Contributors

Prof Kenneth W. Abbott is Professor of Law and Willard H. Pedrick Distinguished Research Scholar in the Sandra Day O’Connor College of Law at Arizona State University, USA. He is a Fellow of the Center for Law, Science and Innovation and the Center for Transnational Law and Regulatory Governance. He is also Professor of Global Studies in the School of Politics and Global Studies. Abbott’s teaching and research focus is on the interdisciplinary study of international law and international relations, including public and private institutions, environmental issues, global health, governance of science and technology, development policy and international trade and economic law.

Dr Robert J. Aitken is Director of Strategic Consulting at the Institute of Occupational Medicine (IOM) in Edinburgh, Scotland, and is Director of the SAFENANO initiative. SAFENANO is one of the UK’s Nanotechnology Centres of Excellence and has the unique remit to interpret and disseminate the emerging health safety and environmental information about nanoparticles to help industry understand and mitigate the potential risks. Aitken’s main scientific interests are in exposure and risk assessment of particles and he has contributed more than 50 publications on these issues. He leads IOM’s work programme on nanotechnology risk which currently encompasses eight major EU FP7 framework projects, a series of major public reviews for government departments in the UK and elsewhere as well as other research or consultancy activities. He leads two projects for the European Commission on integration of nanotechnology issues into the REACH regulations. He sits on the steering committee of NANOfutures, a new European technology platform on nanotechnology and leads the EHS work part of that programme. Aitken is on the advisory board of several industrial, academic and government organizations, including the Institute of Nanotechnology and CEMMNT, he sits on two of the UK Government task forces managing their response to the Royal Society Report. In addition he is Principal UK Expert to ISO 229 WG3, Nanotechnologies: Safety, Health and Environment and a Member of FP7 Nanotechnologies Program Expert Advisory Group. He is an Honorary Fellow of the Institute of Nanotechnology and of Edinburgh Napier University.
**Contributors**

**Dr Jürgen Altmann**, (PhD), is a physicist and peace researcher at Technische Universität Dortmund, Germany. Since 1985 he has studied scientific-technical problems of disarmament, first concerning high-energy laser weapons, then European ballistic-missile defence. An experimental focus is automatic sensor systems for cooperative verification of disarmament and peace agreements. Another focus is assessment of new military technologies and preventive arms control. Major studies have dealt with microsystems technology, nanotechnology and non-lethal weapons. Altmann is a co-founder of the German Research Association for Science, Disarmament and International Security (FONAS) and a deputy speaker of the Working Group on Physics and Disarmament of the Deutsche Physikalische Gesellschaft (DPG).

**Dr Peter Binks** has been Chief Executive Officer at the General Sir John Monash Foundation since September 2009. The Foundation, established in 2001, awards eight scholarships each year to outstanding Australians to pursue postgraduate studies at leading international universities. Through the last decade Binks has been a leading figure in the Australian nanotechnology industry. He has been Chief Executive Officer of Nanotechnology Victoria since 2003, and subsequently of the commercialization company, NanoVentures Australia. He was responsible for managing a budget of close to $A30 million over six years, delivering investment, research, policy and educational outcomes for Victoria, based on nanotechnology. Binks was the 1983 Rhodes Scholar for Tasmania, and completed a PhD in Theoretical Physics at Oxford University, in his research topic modelling the orbits of stars. He has held senior corporate positions with BHP Pty Ltd in Melbourne and San Francisco, CA and Telstra Mobile in Melbourne.

**Dr Hans Bouwmeester** studied biology at the University of Wageningen, the Netherlands, and received his PhD degree in 2002 at the University of Utrecht, the Netherlands. From 2002 onwards he has been working as a (senior) scientist at RIKILT, currently in the group of toxicology and effect analysis. Nanotoxicology is his main field of expertise. He coordinates RIKILT research on health risks of Engineered Nanomaterials in feed and food and is leading several projects on this subject. Dr Bouwmeester is a past member of the CVMP – safety working group of EMEA and of the EFSA working groups on Nanotechnologies and Benchmark Dose Approach in Risk Assessment.

