



HIGH TECH REGIONS 2.0: SUSTAINABILITY AND REINVENTION

November 13-14, 2006
Stauffer Auditorium
The Hoover Institution on War, Revolution and Peace
Stanford University

Co-sponsored and co-hosted by:

Stanford Project on Regions of Innovation and Entrepreneurship (SPRIE)
Industrial Technology Research Institute (ITRI)

Also co-sponsored by:

School of Technology Management, National Tsing Hua University



STANFORD PROJECT ON REGIONS OF
INNOVATION AND ENTREPRENEURSHIP
THE WALTER H. SHORENSTEIN ASIA-PACIFIC RESEARCH CENTER



MONDAY, NOVEMBER 13 (CONTINUED)

1:00 – 2:30 p.m. Session 3: Regional Case Studies I—Silicon Valley & Taiwan

MODERATOR: CAO CONG

COMMENTATOR: ALFONSO GAMBARDELLA

Silicon Valley 2.0: Next Stage for a Global Center for Creativity and Innovation

Doug Henton (President, Collaborative Economics)

The Cluster Development, Linkage, and Global Competitiveness of the Hsinchu Science Park

Chyi Yih-luan (Professor, National Tsing Hua University)

***Hwang Chun-Hsin** (Associate Professor, National Tsing Hua University)

Globalization and the Evolution and Reinvention of Industrial Clusters: The Case of Hsin-chun Science-based Industrial Park

Chen Hsin-Horng (Director, International Division, Chung-Hua Institution for Economic Research (CIER), Taiwan)

***Liu Meng-chun** (Deputy Director China Division, CIER, Taiwan)

***Pam Wen** (Associate Research Fellow, CIER, Taiwan)

2:30 – 3:45 p.m. Session 4: Industry Panel on Biotechnology

MODERATOR: MARGUERITE HANCOCK

Matthew M. Gardner, President, BayBio

Christian S. Eversull, M.D., Chief Medical Officer and Founder, Acumen Medical, Inc.

3:45 – 4:00 p.m.

Break

4:00 – 5:00 p.m. Session 5: Regional Case Studies I (cont.)—Taiwan

MODERATOR: ZONG-TAE BAE

COMMENTATOR: DIETER ERNST

Developing Innovative Knowledge-Intensive Service Activities for Industry Cluster Sustainability: The Case of Hsinchu Taiwan Cluster

Wang Kung (Professor and Director, Graduate Institution of Industrial Economics, National Central University, Taiwan)

The Formation of Cross-border High-tech Regions: Industrial-system Building and Institutional Innovation

Lee Chuan-Kai (Assistant Professor, Department of Urban Planning, National Cheng-Kung University, Taiwan)

6:00 p.m.

Workshop dinner

California Cafe, 700 Welch Road (Stanford Barn), Palo Alto 650.325.2233

* *Co-authors with an asterisk will not be attending the workshop*

TUESDAY, NOVEMBER 14

9:00 – 10:30 a.m. Session 6: Regional Case Studies II—China and Korea

MODERATOR: ROLF STERNBERG

COMMENTATOR: SHIH CHINTAY

Development and Sustainability of Regions of Innovation in China: Comparing Shanghai, Beijing and Shenzhen

Doug Fuller (Ass't Professor, School of International Service, American University)

“Growing Pains” or “Premature Senility”? Zhongguancun and China’s High Tech Parks in Transition

Cao Cong (Senior Research Associate, Levin Graduate Institute of International Relations and Commerce, SUNY)

Reinventing Daedeok Innopolis: Analysis and Challenges of Regional Innovation System in Korea

Zong-Tae Bae (Professor, Korea Advanced Institute of Science and Technology)

10:30 – 10:45 a.m.

Break

10:45 – 12:15 p.m. Session 7: Industry Panel on Nanotechnology

MODERATOR: WILLIAM MILLER

David Aslin, Director, 3i

Pankaj Dhingra, President and CEO, Nanostellar, Inc.

