

**Curriculum Vitae**  
***NICHOLAS S. VONORTAS***

**ADDRESS**

*Work:*

Center for International Science and Department of Economics  
and Technology Policy The George Washington University  
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**EDUCATION**

Ph.D., 1989, New York University, U.S.A. (Economics)  
M.Phil., 1987, New York University, U.S.A. (Economics)  
M.A., 1983, Leicester University, U.K. (Economic Development)  
B.A., 1981, University of Athens, Greece (Economics)

**FIELDS OF SPECIALIZATION**

Industrial Organization / Economics of Technological Change  
Strategic Business Partnerships / Innovation Networks  
Science, Technology, and Innovation Strategy and Policy / R&D Program Assessment

## **PROFESSIONAL EXPERIENCE**

### **i. Appointments (Teaching, Research)**

Professor of Economics and International Affairs, Department of Economics and CISTP, The George Washington University, 2004 - present; Associate Professor, 1996-2004; Assistant Professor 1990-1996.

Director, Center for International Science and Technology Policy (CISTP), The George Washington University, 2001 – present; Deputy Director, 1998-2001.

Director, Graduate Program on Science, Technology and Public Policy, The George Washington University, 1998 - present.

Instructor of Economics, Department of Economics, New York University, 1986-1988.

### **ii. Visiting Positions, Research**

Research Associate, CESPRI, Luigi Bocconi University, Milano, Italy, 2001 - present.

Research Associate, Management Science Laboratory, Athens University of Economics and Business, Greece, 2001 - present.

Research Associate, Laboratory for Industry and Energy Economics, National Technical University of Athens, Greece, 1998 - present.

Visiting Scholar, Maastricht Economic Research Institute on Innovation and Technology (MERIT), University of Maastricht, Netherlands, Fall 1997.

Research Associate, Center for Science and Technology Policy, New York University and Rensselaer Polytechnic Institute, 1985 - 1989.

Intern, United Nations Centre for Transnational Corporations, New York, 1984.

### **iii. Research Funding - Consulting**

U.S. National Science Foundation

U.S. Department of Commerce, Advanced Technology Program (ATP)

U.S. Department of Commerce, National Institute of Standards and Technology (NIST)

U.S. Small Business Administration (SBA)

U.S. Department of Energy (DOE)

U.S. National Aeronautics and Space Administration (NASA)

European Commission, DG Research

European Commission, DG Information Society

European Commission, Washington Delegation

Organization for Economic Cooperation and Development (OECD)

United Nations Conference on Trade and Development (UNCTAD)

United Nations, Economic and Social Commission for Western Asia (ESCWA)

The World Bank, Private Sector Development

Science and Technology Policy Institute, Republic of Korea (STEPI)  
Korea Institute of S&T Evaluation and Planning, Republic of Korea (KISTEP)  
SRI International  
General Secretariat for Research and Technology, Greece  
National Statistical Agency of Greece

## **PUBLICATIONS**

### i. Books

*Knowledge Flows in European Industry: Mechanisms and Policy Implications*, editor, Routledge, forthcoming 2005 (Co-editors, Yannis Caloghirou, Natasha Constantellou).

*European Collaboration in Research and Development: Business Strategies and Public Policies*, editor, Northampton, MA: Edward Elgar, 2004 (Co-editors, Yannis Caloghirou and Stavros Ioannides).

*Cooperation in Research and Development*, Boston, MA; Dordrecht, Netherlands: Kluwer Academic Publishers, 1997.

*Cooperative Research in R&D-Intensive Industries*, Aldershot, UK; Brookfield, VT: Avebury (Academic Publishers), 1991.

### ii. Other Edited Volumes

*Strategic Research Partnerships*, Arlington, VA: National Science Foundation, 2001. [Co-edited with John E. Jankowski and Albert N.Link.]