**Dr Diana M. Bowman** holds a PhD in Law and is a Senior Research Fellow in the Centre for Health Policy, Programs and Economics, Melbourne School of Population Health, Melbourne University, Australia, and is a
visiting scholar in the Department of International and European Law, KU Leuven, Belgium. With a background in both science and law, Bowman’s research has primarily focused on legal, regulatory and public health policy dimensions relating to new technologies, with a particular focus on nanotechnologies. In 2007, she co-authored, with Ludlow and Hodge, an Australian government commissioned report analysing the readiness of Australian regulatory frameworks for the introduction of nanotechnologies, and is the co-editor, with Hull, of *Nanotechnology Environmental Health and Safety: Risk, Regulation and Management* (Elsevier, 2010). In 2010 Bowman took up a position as a member of the Australian Government’s National Enabling Technology Strategy’s Expert Forum.

**Dr Jurron Bradley** has a PhD in Chemical Engineering and is a Senior Analyst at Lux Research, Boston, MA, USA, leading the Lux Nanomaterials Intelligence service. He speaks frequently at nanotechnology conferences and has both written and led the development of nanomaterials research including major studies and weekly journals. Before joining Lux Research, Bradley worked at Praxair, Inc., where he designed air separation and argon recycle plants and managed a thermodynamics laboratory. He also led and patented research efforts to reduce mercury emissions from coal-fired boilers and worked on the development of technology to reduce nitrous oxide emissions from coal-fired boilers. He later joined Praxair’s technology planning and strategy group where he worked with the chief technology officer to develop strategic efforts for the entire research and development organization.

**Ms Linda K. Breggin** is a Senior Attorney and Director of the Washington, DC-based Environmental Law Institute’s (ELI) Nanotechnology Initiative. Her work includes research and convening on programmes under several of the major federal environmental laws, including the *Comprehensive Environmental, Response, Compensation, and Liability Act*, the *Clean Water Act*, and *Toxic Substances Control Act*. Prior to joining ELI in 1997, Breggin served as an Associate Director in the White House Office on Environmental Policy and as a Special Assistant to the Assistant Administrator for Enforcement at the US Environmental Protection Agency. She also served as counsel to the Committee on Energy and Commerce, Subcommittee on Transportation and Hazardous Materials of the US House of Representatives. In addition, Breggin was in private practice in Washington, DC.

**Prof Roger Brownsword** is Professor of Law at King’s College London, where he is Director of TELOS (the KCL centre for the study of...
technology, ethics and law in society); he is also an Honorary Professor in Law at the University of Sheffield and a member of the Nuffield Council on Bioethics. In recent years, Brownsword has acted as a special adviser to the House of Lords’ Select Committee on Stem Cell Research and to the House of Commons Science and Technology Committee for its report on hybrids and chimeras. He has some 200 publications, including most recently Rights, Regulation and the Technological Revolution (OUP, 2008) and Regulating Technologies (co-edited with Karen Yeung, Hart, 2008). He is also the founding general editor, with Prof. Somsen, of the journal Law, Innovation and Technology.

Prof Qasim Chaudhry is a Principal Research Scientist at the Food and Environment Research Agency (Fera) of the UK’s Department for Environment, Food and Rural Affairs. He is also a member of the European Commission’s Scientific Committee on Consumer Safety (SCCS), and a Visiting Professor at the University of Chester, England. Chaudhry is a chemist and biochemical toxicologist by training. He is currently leading a team of scientists at Fera who are undertaking research into the safety of nanomaterials to human health and the environment in a variety of products and applications, including food and food packaging. Chaudhry has published a number of research papers, review articles, and study reports on a range of safety and regulatory aspects of nanotechnologies. He is the lead editor of the book Nanotechnologies in Food (RSC Publishing, 2010).

Dr J. Clarence Davies is a political scientist who has been involved in environmental policy for more than 40 years. He is a retired Senior Fellow at Resources for the Future and a Senior Advisor to the Woodrow Wilson Center’s Project on Emerging Technologies. His previous positions include Director of the Center for Risk Management at Resources for the Future, Assistant Administrator for Policy at the US Environmental Protection Agency, Executive Director of the National Commission on the Environment, Executive Vice President of the Conservation Foundation, and Assistant Professor of Public Policy at Princeton University. He has also held positions at Bowdoin College, the US Bureau of the Budget, and the US Council on Environmental Quality. Davies has written several books and numerous articles about environmental policy. He chaired the National Academy of Sciences’ Committee on Decision Making for Chemicals in the Environment and co-authored the reorganization plan that created the Environmental Protection Agency. He has a BA from Dartmouth College and a PhD in American Government from Columbia University. In 2000 he was elected a Fellow of the American Association
for the Advancement of Science for his contributions to the use of science and analysis in environmental policy.

