Contributors

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**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.

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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
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**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
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**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
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**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.
**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.

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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 Nanonet 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
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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).

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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
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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
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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, DScs. 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
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.