### iii. Refereed Articles

“Bundling negotiations: An efficiency rationale for multiproject contact in research joint ventures”, Journal of Economic Behavior and Organization, forthcoming. (With Christopher Snyder)

“Antitrust policy, interface compatibility standards, and information technology”, Knowledge, Technology & Policy, forthcoming. (With Thomas Hemphill)

“Intellectual property protection mechanisms in research partnerships”, Research Policy,

- forthcoming. (With Henry Hertzfeld and Al Link)
- “Research joint ventures: A critical survey of theoretical and empirical literature”, *Journal of Economic Surveys*, 17(4), 2003. (With Yannis Caloghirou and Stavros Ioannides.)
- “Strategic Research Partnerships: A Managerial Perspective”, *Technology Analysis and Strategic Management*, 15(2), 2003. (With Thomas Hemphill.)
- “The performance of research partnerships”, *Managerial and Decision Economics*, 24, 2003. (With Yannis Caloghirou and George Hondroyannis.)
- “Building competitive firms: Technology policy initiatives in Latin America”, *Technology in Society*, 24, 2002.
- “Science and technology policies towards research joint ventures”, *Science and Public Policy*, 29(2), 2002. (With Yannis Caloghirou and Stavros Ioannides.)
- “Toward an integrated model of strategy formulation for strategic technical alliances”, *International Journal of Technology Transfer and Communications*, 1(3), 2002. (With Chung-Shing Lee.)
- “Convergence to symmetry in dynamic strategic models of R&D: The undiscounted case,” *Journal of Economic Dynamics and Control*, 25, 2001. (With Sumit Joshi.)
- “University-industry cooperation in the context of the European Framework Programmes”, *Journal of Technology Transfer*, 26, 2001. (With Yannis Caloghirou and Aggelos Tsakanikas.)
- “Apprentissage et cooperation a travers la recherche-developpement”, *Technologies, Ideologies, Pratiques*, XIV(1), 2000. (With Rigas Arvanitis.)
- “Technology Policy in the United States and the European Union: Shifting Orientation Towards Technology Users,” *Science and Public Policy*, 27(2), April 2000.
- “Research Partnerships,” *Research Policy*, 29(4-5), 2000. (With John Hagedoorn and Albert Link.)
- “Multimarket contact and inter-firm cooperation in R&D,” *Journal of Evolutionary Economics*, 10(1-2), 2000.
- “Participation of European Union Companies in US Research Joint Ventures”, *The IPTS*

Report, 2000. (With Albert Link.)

"Towards the knowledge-based economy: United States and its APEC partners", Journal of APEC Studies, 1(2), 2000. (With Adam Tolnay)

"How do participants in research joint ventures diversify?", The Review of Industrial Organization, 15(3), 1999.

"R&D project selection in the public sector," Journal of Policy Analysis & Management, 17(4), 1998. (With Henry R. Hertzfeld.)

"Strategic alliances in information technology and developing country firms: Policy perspectives," Science, Technology and Society, 3(1), 1998.

"Research joint ventures: The use of databases", The IPTS Report, May 1998.

"Research joint ventures in the United States", Research Policy, 26, 1997.

"Process innovation in small firms: Case studies on CNC machine tools," Technovation, 17(8), 1997. (With Lan Xue.)

"Strategic alliances in information technology and developing country firms I: Recent evidence," World Development, 25(5), 1997. (With Stratos P. Safioleas.)

"Two-stage R&D competition: An elasticity characterization," Southern Economic Journal, April 1996. (With Sumit Joshi.)

"New directions for U.S. science and technology policy: The view from the R&D assessment front," Science and Public Policy, 22(1), 1995.

"Inter-firm cooperation with imperfectly appropriable research," International Journal of Industrial Organization, 12(3), 1994.

"Cournot equilibrium with imperfectly appropriable R&D," Journal of Industrial Economics, XLII(1), 1994. (With R. David Simpson.)

"Emerging patterns of multinational enterprise operations in developed market economies: Evidence and policy," Review of Political Economy, 2(2), 1990.

iv. Refereed Paper Series

“Partnerships and Networking in Science and Technology for Development”, Technology for Development Paper Series, United Nations Conference on Trade and Development, Geneva: UNCTAD, 2002 (UNCTAD/ITE/TEB/11).

v. Book Chapters

“Economic Perspectives on Technological Change”, in Luke Georghiou, John Rigby and Hugh Cameron (eds.) *Evaluating the Impact of Technology and Research: The Theory and Practice of Socio-Economic Assessment*, Edward Elgar, forthcoming 2005.