**Dr Thomas K. Epprecht** has a PhD in Biochemistry and is a Risk Expert and Director at the Underwriting Casualty Division, Swiss Re, Zurich, Switzerland. Following an academic curriculum as a researcher and lecturer at the Biochemistry Department of Zurich University in the fields of synthetic protein chemistry and molecular biology, Epprecht worked for two different planning and engineering enterprises, where he provided expertise in environmental risks and industrial hazards of client companies. He then used his academic and industry background to render consultancy for the worldwide Swiss Re underwriting and client management community, by assessing liability risks in various fields of industrial activity and insurance lines of business. In the course of developing risk management and issue management methods for emerging risks Epprecht became responsible for modern technologies such as bio- and nanotechnology. In his current position he provides technical expertise and strategic guidance to ensure the company’s leadership in coping with these emerging technologies. During his career, Epprecht represented Swiss Re on various national and international expert bodies dealing with the business, social and political impacts of novel risks, and has repeatedly served as a reviewer and expert in public hearings. He has authored several Swiss Re publications and publishes regularly in journals and newspapers.

**Dr Robert Falkner** is Senior Lecturer in International Relations at the London School of Economics and Political Science and Associate Fellow of the Energy, Environment and Development Programme at Chatham House, London. He read politics and economics at Munich University and received a doctorate in international relations from Oxford University. He has published widely on international political economy, global environmental politics and risk regulation, including *Business Power and Conflict in International Environmental Politics* (Palgrave Macmillan, 2008) and *The International Politics of Genetically Modified Food: Diplomacy, Trade and Law* (edited, Palgrave Macmillan, 2007). He was the coordinator of the international research project on ‘Regulating Nanotechnologies in the EU and US: Towards Effectiveness and Convergence’.

**Prof Rogério Sá Gaspar** obtained his PhD in Pharmaceutical Sciences from the Catholic University of Louvain, Belgium, in 1991, after graduating as a pharmacist from the University of Coimbra, Portugal. Gaspar is currently Full Professor in Pharmaceutics at the Faculty of Pharmacy at the University of Lisbon and Member of the Coordination Board of
iMed.UL, in which he also coordinates the Nanomedicine and Drug Delivery System research unit. He was also a consultant to the pharmaceutical industry (2002–2008). Early in his career, both at the University of Coimbra and while undertaking his PhD studies at the Catholic University of Louvain, he developed an interest in advanced drug delivery systems. He has continued to work in this area, and has more than 20 years’ experience in the design and evaluation of nanoparticles and liposomes for drug (for example, Leishmaniasis and cancer) and nucleic acid (cytosolic) delivery. His participation in numerous national and European committees, including the European Medicines Agency (1995–2002 and again since 2008), gives Gaspar a unique perspective of both nanomedicines research and development and the regulatory process and he receives frequent invitations for conferences and working groups in Europe, Asia and the US.

**Dr Anna Gergely** is Director EHS Regulatory of the international law firm Steptoe & Johnson LLP, based in Brussels. In a role equivalent to partner, Gergely is the firm’s Principal Scientist, with a PhD in analytical chemistry and quantum chemistry, and is a registered European patent attorney. Her practice covers the well-established legal and regulatory practices of Steptoe in areas of chemicals including the REACH Regulation, agri-biotechnology, biocides, food and feed, food contact materials, medical devices and a range of consumer and industrial products, providing comprehensive capabilities for companies seeking compliance strategies that cover the full range of technical and legal needs. In addition to the above areas, Gergely specializes in nanotechnologies as related to a broad spectrum of industrial sectors. Her involvement in this field ranges from scientific and patent considerations to issues of corporate regulatory compliance and regulatory governance. She has been appointed as a member of the Scientific and Technical Council of the International Risk Governance Council, an independent organization whose purpose is to help the understanding and management of emerging global risks that have impacts on human health and safety, the environment, the economy and society at large. Before joining Steptoe & Johnson, Gergely spent nearly 15 years as scientific and regulatory adviser at other international law firms.

