List of Contributors

Anna Bergek is an Associate Professor in the Department of Management and Engineering, Linköping University, Sweden. She received a PhD in technology management from Chalmers University of Technology, Göteborg, Sweden in 2002, served on a government commission on energy research 2002-03 and was an assistant professor at Linköping University 2003-08. Dr Bergek's research interests include innovation and industry dynamics, especially the emergence of new industries and the renewal of mature industries following technological discontinuities, with implications for firm strategy and innovation policy. Particular issues of concern are external knowledge sourcing in R&D and innovation, the evolution of technological innovation systems, renewable energy technology and complex product systems.

Patries Boekholt is Director of the Technopolis Group (Amsterdam office). She holds an MA in political science (1987) from the Catholic University of Nijmegen, and a PhD (1995) from Aston Business School, UK, with a thesis on innovation policy in the European Community: reorienting towards diffusion. She has worked on science, technology and innovation policy for over 15 years. Activities include international benchmark and policy studies, strategic advice and evaluations of research programmes and institutions. Dr Boekholt has worked in many European countries and for several international organizations such as the European Commission, OECD and UNIDO. Before joining Technopolis she worked as senior consultant at the TNO Centre for Science and Technology Policy Studies, The Netherlands.

Knut Blind is Professor of Innovation Economics, Berlin University of Technology, Germany. He also heads the Competence Center for Regulation and Innovation of the Fraunhofer Institute for Systems and Innovation Research and is Professor of Standardisation at the Rotterdam School of Management, Erasmus University, The Netherlands. He studied economics at the University of Freiburg, Germany, and Brock University, Canada. Prof. Blind has published widely on the interface between regulation and innovation, with a focus on IPR regimes and standardization. He is author of The Economics of Standards: Theory, Evidence, Policy (Edward Elgar, 2004).

Bo Carlsson is Frank Tracy Carlton Professor of Economics at the Weatherhead School of Management at Case Western Reserve University in Cleveland, Ohio, where he also directs the Executive Doctor of Management Program. He received his BA in economics from Harvard College and his PhD in economics from Stanford University. From 1972 to 1984 he was a Research Associate and for five years
Associate Director of the Industrial Institute for Economic and Social Research (IUI) in Stockholm, Sweden. Prof. Carlsson has published over 20 books and numerous articles on industrial economics, small business and entrepreneurship, technological change and industrial policy. His current research interests include the digital economy, entrepreneurship, technology transfer, intellectual property management, and the nature and role of technological innovation systems in economic growth.

Cristina Chaminade is an Associate Professor in innovation studies at the Centre for Innovation, Research and Competence in the Learning Economy (CIRCLE), Lund University, Sweden. She received a PhD in economics from the Autonomous University of Madrid, Spain. Dr Chaminade is also affiliated with LEAP4D (Learning Economy Analysis for Development) at the Research Policy Institute, Sweden, and is a visiting professor at the HHL Leipzig Graduate School of Management, Germany. Her research focuses on understanding innovation and knowledge creation in the globalized learning economy and on innovation systems policy. She is coordinating several projects on globalization of innovation in China, India, South Africa and Central America. Dr Chaminade has authored numerous articles, book chapters and books in the fields of innovation systems and innovation system policy, particularly for developing countries.

Susan E. Cozzens is Professor of Public Policy and Associate Dean for Research, Ivan Allen College, Georgia Institute of Technology, Atlanta, USA. She holds a PhD from Columbia University and a BS from Michigan State University. Prof. Cozzens has been active in science, technology, and innovation policy for 30 years, as researcher and practitioner. She has been Director of the Office of Policy Support at the National Science Foundation and edited two major journals in the field. Her research is on STI and inequalities, including projects on international collaboration in biofuels; distributional consequences of emerging technologies; nanotechnology, equity, and development; and water and sanitation in developing countries.