“Introduction”, “Knowledge Flows In European Industry: An Overview of Evidence from Surveys and Case Studies”, “Conclusion”, in Yannis Caloghirou, Natasha Constantellou and Nicholas S. Vonortas (eds.) *Knowledge Flows in European Industry: Mechanisms and Policy Implications*, editor, Routledge, forthcoming 2005. (With Yannis Caloghirou.)

“Collaborate to collude? Multimarket and multiproject contact in R&D”, chapter in Peter Grossman (ed.) *How Cartels Endure and How They Fail: Studies of Industrial Collusion*, Edward Elgar, 2004. (With Yongsuk Jang.)

“Business model innovation in the digital economy”, in Georgios I. Doukidis, Nikolaos Mylonopoulos and Nancy Pouloudi (eds.), *Social and Economic Transformation in the Digital Era*, IDEA Group Publishing, 2004. (With Chung-Shing Lee.)

“Real options for public sector R&D investments”, in Stephan Kuhlmann and Philip Shapira (eds.), *Learning from Science and Technology Policy Evaluation: Experiences from the United States and Europe*, Edward Elgar, 2004. (With Matthew Lackey.)

“US policy towards research joint ventures”, in Yannis Caloghirou, Stavros Ioannides and Nicholas S. Vonortas (eds.), *Industrial Collaboration in Research and Development*, Northampton, MA: Edward Elgar, 2004.

“Towards the knowledge-based economy: United States and its APEC partners”, in Albert N. Link and Maryann Feldman (eds.) *Technology Policy for the Knowledge-Based Economy*, Kluwer Academic Publishers, 2001. (With Adam Tolnay.)

“Multimarket contact and inter-firm cooperation in R&D”, in D. C. Mueller and U. Cantner (eds.) *Capitalism and Democracy in the 21<sup>st</sup> Century*, Heidelberg: Physica-Verlag, 2001.

"Dynamic cooperation in R&D with research externalities," in J. Poyago-Theotoky (ed.) *R&D Cooperation: Theory and Policy*, Macmillan, 1997. (With Sumit Joshi.)

vi. Edited Paper Collections in Journals

"Technology Alliances: Strategy, Evolution, Knowledge Management", editor, *International Journal of Technology Management*, 2004 (Co-editor B. Bowonder)

"Strategic Research Partnerships: Economic, Managerial, and Policy Implications", editor, *Technology Analysis and Strategic Management*, 15(2), 2003. (Co-editors John Hagedoorn and Albert N. Link.)

"Technology Transfer and Learning Through Strategic Technical Alliances: International Experiences", editor, *The Journal of Technology Transfer*, 25(1), 2000. (Co-editor Rigas Arvanitis.)

vii. Invited Articles

"Strategic innovation alliances and science and technology policy", *Encyclopedia of Life Support Systems* (UNESCO), 2003. (With Patrick Murphy)

"Information technology: Developing country firms enter the global network", *iMP*, March, 2000. (<http://www.cisp.org>) (With Rebecca Dodder)

"Intellectual property rights and knowledge dissemination in research joint ventures," Commentary, *Science Communication*, 19(1), 1997.

viii. Conference Proceedings

"Determinants of technology licensing", in D. H. Nagao (ed.) *Academy of Management Best paper Proceedings of the Sixty-fourth Annual Meeting*, 2004. (With Young Jun Kim)

"Technology Licensing", in *Patents, Innovation and Economic Performance: OECD Conference Proceedings*, Directorate for Science, Technology and Industry, Organization for Economic Cooperation and Development, Paris: OECD, 2004.

"Technology Policy in the United States and the European Union", in *Science and*

*Technology Policies for the 21<sup>st</sup> Century*, Conference Proceedings, Economic and Social Commission for Western Asia (ESCWA), United Nations, 1999.

"Effective use of technical resources: Electromechanical engineering," in Herbert I. Fusfeld (ed.) *Effective Use of Global Technical Resources*, Center for Science and Technology Policy, Rensselaer Polytechnic Institute, 1993.

"Inter-firm cooperation in imperfectly appropriable research," in S. Okamura, K. Murakami and I. Nonaka (eds.) *Science and Technology Policy Research: What Should Be Done? What Can Be Done?*, National Institute of Science and Technology Policy (STA - Japan), 1992.