**Dr Antje Grobe** is member of the board of the Swiss-based Risk Dialogue Foundation. Since 2004 she coordinated various stakeholder-dialogues and citizen conferences on nanotechnologies on questions like occupational health, consumer safety, environmental protection, risk assessment and risk communication in Germany, Switzerland and on the European level. Grobe is Lecturer for Professional Skills and Dialogue Management
at Stuttgart University, Germany, and at the University of St. Gallen, Switzerland. She was responsible for several research projects on nanotechnologies such as the German Expert-Delphi on Nanotechnologies on behalf of the German Federal Institute of Risk Assessment in 2006; a 2007–2008 study on nanotechnologies in food and cosmetics on behalf of the International Risk Governance Councils; a perception study ‘Nanotechnology: What Consumers Want to Know’ in 2008 for the German Consumer Associations and the study *NanoMedizin* on behalf of the Friedrich-Ebert-Foundation in 2008. Grobe has been involved with the German government’s NanoKommission since 2006.

**Dr Rolf F. Hertel** studied at the University of Bonn and became Assistant Professor at the Physiological Institute, University of Würzburg, Germany, in 1975. From 1980, he worked as Adviser for the International Programme on Chemical Safety, jointly managed by WHO, ILO, UNEP. In 1992, Hertel was appointed Director and Professor in the German Federal Institute for Health Protection of Consumers and Veterinary Medicine. He worked as German delegate for the OECD’s chemical programme and was Chairman of the steering group on drafting the *Technical Guidance Document on Chemical Risk Assessment for Existing Chemicals* in the European Union. In 1995 he was founding member of the IPCS Steering Group on Concise International Chemical Assessment Documents. From 2004, he was Head of the Divisions on Risk Perception, Early Risk Detection, and Risk and Impact Assessment in the Federal Institute for Risk Assessment. From 2006 he became Chair of the BfR-working group on Nanomaterials, Toxicology and Risk Assessment and became member of the Advisory Board on Risk and Safety for Nanotechnology for the Federal Republic of Germany.

**Prof Graeme A. Hodge** is a Professor of Law and Director of the Monash Centre for Regulatory Studies, Monash University, Melbourne, Australia. He is a leading policy analyst on regulation, privatization and public-private partnerships. Hodge is an internationally recognized scholar, having published nine books and over 100 papers in management, social and economic policy, public administration, and regulation. His most recent book publication (with his Centre colleagues Diana M. Bowman and Karinne Ludlow) was *New Global Frontiers in Regulation: The Age of Nanotechnology* (Edward Elgar, 2007). Hodge has worked with the OECD and the EC as well as serving as a special adviser to several Parliamentary committees and inquiries. He has acted as a consultant on governance matters in Australasia, Europe, Indonesia, Philippines and China. Hodge is a regular media commentator.
Contributors

Dr Michael Holman is a Research Director at Lux Research, Boston, MA, USA. He leads a team of analysts responsible for providing ongoing intelligence and strategic advice to clients in a variety of emerging technology areas, including nanomaterials, solar energy, alternative power and energy storage, water technologies and biosciences. He and his team help clients – Global 500 corporations, leading institutional investors, thoughtful public policy makers – make better strategic decisions. Holman is frequently quoted in the press, and has been cited in publications like The Economist, The Guardian, and Congressional Quarterly on the commercialization of emerging technologies. Holman is also deeply involved in public policy issues around emerging technologies. He is a member of the President’s Council of Advisors on Science and Technology Nanotechnology Technical Advisory Group, and was invited to address policy makers from the US and EU at the Perspectives on the Future of Science and Technology programme. He has helped the US Department of Energy (DOE) organize its Nanomanufacturing for Energy Efficiency Workshop and helped draft a roadmap document for the DOE, guiding hundreds of millions of dollars in spending. Holman has been invited to offer guidance on emerging technology issues by regulatory agencies ranging from the US Food and Drug Administration to the EC Health and Consumer Protection Directorate General.

Mr Nico Jaspers is a Researcher in the International Relations Department at the London School of Economics and Political Science (LSE), where he is conducting a PhD project on comparative dimensions of transatlantic nanotechnologies regulation. He holds degrees in economics from Columbia University, New York, and in economics and international relations from Sciences Po (Institut d’Etudes Politiques), Paris.