Ben Dankbaar is Professor of Business Administration at the Nijmegen School of Management of the Radboud University Nijmegen, The Netherlands, where he also holds a Chair in Management and Technology in the Faculty of Science. He studied economics and social sciences at the University of Amsterdam and has a PhD in economics from the University of Maastricht. Earlier he worked with the University of Amsterdam, the Science Centre Berlin (Germany) and the Maastricht Economic Research Institute on Innovation and Technology (MERIT), University of Maastricht. Prof. Dankbaar is an expert on the automobile industry and has been involved in studies of strategic issues in the industry since the early 1980s. He has published extensively on issues of technology and work organization, organization design, innovation management and innovation policy. His current work is concerned with radical innovation and industry-university collaboration in a range of industries.
Jakob Edler is Professor of Innovation Policy and Strategy, and Research Director at the Manchester Institute of Innovation Research, Manchester Business School, University of Manchester, UK. He holds a PhD (1999) from the University of Mannheim, Germany, and Masters degrees from the University of Mannheim and Dartmouth College, USA. Until 2007, he headed the Department for Innovation Systems and Policy at the Fraunhofer Institute for Systems and Innovation Research, Germany. Prof. Edler has written widely on public and private research and innovation strategies and policies, and on the analysis of dynamics in innovation systems. His publications include Software Patents: Economic Impacts and Policy Implications (Edward Elgar, 2005, with M. Friedewald and K. Blind) and Changing Governance of Research and Technology Policy: The European Research Area (Edward Elgar, 2003, with S. Kuhlmann and M. Behrens).

Charles Edquist holds the Ruben Rausing Chair in Innovation (since 2003) and is Director, Centre for Innovation, Research and Competence in the Learning Economy (CIRCLE), at Lund University, Sweden. He received his Docent PhD (1981) in economic history from the University of Lund, Sweden and his Habilitation (1985) in economic history from Umeå University, Sweden. He also holds an MA in economics (1974) from the University of California, Berkeley, USA. From 1986 to 2003, he was Professor in the Department of Technology and Social Change, Linköping University, Sweden. Prof. Edquist has published extensively on the comparison of innovation systems, innovation policy and systems of innovation, including Systems of Innovation: Technologies, Institutions and Organizations (Pinter Publishers/Cassell Academic, 1997).

Lennart Elg is an analyst with the Strategy Development Division of the Swedish Agency for Innovation Systems (VINNOVA). He is also a member of the Swedish delegation to the OECD/CSTP and the Swedish representative in the OECD/CSTP/TIP group. Mr Elg's fields of expertise include innovation and technology policy analysis, research on innovation and technology policy, and technology foresight.

Stuart J.H. Graham is an Assistant Professor of Strategic Management, College of Management, Georgia Institute of Technology and Kauffman Foundation Fellow, Berkeley Center for Law and Technology, University of California, Berkeley School of Law. He received his PhD in business economics from the University of California, Berkeley, and holds advanced degrees in law (JD) and business (MBA). Dr Graham's fields of interest include firm intellectual property strategies, intellectual property transactions and markets for technology, technology entrepreneurship and the legal environment. A selection of his recent publications includes 'Why do Start-ups Patent?' in the Berkeley Technology Law Journal (with T. Sichelman); 'Beyond Patents: The Roles of Copyrights, Trademarks, and Trade Secrets in Technology Commercialization' in Advances in the Study of Entrepreneurship, Innovation, and

David H. Guston is Professor of Political Science and Co-Director of the Consortium for Science, Policy and Outcomes at Arizona State University, where he also directs the Center for Nanotechnology in Society at ASU. He has published widely on R&D policy, technology assessment and public participation in science and technology; his Between Politics and Science (Cambridge University Press, 2000) was awarded the 2002 Don K. Price Prize by the American Political Science Association for best book in science and technology policy. Prof. Guston is the series editor of the Yearbook of Nanotechnology in Society (Springer) and the general editor of a two-volume Encyclopedia of Nanoscience and Society (Sage, 2010). He is the North American editor of Science and Public Policy. He holds a BA from Yale and a PhD from MIT.

Marko Hekkert is Professor of Dynamics of Innovation Systems and Research Director of the Department of Innovation and Environmental Sciences, Copernicus Institute, Utrecht University, The Netherlands. He has a background in chemistry (MSc 1995) and energy and material systems modelling (PhD 2000). Prof. Hekkert’s research focus on the transition to a sustainable energy system, uncertainties in energy transitions and energy innovation systems.