"Economic interdependence among developed market economies and multinational enterprises," in Herbert I. Fusfeld, ed., *Changing Global Patterns of Industrial Research and Development*, Center for Science and Technology Policy, Rensselaer Polytechnic Institute, 1989.

"The role of small and medium size enterprises in collective activities," in Herbert I. Fusfeld and Richard R. Nelson, eds., *Cooperation and International Competitiveness*, Center for Science and Technology Policy, Rensselaer Polytechnic Institute, 1988. (With Sigvard Tomner).

#### ix. Reports

*Five-Year Assessment of the Community Research Framework Programme 1999-2003*, Final Report of the High-Level Panel to Evaluate the European Union's Framework Programme for RTD, European Commission, DG Research, forthcoming 2005 (Panel member and Rapporteur)

"Assessment of the Impact of Actions Completed under the 5<sup>th</sup> Community Research Framework Programme: Survey for the Five-Year Assessment of Community Research Activities 1999-2003", European Commission, DG Research, 2004. (With Atlantis Research, Joanneum Research, Ken Guy, and Wolfgang Polt)

*The Emergence of New Industrial Activities: Fusing Services and Manufacture*, Final Report of the TENIA Project, European Commission, DG Research, July 2004. (With Yannis Caloghirou and Stavros Ioannides)

*Guidelines for the Management of Intellectual Property in Publicly-Funded Research Organizations*, co-author, Expert Group (ETAN) Report, European Commission, DG

Research, 2003.

Technology Licensing, Organization for Economic Cooperation and Development, Paris: OECD, October 2003.

Information Infrastructure for Healthcare: Case Studies from a Focused Program, Advanced Technology Program, National Institute for Standards and Technology, Gaithersburg: NIST, June 2003. (With Richard Spivack.)

Paradigm Shifts in Science, Technology and Innovation Policy of Leading and Catching-up Countries: The case of the United States and Korea, Science and Technology Policy Institute (STEPI), Seoul, Korea, 2003. (With Yongsuk Jang)

Performance Measurement for Government R&D Programs: In Search of Best Practices, Korea Institute for Science and Technology Evaluation and Planning (KISTEP), Seoul, Korea, December 2002. (With Yongsuk Jang)

Trends in Life Sciences – U.S. Market, Report to the Japan External Trade Organization (JETRO), International Access Corporation, with the collaboration of the Center for International Science and Technology Policy, Washington, D.C. October 2002.

The U.S. Biotechnology Industry, Report to the Japan Industrial Policy Research Institute (JIPRI), International Access Corporation, with the collaboration of the Center for International Science and Technology Policy, Washington D.C., May 2002.

Role and Strategic Use of Intellectual Property Rights in International Research Collaborations, co-author, Expert Group (ETAN) Report, European Commission, DG Research, EUR 20230, April 2002.

Assessing the Socio-economic Impacts of the Framework Programme, chapter author, Report coordinated by the Policy Research in Engineering, Science and Technology (PREST) Unit, the University of Manchester, for the European Commission, DG Research, March 2002.

Innovation-Related Knowledge Flows in European Industry: Extent, Mechanisms, Implications, Final Report of the KNOW Project, Targeted Socio-Economic Research Programme (TSER), European Commission, DG Research, August 2001. (With Yannis Caloghirou and Natasha Constantelou.)

European Presence in US-Based Research Joint Ventures, European Commission, DG Research, Improving Human Research Potential and the Socio-Economic Research Base, July 2001.

*Priority Research Areas and Operational Systems of Major Public Research Institutes in the United States*, Science and Technology Policy Institute (STEPI), Seoul, Republic of Korea, July 2001. (With Yongsuk Jang.)

*Strategic Research Partnerships: Results of a Workshop*, Science Resource Studies Division, US National Science Foundation, October 2000. (With John Hagedoorn and Albert Link.)

*Technology and Innovation Policy Initiatives in the Americas*, Sectoral Issues Policy Division (SIPD), Economic and Social Commission for Western Asia (ESCWA), United Nations, Beirut, August 2000.

*Science and Technology Policy Towards Research Joint Ventures*, Final Report of the STEP-TO-RJVs Project SOE1-CT97-1075, Targeted Socio-Economic Research Programme (TSER), European Commission, DG Research, March 2000. (With Yannis Caloghirou.)