Samuel S. Mao, Assistant Adjunct Professor, Department of Mechanical Engineering, University of California at Berkeley

12:15 – 1:30 p.m.

Lunch

1:30 – 3:00 p.m. Session 8: Focus on Innovation

MODERATOR: FRANK TAN

COMMENTATOR: DAN BREZNITZ

Explorative Innovation Strategy: the Role of Corporate R&D in Taiwan

Shih Chintay (Dean, School of Technology Management, National Tsing Hua University, Taiwan)

***Chang Yuan-chieh** (Associate Professor, National Tsing Hua University, Taiwan)

Oliver Hung (Researcher, Industrial Economics and Knowledge Center, Industrial Technology Research Institute (IEK/ITRI), Taiwan)

Wei Yi-Ling (Industrial Researcher, IEK/ITRI, Taiwan)

Upgrading through Innovation in a Small Network Economy: Insights from Taiwan’s IT Industry

Dieter Ernst (Senior Professorial Fellow, East-West Center, Hawaii)

High Tech Regions in China: Pathways to Technology Diffusion or Centers of Increasing Technology Concentration?

Gary Jefferson (Professor and Chair, Economics Department, Brandeis University)

3:00 – 4:00 p.m. Session 9 Synthesis and Discussion

MODERATORS: HARRY ROWEN, JACK C. CHANG, SHIH CHINTAY

5:00 – 6:30 p.m. A First Look at Making IT: Asia’s Rise in High Tech

Schwab Residential Center, Mid Vidalakis Dining Room

Food and refreshments served

* *Co-authors with an asterisk will not be attending the workshop*

HOTEL INFORMATION

Stanford Terrace Inn
531 Stanford Avenue
Palo Alto, CA 94306
800.729.0332
650.857.0343 (fax)

Internet-ready rooms; bring your laptops
Year-round heated exterior pool
Continental breakfast with waffle bar

SPRIE contact information Sunday 11/12 to Tuesday 11/14:
George Krompacky
Program Coordinator
650.704.3157 (cell)



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About the Participants

David Aslin is a Venture Partner at 3i Technology Partners, Menlo Park, California. David joined 3i in 1998 after a 20-year general management and C-level career in technology companies including Hewlett Packard (now Agilent), Applied Biosystems and Malvern Instruments, where he was CEO of this global nano-instrumentation market leader. His career is characterized by the creation of new technology businesses, including the transfer of a nanoscale materials technology for environmental and industrial analysis from a University lab to a small technology company and scaling this into a substantial standalone business; today this is a division of Thermo Corp (NYSE: TMO). While COO at Richtec (now L-3 Communications; NYSE: LLL), a venture-backed private group of technology companies, he created and led a start-up in satellite communications, subsequently sold to EMS (NASDAQ: EMLG). Overall, David's experience is in cleantech, materials, communications and instrumentation sectors in European, US and Asian markets.

As a Partner in 3i's US funds since 2000, he has pioneered the early stage investment practice on the west coast. Aslin led 3i's investments in first VC rounds at Discera, Frame Photonics, Nanostellar, Precision IO and Triage Wireless; and led 3i Series B investments in AOptix, Bitfone and Kineto Wireless. He serves on the boards of all his investments. For several years, Aslin's primary investment interests have been in the cleantech and materials sectors; he especially seeks cross- and multi-disciplinary technology propositions that address significant problems in the environment and industrial processes.

Aslin's education is in Chemistry (MS in Analytical Chemistry from Imperial College, London; BS from University of Wales); Electronics (BS studies at Thames Valley University) and Business from top European schools: Warwick Business School (CBA); INSEAD (MSIB); IMD (Managing a Service Business); and London Business School (HP's General Manager development program). He is recognized as a Chartered Chemist by Her Majesty Queen Elizabeth II; and is an elected member of the Royal Society of Chemistry and the Institute of Directors.