Pim den Hertog is a founding partner of Dialogic Innovation & Interaction, a research-based consultancy with specializations in innovation (measurement, strategic advice and policy studies), broadband/content industries, E-government and demand steering/user involvement in innovation. He is currently seconded to the Amsterdam Academic Centre for Service Innovation (AMSI) at the Amsterdam Business School. Mr den Hertog graduated in economic geography from Utrecht University. While at TNO Strategy, Technology and Policy (1990-98), he began working on service innovation, which has developed into one of his major research interests. His interests also include research and advice on innovation systems and their governance, cluster studies, innovation policies and evaluation of policy schemes.

Staffan Jacobsson is Professor in Science and Technology Policy at Chalmers University of Technology, Sweden. He holds a BA from the University of Lund, Sweden (1977) and a DPhil in economics from the University of Sussex, UK (1985). He was appointed as an Assistant Professor at Chalmers in 1987 and received his professorial appointment in 1998. Prof. Jacobsson’s research initially focused on industrialization issues in newly industrializing countries where he studied the development of a capital goods sector. His current research focuses on developing a conceptual framework for studying large-scale industrial transformation processes.
policy issues related to the transformation to a sustainable energy sector, and science policy.

Stefan Kuhlmann is Professor and Chair of the Department of Science, Technology, and Policy Studies (STePS) at the University of Twente, The Netherlands. He received his PhD (Dr. rer.pol., 1986) and Habilitation (1998) from University of Kassel, Germany. He has worked at the University of Kassel (1979-88), the Fraunhofer Institute for Systems and Innovation Research, Karlsruhe (1988-2006), and the University of Utrecht (2001-06). Prof. Kuhlmann’s research interests include research and technological innovation as social and political processes, with a focus on the governance of science, research and innovation systems and policies. He has published extensively in this field. Prof. Kuhlmann is a co-editor of Research Policy, and an editor (with P. Shapira) of Learning from Science and Technology Policy Evaluation: Experiences from the United States and Europe (Edward Elgar, 2003) and (with J. Edler and M. Behrens) Changing Governance of Research and Technology Policy – the European Research Area (Edward Elgar, 2003).

Ben R. Martin is Professor of Science and Technology Policy Studies at SPRU (Science and Technology Policy Research) at the University of Sussex, UK, and former Director of SPRU (1997 to 2004). He has carried out research for 30 years in the field of science policy, helping to establish techniques for the evaluation of research, and pioneering the notion of foresight as a tool for looking into the longer-term future of science and technology. Prof. Martin has published seven books and 50 journal articles. He is an editor of Research Policy, and the 1997 winner of the Derek de Solla Price Medal for Science Studies.

Rutger van Merkerk works at the University Medical Centre in Utrecht, The Netherlands, where his current activities focus on translating innovative ideas into commercially available products and services. He holds a PhD from the Department of Innovation and Environmental Sciences at Utrecht University, The Netherlands (2007). His research was on constructive technology assessment of emerging technologies and nanotechnology in particular. Dr van Merkerk’s interests also include characterizing emerging technologies and anticipating prospective technological developments.

Jordi Molas-Gallart is Research Professor at the Spanish Council for Scientific Research (CSIC). He works at INGENIO, a joint research centre of CSIC and the Universitat Politècnica de València. He holds a Licenciatura in economics from the Universitat Autònoma de Barcelona, the MA in international relations from the School of Advanced International Studies of the Johns Hopkins University, and a DPhil from SPRU at the University of Sussex. Prof. Molas Gallart was a Fellow in the Department of Politics of the University of Glasgow (1989-91) and worked at SPRU between 1991 and 2005, first as a Research Fellow, and afterwards as a Senior
Fellow and a Senior Lecturer. His research focuses on the on the study of innovation in the defence and aerospace industries and the evaluation of science, technology and innovation policies.