*Participation of European Corporations in US-Based Research Joint Ventures*, European Commission, June 1999. (With Albert Link.)

*Business Diversification Through Research Joint Ventures: Advanced Technology Program*, National Institute of Standards and Technology, March 1999.

*A Survey of High-Technology Small Firms*, U.S. Small Business Administration, Fall 1999. (With Joseph Cordes and Henry Hertzfeld.)

*Indicators for Science, Technology and Innovation in Europe and in Greece: Organization of Statistical Information*, National Statistical Agency of Greece, Fall 1998. (In Greek.)

*Inter-Firm Strategic Alliances in Information Technology: The Case of Developing Countries*, Private Sector Development Department, The World Bank, September 1995. (With Stratos P. Safioleas.)

*The Implementation of Process Innovation in Small Firms: Case Studies on CNC Machine Tools*, Dilthey Fellowship Committee, The George Washington University, November 1994. (With Sotiris Papantonopoulos and Lan Xue.)

*Factors Affecting Demand for NIST Calibration Services*, National Institute of Standards and Technology, September 1994. (With Joseph J. Cordes.)

*The Changing Economic Context: Strategic Alliances Among Multinationals*, Center for Science and Technology Policy, Rensselaer Polytechnic Institute, 1989.

*Export Controls and the International Technical System: The U.S. Semiconductor Industry*, Center for Science and Technology Policy, Rensselaer Polytechnic Institute, 1988. (With Carmela S. Haklisch.)

*Export Controls and the International Technical System: The U.S. Machine Tool Industry*, Center for Science and Technology Policy, Rensselaer Polytechnic Institute, 1987. (With Carmela S. Haklisch.)

x. Book Reviews

“Public Accountability: Evaluating Technology-Based Institutions” by Albert N. Link and John Scott (Kluwer Academic Publishers), The Journal of Technology Transfer, 2000.

**PAPERS CURRENTLY UNDER REVIEW IN JOURNALS**

“Choosing a Partner”, Center for International Science and Technology Policy, George Washington University, April 2004. (With Koichiro Okamura)

“Strategy and cost in technology licensing”, Department of Economics, George Washington University, September 2003. (With YoungJun Kim)

“Determinants of technology licensing”, Department of Economics, George Washington University, May 2003. (With YoungJun Kim.)

“Strategic alliance formation in the business cycle”, Center for International Science and Technology Policy, George Washington University, March 2002. (With John Hagedoorn)

**UNPUBLISHED PAPERS**

“Assessing industrial performance”, Center for International Science and Technology Policy, George Washington University, May 2002. (With Robin Auger)

- "Asymptotic behavior of dynamic strategic models of R&D: The discounted case," Department of Economics, The George Washington University, February 2000. (With Sumit Joshi.)
- "Characterization of Markov perfect equilibria in a dynamic model of R&D," Department of Economics, The George Washington University, January 1997. (With Sumit Joshi).
- "Strategic alliances in information technology and developing country firms," Occasional Paper #29, Private Sector Development Department, *The World Bank*, February 1997. (With Stratos P. Safioleas.)
- "Structural change and competitiveness: Manufacturing in Spain, Portugal and Greece," Center for International Science and Technology Policy, The George Washington University, March 1996. (With Yannis Caloghirou, Angeliki Mourtzikou and Lefteris Papayannakis.)
- "Disconnected: Economics and the process of technological advance," Center for International Science and Technology Policy, The George Washington University, October 1996.
- "Dynamic competition and cooperation with research externalities," Department of Economics, The George Washington University, 1993. (With Sumit Joshi.)
- "Small and medium size enterprises in the context of cooperative industrial research and international competitiveness," GEA working paper #87-02, Department of Economics, New York University, 1987.
- "Jumping over national borders: a partial equilibrium model of the multinational corporations decision to invest," mimeo, Department of Economics, New York University, 1986.
- "Technological aspects of transnational corporations' involvement in South-South trade," paper prepared for the South-South Trade Project, United Nations, 1984.