Zong-tae Bae is Professor of Innovation and Entrepreneurial Management at the Graduate School of Management, Korea Advanced Institute of Science and Technology (KAIST). Bae received his BS in Industrial Engineering from Seoul National University and his MS and PhD in Management Science from KAIST. From 1999-2000 he was a Visiting Scholar at the Graduate School of Business at Stanford University. Bae's research interests are in technology management, R&D management, entrepreneurship and e-business. He has published numerous papers in Korean and international journals.

Dan (Danny) Breznitz is Assistant Professor at the Sam Nunn School of International Affairs and the School of Public Policy at the Georgia Institute of Technology. He received his BA Summa Cum Laude from the Hebrew University of Jerusalem, and his PhD from MIT. He has been a fellow of the Social Science Research Council program on The Corporation as a Social Institution and an Alfred P. Sloan foundation graduate fellow at MIT's Industrial Performance Center, where he is now a research affiliate. His PhD won a prize for best dissertation in industry studies from the Alfred P. Sloan foundation. In the past, he was a visiting research fellow at the Media Lab Europe of Dublin. Breznitz's interests are in social change and comparative political economy, specifically around interactions of science, technology, public policy, and industrial growth and transformation.

Breznitz's research focuses on three themes: (1) Rapid-Innovation-based industrialization, especially science and technology policies and the role of the state under the constraint of the global economy; (2) State-society interactions; (3) Methodological issues regarding social structure and historical based social science research.

His work was published in *Industrial and Corporate Change*, *Industry and Innovation*, and a few chapters in edited volumes. He is in the midst of revising a book manuscript provisionally titled *Innovation and the*

State – Development Strategies for High Technology Industries in a World of Fragmented Production. The book explores issues related to the choices and capabilities of communities, states, and societies to develop and sustain economic growth under conditions of intensified globalization by conscious inducement of rapid-innovation-based high-tech activities. It details the evolution of policies and business development, and analyzes the long-term consequences of several different approaches followed by the IT industries in three states: Ireland, Israel, and Taiwan. The research focuses on the different interactions that evolved in each state between the state and the industry as a result of these different policies. It uses the comparative method both on the international level and the domestic level by micro-analyzing two different sectors of the IT industry, software and hardware.

His current research project looks at the internationalization of R&D, specifically how policies in both home and host countries affect the strategies of MNCs and indigenous firms. Before pursuing his PhD at MIT, Breznitz co-founded and managed a software company in Israel.

John Seely Brown is currently a visiting scholar at USC and prior to that he was the Chief Scientist of Xerox Corporation and the director of its Palo Alto Research Center (PARC)—a position he held for nearly two decades. While head of PARC, Brown expanded the role of corporate research to include such topics as organizational learning, knowledge management, complex adaptive systems, ethnographic studies of the workscape and nano technology. He was a cofounder of the Institute for Research on Learning (IRL). His personal research interests include the impact of globalization on business, the management of radical innovation, digital culture, ubiquitous computing and organizational and individual learning.

Brown—or as he is often called, JSB—is a member of the National Academy of Education and a Fellow of the American Association for Artificial Intelligence and of AAAS and a Trustee of Brown University and the MacArthur Foundation. He serves on numerous public boards (Amazon, Corning, Varian Medical Systems and Polycom) and private boards of directors.

He has published over 100 papers in scientific journals and was awarded the *Harvard Business Review's* 1991 McKinsey Award for his article, “Research that Reinvents the Corporation” and again in 2002 for his article “Your Next IT Strategy.” In 2004 he was inducted into the Industry Hall of Fame.

With Paul Duguid he co-authored the acclaimed book *The Social Life of Information* (HBS Press, 2000) that has been translated into 9 languages with a second edition in April 2002. His most recent book with John Hagel—*The Only Sustainable Edge*—is about new forms of collaborative innovation. It also provides a novel framework for understanding what is really happening in off-shoring in India and China and how each are inventing powerful new ways to innovate, learn and accelerate capability building.

JSB received a BA from Brown University in 1962 in mathematics and physics and a PhD from University of Michigan in 1970 in computer and communication sciences.