Dr Alan D. Jones is one of the UK’s leading experts in issues relating to the health risks from asbestos and other fibres, an area in which he has worked for more than 30 years. He was Head of the Fibres and Physics Group at the Institute of Occupational Medicine (IOM) in Edinburgh, Scotland, until 2006 and is now a Senior Consultant in the IOM’s Strategic Consulting Division. Until November 2006, he led the operation of the UK national Fibre Proficiency Testing scheme for all UK laboratories that evaluate concentrations of airborne asbestos. He is secretary to the UK HSE committees that oversee this work (Committee on Fibre Measurement). He continues to oversee international fibre proficiency testing schemes operated by the IOM. Jones has led a European collaborative project on a new sampling technique for collecting samples for measurement of asbestos concentrations, and is secretary to a health and safety
committee on fibre measurement. Jones recently led an IOM team in drafting a European guide on best practice to prevent or minimize exposure to asbestos and has just completed a project for the European Commission on streamlining the asbestos regulatory framework. He has published over 100 papers and reports, many of them relating to asbestos and other fibres, and he provides expert witness reports on asbestos litigation for both the English and Scottish Courts.

Mr Gerhard Klein studied chemistry and physics at the University of Munich, Germany. He is now Head of the Department of Risk Management at TÜV SÜD Industry Services, Germany, applying the methods of risk analysis and risk assessment to different industrial sectors. The main nanotechnology-related activities of TÜV SÜD are currently focused in the group managed by Klein. The Department of Risk Management were responsible for developing the CENARIOS® system, a certifiable risk management system which is tailored especially for the purposes of nanotechnology. Klein is a member of the German group of ISO TC229 Nanotechnologies and a member of the board of Nanonetze Bayern e.V., a network initiative within the Bavarian Cluster Nanotechnology. He is also a member of the board of the German technology platform of Industrial Safety (DETPIS) and Lecturer at the University of Applied Science, Munich.

Dr Karinne Ludlow is a lawyer and university academic in the Faculty of Law, Monash University, Melbourne, Australia, with a PhD and undergraduate degrees in both science and law. With an ongoing interest in the relationship between law and science, she has both practised and written extensively on the legal issues arising in the commercialization and regulation of scientific discoveries and new technologies, including nanotechnology and biotechnology. In 2007, Ludlow co-authored (with Diana M. Bowman and Graeme A. Hodge) an Australian government commissioned report analysing the readiness of Australian regulatory frameworks for the introduction of nano-products.

Prof Gregory N. Mandel is Associate Dean for Research and Professor of Law at Temple University Beasley School of Law, Philadelphia, USA. He specializes in intellectual property law and the interface among technology, science and the law, with a particular focus on patent, biotechnology, and nanotechnology law. Mandel served on an American Bar Association task force which briefed the Environmental Protection Agency on arising nanotechnology legal issues. Before entering academia, he practised law with Skadden, Arps, Slate, Meagher & Flom LLP, and clerked for Judge
Jerome Farris, United States Court of Appeals for the Ninth Circuit.
Mandel received his JD from Stanford Law School, where he was co-
editor-in-chief of the *Stanford Environmental Law Journal*.

**Prof Gary E. Marchant** is the Lincoln Professor of Emerging Technologies,
Law and Ethics at the Sandra Day O'Connor College of Law at Arizona
State University, USA. He is also a Professor of Life Sciences at ASU and
Executive Director of the ASU Center for Law, Science and Innovation.
Marchant has a PhD in genetics from the University of British Columbia, a
Masters of Public Policy degree from the Kennedy School of Government
and a law degree from Harvard. Marchant teaches and researches in the
subject areas of environmental law, risk assessment and risk management,
genetics and the law, biotechnology law, food and drug law, legal aspects
of nanotechnology, and law, science and technology.

**Prof Andrew D. Maynard** is Director of the Risk Science Center at the
University of Michigan, and the Charles and Rita Professor of Risk
Science in the School of Public Health, University of Michigan, USA. A
leading authority on the safe development and use of emerging nanotechnolo-
gies, he has testified before the US Congress, is a member of the
World Economic Forum Global Agenda Council on the Challenges of
Emerging Technologies, and serves on numerous review and advisory
panels around the world. An author on over 100 scientific papers, reports
and articles, Maynard appears frequently in print and on television and
radio, and writes regularly on science and society at 2020science.org. He is
a graduate of the University of Birmingham, England, and has a PhD in
physics from the University of Cambridge.