## **RESEARCH IN PROGRESS**

### i. Books

Technological Change in Industrial Economics, Oxford University Press. (With Sumit Joshi)

ii. Papers

“Innovation Networks in Industry I”

“Innovation Networks in Industry II” (With Franco Malerba)

“European Alliance and Knowledge Networks” (With Koichiro Okamura)

“R&D Networks: Emerging Concentration?” (With Koichiro Okamura)

“Strategic Networks for Technology Options (With Isabelle Besnabou and Sumit Joshi)

“Biotechnology Evolution and Regulation in Pharmaceuticals” (With Emily Thompson)

“Science Parks and High-Tech Incubators in Greece” (With Evangelia Sofouli)

Ongoing externally funded research projects are noted in the next section.

**(Selected) RESEARCH GRANTS, CONTRACTS (1999-2004)**

“Real Options for Research Investment Portfolio Analysis at the U.S. Department of Energy”, DOE Office of Science, 2004-2006. [Principal Investigator]

“Knowledge-Based Entrepreneurship: Innovation, Networks, and Systems” (KEINS), European Commission, DG Research, 2004-2006. [Co-Principal Investigator]

“Evaluation of Progress towards a European Research Area in Information Society Technologies”, European Commission, DG Information Society, 2005. [Co-Principal Investigator]

“IST-RTD Monitoring and Evaluation: Results and Impact Indicators”, European Commission, DG Information Society, 2004-2005. [Co-Principal Investigator]

“Assessment of the Impact of Actions Completed under the 5<sup>th</sup> Community Research Framework Programme: Survey for the Five-Year Assessment of Community Research Activities 1999-2003”, European Commission, DG Research, 2004. [Co-Principal Investigator]

“Patent Licensing Contracts in the OECD”, Organization for Economic Cooperation and

- Development (OECD), 2002-2003. [Principal Investigator]
- “Network Indicators and Globalization: Public Policy Implications”, GW Center for the Study of Globalization, 2002-2003. [Co-Principal Investigator]
- “Innovation Networks”, GW Research Enhancement Fund Award, 2002-2005. [Co-Principal Investigator]
- “Networks and Globalization”, GW Center for the Study of Globalization, 2001-2002. [Co-Principal Investigator]
- “Network Indicators”, Science Resources Studies, U.S. National Science Foundation, 2001-2003. [Co-Principal Investigator.]
- “Network Indicators: Science, Technology and Innovation”, European Commission, DG Research, Improving the Human Research Potential and the Socio-Economic Research Base, Common Basis of Science, Technology and Innovation Indicators Programme, 2001-2004. [Co-Principal Investigator.]
- “Performance Measurement for Government R&D Programs: in Search of Best Practice”, Korea Institute for Science and Technology Policy (KISTEP), Republic of Korea, 2002. [Principal Investigator].
- “Paradigm Shifts in Science, Technology and Innovation Policy of Leading and Catching-up Countries: The case of the United States and Korea”, Science and Technology Policy Institute (STEPI), Republic of Korea, 2001-2002. [Principal Investigator]
- “The Emergence of New Industrial Activities: Fusing Services and Manufacture (TENIA)”, Commission of the European Union, DG Research, 2001-2003. [Co-Principal Investigator]
- “The Assessment of the Socio-economic Impact of the Framework Program (ASIF)”, Commission of the European Union, DG Research, 2001-2002. [Co-Principal Investigator]
- “European Presence in US-Based Research Joint Ventures”, European Commission, DG Research, Improving Human Research Potential and the Socio-Economic Research Base, 2001.
- “Evaluation of United States government programs under GPRA”, Korea Institute for Science and Technology Policy (KISTEP), Republic of Korea, 2001. [Co-Principal

Investigator]

“Strategic Partnerships for Developing Countries”, Division on Investment, Technology and Enterprise Development (DITE), United Nations Conference on Trade and Development, 2001. [Principal Investigator]

“Methodology for the Assessment of Performance of Selected Existing Industries”, Sectoral Issues and Policy Division, Economic and Social Commission for Western Asia (ESCWA), United Nations, 2001. [Principal Investigator]

“Priority Research Areas and Operational Systems of Major Public Research Institutes in the United States”, Science and Technology Policy Institute (STEPI), Seoul, Republic of Korea, 2001. [Principal Investigator]

“Succeeding in Collaborative R&D: Three Case Studies of ATP-sponsored Research Joint Ventures”, Advanced Technology Program, National Institute of Standards and Technology, 2000-2001. [Co-Principal Investigator]

“Economic Analysis of Intellectual Property Protection Mechanisms for Research Partnerships,” Directorate for Social, Behavioral and Economic Sciences, U.S. National Science Foundation, 1999-2001. [Co-Principal Investigator.]