Cong Cao is a researcher with both the Levin Graduate Institute of International Relations and Commerce, the State University of New York and the University of Oregon. He is interested in the social studies of science and technology with a focus on China. He is the author of *China's Scientific Elite* (RoutledgeCurzon 2004), a study of those Chinese scientists holding elite membership in the Chinese Academy of Sciences. His journal publications have appeared in *China Quarterly*, *Asian Survey* and *Minerva*, among others, on such topics as China's S&T manpower, high-tech development, industrial R&D, and basic research.

Chau-chyun (Jack) Chang is Deputy General Director of the Industrial Economics & Knowledge Center (IEK), Industrial Technology Research Institute (ITRI) in Taiwan. He received his BS in Chemical Engineering from the Tatung Institute of Technology and the MS and PhD in Chemical Engineering from Louisiana State University. He has been affiliated with ITRI in a number of roles since 1994. Chang has published more than seventy papers in technical journals and market reports.

Chen Hsin-Horng is Director of the International Division at the Chung-Hua Institution for Economic Research (CIER) in Taiwan. He received his BA and MA from the Economics Department of National Taiwan University and his PhD from Newcastle University. He has published numerous articles both in journals and books.

Chyi Yih-Luan's academic and professional experiences are in macroeconomics, econometrics and economic growth. She received a BA in economics from National Taiwan University (NTU) in 1983 and after studying economics in the U.S. for five years was awarded the PhD by Northwestern University in 1989. She returned to Taiwan and joined the Department of Economics at National Tsing Hua University as an associate professor. In 1998, she became a tenured full professor. Funded by the National Science Council in Taiwan, Chyi visited the London School of Economics and Political Science from 1998 to 1999.

Chyi has served as an associate editor for *Taiwan Economic Forecast and Policy* and *Taipei Economic Inquiry* since 2002; published articles in the *Review of International Economics*, the *Review of Development Economics*, *Applied Economics*, *Applied Financial Economics*, *Economic Modeling*, the *Academia Economic Papers*, and the *Taiwan Economic Review*.

Her current work focuses on indicators of high-tech industrial clusters; knowledge spillovers in clusters and regions; contribution of venture capital to the industry performance; and knowledge-based service industries under collaborations with faculty colleagues, research institutes, and graduate students. Starting from January 2006, Chyi was honored to be elected as the first director of the Economic Research Center on Globalization (ERCG), College of Technology Management, National Tsing Hua University.

Pankaj Dhingra is President and CEO of Nanostellar, Inc. Mr. Dhingra has more than 25 years of experience, including managing a technology startup and a \$650 million global automotive components business. His functional experience spans finance, strategic planning, mergers and acquisitions, sales and marketing with Delphi, General Motors and Unisys. During his tenure at Delphi, he managed the company's automotive battery business and delivered substantial revenue and profit growth. Prior to joining Nanostellar Pankaj served as President of Ener1, Inc.'s Energy Division, an alternative energy technologies company. He has BS in Electrical Engineering from India and MBA in Marketing and Finance from Columbia University.

Dieter Ernst is a senior fellow in the Economics Study Area of the East-West Center Research Program. This position is at the full professorial level. He is a former senior advisor to the OECD, Paris, and former research director of the Berkeley Roundtable on the International Economy (BRIE) at the University of California at Berkeley. Dr. Ernst has co-chaired an advisory committee of the U.S. Social Science Research Council to develop a new program on Innovation, Business Institutions, and Governance in Asia. Ernst has also served as scientific advisor to several institutions, among them the Organization of Economic Cooperation and Development, the World Bank, the U.N. Conference on Trade and Development, and the U.N. Industrial Development Organization. He holds a PhD in economics from the Universitaet Bremen.

Ernst's current research focuses on offshore outsourcing through global production and innovation networks, global markets for knowledge workers, and implications for industrial and technology policies. Dr. Ernst has published numerous books and articles in leading journals on internationalization of innovation and the determinants of its diffusion within and across countries. His recent books include *Technological Capabilities and Export Success: Lessons from East Asia* (1998), *International Production Networks in Asia: Rivalry or Riches* (2000), *Innovation Offshoring—Asia's Emerging Role in Global Innovation Networks* (2006), and *Sharing the Benefits? Innovation Offshoring and Asia's Emerging Knowledge Economies* (forthcoming).