**Dr Christoph Meili** (Dr. oec. HSG, Dipl. Natw. ETH) is the Chief
Executive Officer of The Innovation Society, Ltd, St. Gallen, Switzerland,
and Senior Lecturer in Business Administration at the University of St.
Gallen. He studied biotechnology at the Federal Institute of Technology
in Zurich and business administration at the University of St. Gallen,
where he completed his PhD. He was working for several years as a risk
expert for emerging technologies (nano, biotech, pharma) in the insurance
business. At The Innovation Society he is focusing on safety, risk and reg-
ulation issues of nanotechnology. As a risk management and technology
expert he is also a consultant for several insurance and industry clients.

**Dr John Miles** received his PhD in solid state physics from Monash
University in Melbourne, Australia, in 1991. He is a Chief Research
Scientist at the National Measurement Institute of Australia (NMIA),
with more than 25 years’ experience in the fields of high-level dimensional, engineering and mechanical measurements. Miles manages NMIA’s nano-metrology programme and Melbourne Physical Metrology Laboratory, is Chairman of Standards Australia Technical Committee NT-001 on nanotechnology and Australia’s Head of Delegation to ISO TC229 Nanotechnologies.

Ms Georgia Miller has coordinated the Friends of the Earth Australia Nanotechnology Project since 2005. Miller is particularly interested in supporting greater public involvement in science and innovation policy and in making technology development more responsive to social and environmental needs.

Prof Alfred Nordmann, after receiving his PhD in Hamburg, Germany (1986) and serving on the faculty of the Philosophy Department at the University of South Carolina, USA, became Professor of Philosophy and History of Science at Darmstadt Technical University, Germany. His current focus is on the development of a comprehensive philosophy of technoscience that reflects different cultures of research and the changing relationship of science, technology, nature and society. Since 2000 Nordmann has been studying philosophical and societal dimensions of nanoscience and converging technologies. With Davis Baird and Joachim Schummer he edited Discovering the Nanoscale (IOS Press, 2004); with Joachim Schummer and Astrid Schwarz Nanotechnologien im Kontext (Akademische Verlagsanstalt, 2006); and with Stefan Gammel and Andreas Lösch Jenseits von Regulierung: Zum politischen Umgang mit der Nanotechnologie [Beyond Regulation: On the Political Governance of Nanotechnology] (Akademische Verlagsanstalt, 2009), and with Martin Carrier Science in the Context of Application (Springer, 2010).

Mr John Pendergrass is a Senior Attorney and Co-Director of International Programs at the Environmental Law Institute. He studied Environmental Science at Michigan State University, USA, and received his law degree from Case Western Reserve University, USA. He has authored numerous book chapters and articles on environmental law and policy, international environmental law, and natural resources law, including Where Does the Nano Go?: End-of-Life Regulation of Nanotechnologies (with Linda K. Breggin, Project on Emerging Nanotechnologies, 2007).

Ms Sheona A.K. Peters is a Research Assistant at the Institute of Occupational Medicine (IOM) in Edinburgh, Scotland. In this role, she provides scientific support to IOM’s research and consultancy activities.
in the key areas of nanotechnology, REACH and chemical risk management. Peters is contributing to the continued development of the information services component of the SAFENANO Initiative, the UK’s premier resource on nanotechnology health and safety, for which she is now Associate Editor. Peters was a co-author on a recent EU FP7-funded report, ENRHEES Engineered Nanoparticles – Review of Health and Environmental Safety, and is at present playing a key role in FP7 project NANEX, on the development of exposure scenarios for manufactured nanomaterials, and JRC-funded projects REACH-NanoInfo and REACH-NanoHazEx. In addition, Peters manages the IOM’s international proficiency testing scheme AFRICA (Asbestos Fibre Regular Informal Counting Arrangement) and has contributed towards an EC-funded project to aid streamlining of the European environmental asbestos directive.

Mr Read Porter is an attorney and Director of the Invasive Species Program at the Environmental Law Institute (ELI). He received a degree in geology from Amherst College, USA, prior to attending Harvard Law School. Prior to joining ELI, Porter served as a law clerk with the Honorable Julia Smith Gibbons on the United States Court of Appeals for the Sixth Circuit and served as Editor in Chief of the Harvad Environmental Law Review. At ELI, he has published numerous reports and papers on nanotechnology, biodiversity and marine issues, including Application of the Toxics Release Inventory to Nanomaterials (with Linda K. Breggin, Project on Emerging Nanotechnologies, 2008).