Daniel Sarewitz is Professor of Science and Society, and Co-Director of the Consortium for Science, Policy, and Outcomes, at Arizona State University, USA. He holds a PhD in geological sciences from Cornell University (1986). From 1989 to 1993 he worked on Capitol Hill, first as a Congressional Science Fellow, and then as science consultant to the House of Representatives Committee on Science, Space, and Technology. Prof. Sarewitz's research focuses on the societal outcomes of science and technology policies. He is co-editor (with A. Lightman and C. Desser) of *Living with the Genie: Essays on Technology and the Quest for Human Mastery* (Island Press, 2003). He is also the co-editor of *Prediction: Science, Decision-Making, and the Future of Nature* (Island Press, 2000) and the author of *Frontiers of Illusion: Science, Technology, and the Politics of Progress* (Temple University Press, 1996).

Philip Shapira is Professor of Innovation, Management and Policy at the Manchester Institute of Innovation Research, Manchester Business School, University of Manchester, UK; and Professor of Public Policy at Georgia Institute of Technology, Atlanta, USA. He holds a PhD in city and regional planning and an MA in economics from the University of California, Berkeley, USA, as well as an MCP from the Massachusetts Institute of Technology, and a DipTP from Gloucestershire College of Art and Design. He served as a Congressional Fellow and analyst with the Office of Technology Assessment, United States Congress (1986-88). Prof. Shapira's research interests include science, technology and innovation management and policy; industry analysis; regional innovation; R&D and knowledge measurement; and policy evaluation. He has authored or co-authored numerous articles on science, technology, innovation and development topics, including in *Research Policy*, the *Journal of Technology Transfer*, the *International Journal of Technology Management*, *Scientometrics*, and other leading journals. Prof. Shapira is a Fellow of the Royal Society of Arts.

Keith Smith is Head of Science and Innovation Analysis for the UK Department of Innovation, Universities and Skills, and Professor of Innovation, Australian Innovation Research Centre. Previously, he was Professor at the Institute for New Technologies, United Nations University, The Netherlands (2001-03); Professor of Economics of Technology at the Norwegian University of Science and Technology (1995-2001); and Director of the Group for Studies in Technology, Innovation and Economic Policy (STEP) in Oslo (1991-2000). He has also worked with the European Commission at the Joint Research Centre in Seville, Spain, on policy issues related to the European Research Area. Prof. Smith has widely published on the nature and dynamics of innovation processes, on innovation systems theories, on innovation in low-technology industries, innovation and growth in resource-
based economies, the development and analysis of innovation indicators, and on the foundations of public policies supporting innovation.

**Ruud Smits** is Professor of Governance of Innovation Systems and Chair of the Innovation Studies Group of the University of Utrecht, The Netherlands (since 1999). He studied physics at the University of Eindhoven (1972) and trained in system dynamics at the Massachusetts Institute of Technology and Dartmouth College. He received his PhD (1991) in Technology Assessment and Technology Policy from Amsterdam Free University. He spent the earlier part of his career with the TNO-Centre for Technology and Policy Studies, serving as its director (1988-96). Prof. Smits focuses his work on the management of innovation processes, the development of user-oriented types of innovation policy and management, technology assessment and the development of instruments to facilitate participation of relevant actors in decision-making processes on innovation, and on the dynamics of innovation systems.

**Morris Teubal** is Professor of Economics, Hebrew University, Jerusalem, Israel. His PhD in economics (1967) is from the University of Chicago on inflation and economic growth (1967). His research interests include economic growth processes, technological change, technology infrastructure policy, and the evolution of national systems of innovation (particularly Israel’s). Prof. Teubal has written on a range of technology and innovation topics, including market-building policies: a framework for research, technology and innovation policies for Europe and for NICs; the formulation of an R&D policy for Israel; and high-tech start-ups and venture capital: evolutionary and systemic perspectives.

**Geert Vissers** is a Research Fellow in ISIS, the Institute for Science, Innovation, and Society of Radboud University Nijmegen, Faculty of Science, The Netherlands. He studied sociology at Nijmegen University, and obtained a PhD in business science from Erasmus University Rotterdam. Dr. Vissers is involved in Micord, a research program focusing on university-industry research collaboration in three sectors (agrofood, chemicals, and machinery and equipment); and in Eurodite, a European research project investigating the contribution of firm and territorial knowledge dynamics to regional development. He has published on simulation gaming in the contexts of organizational strategy development and policy evaluation, creativity in multidisciplinary teams, the knowledge economy, and virtual collaboration.