2010. Her artwork “BioBodyGame” was presented in 2009 at Itau Cultural. Her artwork “Biocybernetic Relational Object” won the prize Rumos Arte Cibernética granted by Itau Cultural. She has presented her research at several places, such as: ISEA 2011, 2008, and 2002; M-Connect 2010, among others.