Prof Ortwin Renn serves as full professor and chair of environmental sociology at Stuttgart University, Germany. He directs the Interdisciplinary Research Unit for Risk Governance and Sustainable Technology Development at the University of Stuttgart and the non-profit company DIALOGIK, a research institute for the investigation of communication and participation processes in environmental policy making. Since 2006 Renn has been Deputy Dean of the Economics and Social Science Department and Acting Director of the Institute of Social Sciences at the University of Stuttgart. He has a doctoral degree in sociology and social psychology from the University of Cologne, Germany. His career includes teaching and research positions at the Julich Nuclear Research Center, Germany; Clark University, Worcester, MA, USA; the Swiss Institute of Technology, Zurich; and the Center of Technology Assessment, Stuttgart, Germany. His honours include an honorary doctorate from the Swiss Institute of Technology in Zurich, and the ‘Distinguished Achievement Award’ of the Society for Risk Analysis (SRA). Renn is primarily interested
in risk governance, political participation and technology assessment. He has published more than 30 books and 250 articles, most recently the monograph *Risk Governance* (Earthscan, 2008).

**Dr Gyorgy Scrinis** is an honorary fellow in the School of Philosophy, Anthropology and Social Inquiry at the University of Melbourne, Australia. He completed his PhD in History and Philosophy of Science at the University of Melbourne, Australia. His research focuses on the ways the technosciences shape structural, cultural and ecological relations, particularly across the food system. His publications have addressed the issues surrounding the introduction of genetically modified foods and nano-foods, and a critique of the ideology of nutritionism – or nutritional reductionism – within nutrition science. He is currently working on a book on nutritionism.

**Prof Vicki Stone** is Director of the Nanosafety Centre, Heriot-Watt University, Edinburgh, Scotland, Director of Toxicology for SAFENANO, and Editor-in-Chief of the journal *Nanotoxicology*. Stone has published over 70 publications, and receives funding from research councils (NERC and EPSRC), the European Commission (ENRHES, ENPRA, InLiveTox and NanoImpactNet), charities (The Colt Foundation), the UK Government (Defra) and industry (Unilever). She is chair of the British Toxicology Society Speciality Section on Nanotoxicology and a committee member for both the International Council on Nanotechnology (ICON), and the UK Government Committee on the Medical Effects of Air Pollution.

**Prof Douglas J. Sylvester** publishes, teaches and lectures on issues of intellectual property law and commercialization, international law, emerging technologies and privacy. He is the author of more than 20 law review articles, book chapters, and books on a myriad legal issues. In 2006, he co-taught Nanotechnology Law and Policy with professors Gary Marchant and Kenneth Abbott, the first time such a course was offered in the US by a full-time law faculty. As Associate Dean of the Sandra Day O’Connor College of Law of Arizona State University, USA, he is responsible for building an environment that fosters faculty scholarship, organizing speaker series, mentoring junior faculty, and seeking innovative ways to increase the faculty’s visibility. In 2007, Sylvester was appointed Special Consultant to a National Academy of Sciences panel, charged with reforming the US Census. He was the founding Faculty Director of the innovative Technology Ventures Clinic, which introduces students to transactional legal practice in high-technology sectors. He
has been an expert witness in cases involving licensing, intellectual property and technology. Prior to joining the college faculty, Sylvester was a Bigelow Fellow and Lecturer-in-Law at the University of Chicago, USA, a Lecturer-in-Law at Northwestern University, USA, an attorney in the Global e-Commerce Practice Group at Baker & McKenzie in Chicago, and clerked for US District Judge C. Clyde Atkins in Florida.

Mr Oliver Tassinari is an Analyst at Lux Research, based in Boston, MA, USA. He is currently a member of the nanomaterials team assisting clients with strategic decisions on emerging nanomaterials and nano-enabled products. Previously, Tassinari worked on the alternative power and energy storage team, performing research and analysis on technologies including batteries, capacitors, fuel cells and demand response. He was the lead author of the Lux Research report *Graphene: Near-term Opportunities and Long-term Ambitions* and has contributed to other reports covering several topics, from forecasting the nanotechnology market, to assessing the financing landscape of energy storage technologies. Prior to working for Lux, Tassinari worked at Brigham and Women’s Hospital and Harvard Medical School, where he conducted molecular and computational biology research focusing on proteomic biomarker discovery in collaboration with the nanotechnology start-up Inanovate, Inc. Tassinari specifically worked on the development of a multi-biomarker diagnostic assay for prostate cancer. Tassinari holds a B.S. in Biological and Environmental Engineering from Cornell University, USA.