Christian S. Eversull, MD, is Chief Medical Officer and Founder of Acument Medical, Inc. Dr. Eversull began his medical device career as an R&D engineer at Medtronic AneuRx where he contributed to the development of a modular AAA stent graft system. He then joined Bacchus Vascular, Inc. to lead initial design of the Trellis Isolated Thrombolysis catheter. He subsequently pursued an MD at Stanford University School

of Medicine and was awarded the Medical Scholar Biodesign Innovation Fellowship. Areas of research included devices for treatment of obstructive sleep apnea and methods for constructing vascular catheters. Dr. Eversull holds a BS degree with distinction from Stanford University's Program in Science, Technology, and Society, and an MA degree in Russian and East European Studies also from Stanford.

Douglas B. Fuller holds a BA from Swarthmore College, a MA from UC Berkeley and a PhD in political science from MIT, and has been researching technology and economic policy-making in East Asia for over a decade. He is currently a full-time faculty member at the School of International Service at American University. Fuller has spent approximately six years living in Greater China and has conducted field research in Korea, Japan, and Malaysia as well. His current research interests include the economic prospects for developing countries under globalization and the comparative political economy of East Asia. He has contributed to two recent books, *Global Taiwan* (M.E. Sharpe 2005) and *How We Compete* (Currency 2005), and has published articles in a number of academic journals, including *Industry and Innovation* and the *Journal of Contemporary China*. He has served as a research fellow at Stanford Project on Regions of Innovation and Entrepreneurship, which is part of Stanford University's Shorenstein Asia-Pacific Research Center, and Massachusetts Institute of Technology's Industrial Performance Center. He is currently working on a manuscript about how China's successful technological development fits neither the prescriptions for development offered by revisionist political economists nor those of the mainstream economists adhering to the Washington Consensus.

Alfonso Gambardella (PhD, Stanford 1991) is Professor of Management at the Università Commerciale "Luigi Bocconi," Milan, Italy. His research interests are in the economics and management of technology and innovation. He has published journal articles in this field, and participated in international research projects. He has published books with MIT Press, Cambridge University Press, and Oxford University Press. Among these, his *Markets for Technology* (with Ashish Arora and Andrea Fosfuri) is widely cited. He has also taught courses on the economics of technology at the Department of Economics of Stanford University.

Matthew M. Gardner is President of BayBio which serves the community of 800+ life science companies in Northern California, their 85,000 employees, and the supporting communities of suppliers, service firms and other stakeholders. Mr. Gardner represents BayBio in the Biotechnology Industry Organization, the Council of State Bioscience Associations, the Global Bioscience Partnership, and other coalitions and business development groups. He has contributed to a broad range of publications, from biotechnology articles in *Manufacturing Today* and *Helix International* magazines to white papers on enterprise development and innovation policy. He earned his BA in Political Science and his MA in History, both from the University of San Diego.

John Hagel III is an independent management consultant and author. He works with senior management of large enterprises around the world to shape business strategies and improve business performance. His experience includes senior management positions in technology businesses and sixteen years as a consultant with McKinsey & Co. He continues to serve as Senior Advisor to McKinsey & Co.

Harvard Business School Press has just published his new book, *The Only Sustainable Edge*, co-authored with John Seely Brown. He is also the author of the best-selling business books, *Net Gain*, *Net Worth* and *Out of the Box*. John has also received two awards for best articles published in *Harvard Business Review* and he has published extensively in other business publications including the *Wall Street Journal*, *Financial Times* and *McKinsey Quarterly*.

Hagel is a Forum Fellow at the World Economic Forum and serves on the Steering Committee of the Harvard Business School Research Center. He received his MBA from Harvard Business School, a JD from Harvard Law School, a graduate degree (B.Phil.) in Modern Middle Eastern Studies from Oxford University and a BA in economic history from Wesleyan University. More information is available on his web site www.johnhagel.com and his blog at: <http://edgeperspectives.typepad.com>.

Marguerite Gong Hancock is the associate director of the Stanford Project on Regions of Innovation and Entrepreneurship (SPRIE). For SPRIE, she manages project research, conferences and seminars, publications, and oversees the project's affiliated academic and government research partners in six countries in Asia. She leads SPRIE's China team, guiding research on high tech regions, case studies of information technology companies, and new work on the globalization of R&D and high tech leadership in Greater China.

She is co-editor of *Making IT: the Rise of Asia in High Tech* (Stanford University Press, 2006) and *The Silicon Valley Edge* (Stanford University Press, 2000). She continues to be an active member of Stanford's Entrepreneurship Task Force and a speaker to university and business leaders, including presentations for executive education and conferences in Silicon Valley and Asia.

A specialist on government-business relations in the development of information technology, Hancock has worked as director of Network Research for the Stanford Computer Industry Project at the Graduate School of Business; as a research associate at the East Asia Business Program of the University of Michigan; and as a company consultant in Boston and Tokyo. She holds a BA in humanities and East Asian studies from Brigham Young and an MA from Harvard in East Asian studies. While pursuing a PhD at the Fletcher School of Law and Diplomacy, she focused on computer industry development in China.

Oliver Hung is a Researcher at the Industrial Economic and Knowledge Center (IEK), at the Industrial Technology Research Institute (ITRI), Taiwan.

Doug Henton has more than 30 years of experience in economic and community development at the national, regional, state, and local levels. He was project manager for the start-up of the Joint Venture: Silicon Valley Network and is the architect of Joint Venture's annual Index of Silicon Valley.

Henton founded Collaborative Economics in July 1993 after a decade as assistant director of SRI International's Center for Economic Competitiveness. At SRI, he directed projects on the economic future of Hong Kong, the technopolis strategy in Japan, and regional development in China.

Henton holds a bachelor's degree in political science and economics from Yale University and a master of public policy degree from the University of California, Berkeley.

Gary Jefferson writes about institutions, technology, economic growth, and China's economic transformation. At Brandeis, Jefferson teaches courses in the economics of innovation and institutions and China. He also teaches a course on the Political Economy of China at the Fletcher School at Tufts.

Jefferson's publications include, *Enterprise Reform in China: Ownership, Transition, and Performance* (Oxford University Press, 2000), "What is Driving China's Decline in Energy Intensity?" in *Resource and Energy Economics* (2004). "An Investigation of Firm-Level R&D Capabilities in East Asia," in *Innovation and Production Networking in East Asia*, ed. Shahid Yusuf (2004), "R&D and Technology Transfer: Firm-Level Evidence from Chinese Industry," in *Review of Economics and Statistics* (2005), and "Privatization and Restructuring in China: Evidence from Shareholding Ownership" in *Journal of Comparative Economics* (2006). Jefferson's research is supported by the Department of Energy and the National Science Foundation. A graduate of Dartmouth College (AB) and Yale University (PhD), Jefferson has lived and taught at the Chinese University of Hong Kong and at Wuhan University in China and frequently travels to China for his research.

Kay (Chuan-Kai) Lee is an Assistant Professor in the Department of Urban Planning at National Cheng-Kung University in Taiwan. She received the BA and MA in Chemistry at National Tsing Hua University, and in 2006 received the PhD from the Department of City and Regional Planning at the University of California at Berkeley. The title of her dissertation is *Cluster Adaptability across Sector and Border: The Case of Taiwan's Information Technology Industry*.

Samuel S. Mao is an Assistant Adjunct Professor in the Department of Mechanical Engineering at the University of California at Berkeley. Professor Mao's group conducts fundamental and applied research in the cross-disciplinary fields of sensor technology, ultrafast materials science, and advanced energy technology

Mao's research interests include energy transport, conversion and storage, nano, micro and meso scale phenomena and devices, ultrafast laser-material interactions, materials processing and nonlinear science.