Prof Chris Toumey is a cultural anthropologist who works in the anthropology of science, with special attention to the cultural dynamics of public scientific controversies. He holds a PhD from the University of North Carolina, USA. After his ethnographic work on the creation-evolution controversy, represented by his book *God’s Own Scientists* (Rutgers University Press, 1994), he offered a general theory of meanings and symbols in public scientific controversies in *Conjuring Science* (Rutgers University Press, 1996). More recently he has turned to the question of societal issues in nanotechnology, with more than 40 articles on this topic.

Prof Geert van Calster is a graduate of the College of Europe, Bruges, Belgium. He is the head of K.U. Leuven’s (KUL) Department of European and International Law, in the Faculty of Law. He is also director of Leuven’s Centre for Advanced Legal Studies, Director of Studies for the Master degree programme on Energy and Environmental Law, and of the Master of Laws programme at KUL. He is a tenured chair of the Research
Fund, KUL and a Visiting Professor at the China-EU School of Law in Beijing. He is a Visiting Professor at Monash University, Melbourne, Australia and a visiting lecturer at Oxford University (2006–2009). He practises law at the Brussels bar, with DLA Piper, having previously worked from the London offices of a major international law firm.

**Mr Thorsten Weidl** studied physics at the Technical University of Munich, Germany. He is now Senior Expert for Risk Assessment and Risk Management Systems in the Department of Risk Management at TÜV SÜD Industrie Service GmbH, Germany. Weidl has long-term experience of risk analysis and risk management in very different industries, which are documented in a long track record of publications. He developed a new and innovative solution for risk analysis called HazardPro, a method also used in the development of the risk management system CENARIOS®. Weidl was the responsible project manager on the part of TÜV in the latter project, which was performed together with The Innovation Society, St. Gallen, Switzerland. He was also the responsible project leader of the Innovation Project Nanotechnology, which was initiated at TÜV SÜD to develop services in the field of nanotechnology for the industry.

**Mr Markus Widmer** (M.Sc. Env. Sc. ETH) is head of the competence centre for nanotechnology research and risk management at The Innovation Society, St. Gallen, Switzerland. He studied environmental sciences at the Swiss Federal Institute of Technology (ETH) in Zurich. After research work in the field of exhaust gas after treatment at the Paul Scherrer Institute (PSI), Switzerland, and energy consumption modelling at ETH at The Innovation Society he is now in charge of the CENARIOS® 360° Risk Monitoring System and the FP7 research projects. He is co-author of various publications and reports and manages the monthly nanotechnology newsletter and the information database on safety, risk and regulation of nanotechnologies.

**Prof David Williams** was trained as a materials scientist at the University of Birmingham, England (BSc 1965, PhD 1969, DSs. 1982). In 1968 he took up a faculty position in the School of Medicine at the University of Liverpool, England, where he remained for 40 years, writing, researching and teaching on the science of biomaterials. He created the Department of Clinical Engineering in the university and was its head for 20 years. Williams is the Editor-in-Chief of *Biomaterials*, now the leading journal in the field of biomaterials science. During his research career he has published over 30 books, including the first textbook in this area, *Implants in Surgery*, and the *Williams Dictionary of Biomaterials*, and around 400...
Contributors  xxiii

papers. He has presented keynote and plenary lectures at conferences in over 30 countries. Williams has received major awards from Societies of biomaterials in the US (Clemson Award, 1982; Founders Award, 2007), Europe (George Winter Award, 1996), UK (Presidents Award, 2004; Chapman Medal of the Institute of Materials, 2007), and India (Sharma Award, 2008). He was a scientific adviser to the European Commission and wrote many opinions, on which European laws in health technology and nanotechnology are based. In 1999 he was elected as a Fellow of the Royal Academy of Engineering in recognition of his contributions to engineering in medicine.

Dr Rolf Zöllner studied occupational and organizational psychology at the Catholic University of Eichstätt, Germany, and graduated in mechanical engineering at the University of Technical Engineering in Munich, Germany. He is now consultant in the Department of Risk Management at TÜV SÜD Industry Services, Germany. His tasks are applying methods of risk analysis and risk assessment to different industrial sectors concerning processes as well as products. Zöllner’s activities in nanotechnology are on applying suitable risk management processes for customers. Currently, his main activities in nanotechnology are focused on approaches to product certification and appropriate quality assurance processes for the special requirements of nanotechnology.