William F. Miller has spent about half of his professional life in business and about half in academia. He was the last faculty member recruited to Stanford University by the legendary Frederick Terman, who was then Vice President and Provost of Stanford. Miller himself later became Vice President and Provost of Stanford. He conducted research and directed many graduate students in Computer Science.

In 1968 Dr. Miller also played a role in the founding of the first Mayfield Fund (venture capital) as a special limited partner and advisor to the general partners.

As President and CEO of SRI International (1979-1990) Miller opened SRI to the Pacific Region; he established the spin-out and commercialization program at SRI and established the David Sarnoff Research Center (now the Sarnoff Corporation) as a for-profit subsidiary of SRI, and he became the Chairman and CEO of SRI.

In 1982 Miller was appointed to the National Science Board. He has served on the board of directors of several major companies such as Signetics, Firemans Fund Insurance, First Interstate Bank (and later) Wells Fargo Bank, Pacific Gas and Electric Company, Varian Associates, WhoWhere? Inc. (Chairman), and Borland Software Corp. (Chairman).

He co-founded SmartValley, Inc. and aided the formation of CommerceNet and serves on the board of directors. Dr. Miller was a founding director of the Center for Excellence in Non-profits. He currently serves as Chairman of the Board of Sentius Corporation and is a Founder and Chairman of Nanostellar, Inc.

Dr. Miller is a Life Member of the National Academy of Engineering, Fellow of the American Academy of Arts and Science, Fellow of the American Association for the Advancement of Science, Life Fellow of IEEE, and Member of the Silicon Valley Engineering Hall of Fame.

Henry S. Rowen is a senior fellow at the Hoover Institution, a professor of Public Policy and Management emeritus at the Stanford University's Graduate School of Business and a senior fellow emeritus of the Walter H. Shorenstein Asia-Pacific Research Center (Shorenstein APARC) at the Freeman Spogli Institute for International Studies at Stanford University. Rowen is an expert on international security, economic development, and high tech industries in the U.S. and Asia. His current research focuses on the rise of Asia in high technologies.

In 2004-05, Rowen served on the Presidential Commission on the Intelligence of the United States Regarding Weapons of Mass Destruction. From 2001-04, he served on the Secretary of Defense Policy Advisory Board. Rowen was Assistant Secretary of Defense for International Security Affairs in the U.S. Department of Defense from 1989 to 1991. He was also chairman of the National Intelligence Council from 1981 to 1983. Rowen served as president of the RAND Corporation from 1967 to 1972 and was assistant director, U.S. Bureau of the Budget, from 1965 to 1966.

Rowen's most recent work is co-editing *Making IT: The Rise of Asia in High Tech* (Stanford University Press, 2006). He co-edited *The Silicon Valley Edge: A Habitat for Innovation and Entrepreneurship* (2000); *Behind East Asian Growth: The Political and Social Foundations of Prosperity* (1998); and *Defense Conversion, Economic Reform, and the Outlook for the Russian and Ukrainian Economies* (1994), which he co-edited with Hoover fellow Charles Wolf and Jeanne Zlotnick. Among his articles are "Kim Jong-Il Must Go," Policy Review (2003); "The Short March: China's Road to Democracy," National Interest (1996); "Inchon in the Desert: My Rejected Plan,," National Interest (1995); "The Tide underneath the 'Third Wave,'" Journal of Democracy (1995); and "Vietnam Made Him," *National Interest* (1995/96).

Rowen earned a BA in industrial management from the Massachusetts Institute of Technology in 1949 and an MPhil in economics from Oxford University in 1955.

Chin-Tay Shih received his BA in Electrical Engineering from National Taiwan University, MS in Management (Stanford, 1985), and PhD (Princeton, 1975). Before becoming the Dean of the School of Technology Management and Morris Chang Chair Professor in Technology Management at National Tsing Hua University in the fall of 2004, he had served as the President of the Industrial Technology Research Institute, the locomotive of Taiwan high-tech sectors, since 1994. Shih has been dedicated to R&D management in firms, industries and governments. Shih was instrumental in helping the establishment of TSMC and UMC, currently the world leaders in IC foundry. He has won numerous awards, such as Excellent Youth Engineer (1979), Full-Life Contribution Award from Chinese Engineering Society (1989), and IEEE fellow (1992). He has acted as policy advisors for STAG, NICI etc. He also has been highly active in various professional societies, acting as chairman of APIPA and board of directors in TEEMA.

Rolf Sternberg received his first degree (1984) as well a doctorate (PhD, 1987) and the habilitation (1994) from the University of Hannover. Between 1995 and 1996 he worked as a professor for regional geography at the Department of Geography, Technical University of Munich (Bavaria, Germany). Between 1996 and 2005 he was a full Professor (Chair) of Economic and Social Geography at the University of Cologne, Faculty of Economics and Social Science. In 2005 he moved to the University of Hannover to become Head of the Institute of Economic and Cultural Geography.

Sternberg's main research interests are in the field of spatial consequences of policy activities (e.g., technology policy instruments like innovation centres/science parks), in the area of impacts of networks between innovative actors (firms, research institutions, politicians) on regional development, new firm formation process and effects, and in the field of regional-sectoral clusters and their economic impacts. Beside five books he has published about 130 articles covering highly ranked journals like *Research Policy*, *Regional Studies*, *Economic Geography*, *European Planning Studies* and *Small Business Economics*. He was Chairman of the Scientific Board of the Association of Geographers at German Universities (2000-2003) and Member of the Northrhine-Westphalian Working Group of the German Academy for Spatial Science and Regional Planning. Since 1998 he is the leader of the German team of the Global Entrepreneurship Monitor (GEM) and a member of the GEM Research Committee. In 2004, he organized the First GEM Research Conference in Berlin.

Frank Tan is Chief Representative of Beijing Zhongguancun Science Park, stationed in Santa Clara, California, since January 2004. Prior to this position in Silicon Valley, Mr. Tan had worked as a senior executive in China's IT industry in Beijing for 20 years. He was a VP at Stone Group Co., the best-known private sector IT company in China in 1980s and 90s. He also worked as VP at CENTEC, one of the largest high-tech holding companies listed in Shenzhen Stock Exchange in China.

Graduated from Peking University, Mr. Tan obtained his MA in Mass Communications at the Chinese Academy of Social Sciences. He was a guest researcher at Stanford University during 1989-1991, and at University of Iowa in 1991.

Kung Wang is currently the Director and Professor at the Graduate Institution of Industrial Economics at National Central University (NCU) in Taiwan. He was General Director of Industrial Economics and Knowledge Center (IEK) of the Industrial Technology Research Institute (ITRI) from 2000 to 2004, and he established the market analysis and consulting service arm for ITRI. He has held numerous Taiwanese governmental positions, including Advisor for National Science, Director General of Science Based Industrial Park Administration (SIPA), and Commissioner of Fair Trade Commission—The Executive Yuan. In academia, he has served as the Director and Chairman of the Graduate Institution of Industrial Economics, and the Department of Business Administration at National Central University. Other positions have included board director for state-owned enterprises and venture capital funds, advisor to the Taiwanese government,

and advisor to industrial and commercial associations. He holds B.S. and M.S. degrees from National Taiwan University and a Ph.D. from the Massachusetts Institute of Technology (MIT).

Yi-Ling Wei is an Industrial Researcher at the Industrial Economics & Knowledge Center (IEK) in the Industrial Technology Research Institute (ITRI), Taiwan. She has been engaged in market & industrial research in the fields of automotive, machinery and semiconductor equipment industries since 1996 and has delivered research results through several publications and seminars. Currently, her major study focuses on innovative high-tech industry cluster and public R&D policy evaluation as the project leader supported by Minister of Economy Affairs, Taiwan. She received the BA in Mechanical Engineering from Tamkang University (1992), and the MBA from Providence University (1994).