“Innovation-Related Knowledge Flows in European Industry: Mechanisms and Policy (KNOW)”, Targeted Socio-Economic Research Programme (TSER), Commission of the European Union, DG Research, 1999-2001. [Co-Principal Investigator]

"Science and Technology Policies Towards Research Joint Ventures (STEP-TO-RJVs)", Targeted Socio-Economic Research Programme (TSER), Commission of the European Union, DG Research, 1998-2000. [Co-Principal Investigator]

**(Selected) RESEARCH GRANTS, CONTRACTS (1994-1998)**

“Indicators for Science, Technology and Innovation,” National Statistical Agency of Greece, 1998. [Principal Investigator]

"An Inquiry into Research Joint Ventures of the European Union," Directorate for Social, Behavioral and Economic Sciences, U.S. National Science Foundation, 1997-1998. [Principal Investigator]

"The Effectiveness of Research Joint Ventures Sponsored by the ATP," Advanced

Technology Program, National Institute of Standards and Technology (NIST), 1996-1998. [Principal Investigator]

"Research and Development Cooperation in the United States," Directorate for Social, Behavioral and Economic Sciences, U.S. National Science Foundation, 1995-1996. [Principal Investigator]

"Survey of Small High Technology Firms," Office of the Chief Counsel for Advocacy, U.S. Small Business Administration, Washington, D.C., 1995-1998. [Co-Principal Investigator]

"Research into Economic Methodology and Models for Assessing Impacts of NASA Life Science Research Investments," Life and Biomedical Sciences and Applications Division, National Aeronautics and Space Administration (Headquarters), 1995-1996. [Investigator]

"R&D Project Selection in the Public Sector," National Aeronautics and Space Administration (NASA), 1995. [Principal Investigator]

"Inter-Firm Strategic Alliances in Information Technology: The Case of Developing Countries," Private Sector Development, The World Bank: Washington, D.C., 1995. [Principal Investigator]

"Factors Affecting Demand for NIST Calibration Services," National Institute of Standards and Technology, U.S. Department of Commerce, 1992-1994. [Co-Principal Investigator]

"An Extended Model of Cooperation and Competition in R&D," Young Scholar Incentive Award and University Facilitating Fund Award, The George Washington University, Summer 1994. [Principal Investigator]

## **TEACHING**

### i. Current Teaching Assignments, GW

#### A. *Department of Economics*

“Economics of Technological Change”, graduate course, Fall term

#### B. *Science, Technology and Public Policy Program*

“Technology Creation and Diffusion”, graduate course, Fall term

“Technology Collaboration: Incentives and Policy for Strategic Alliances”, graduate course, Spring term

ii. Courses Offered Regularly in Previous Years, GW

A. *Department of Economics*

“Managerial Economics”, MBA course

“Intermediate Microeconomics”, undergraduate course

B. *Science, Technology and Public Policy Program*

“Technology and International Economic Competitiveness”, graduate course

“Science, Technology, and International Affairs”, graduate course, team-taught with Professor Robert Rycroft

“Technology and Globalization”, graduate seminar (capstone), team-taught with Professor Robert Rycroft.

iii. Short Courses, non-GW

“Incentives and Policy for Strategic Technical Partnerships”, 6-lecture series, MIEM Program, SDA, Luigi Bocconi University, Milan, Italy. (Delivered annually since 1999).

“Strategic Business Partnerships”, 6-lecture series, Professional Masters Program in Decision Sciences, Athens University of Economics and Business, Athens, Greece. (delivered annually since 2001).

**OTHER PROFESSIONAL ACTIVITIES**

i. Executive Training Seminars

Developed an executive training seminar on **crafting strategic partnerships**. Versions of the seminar (1-3 days long) have been delivered during the past few years to both industry

and government audiences in the US and abroad. Longer, more traditional educational versions are being delivered to business schools like Luigi Bocconi University and the Athens University of Economics and Business (see above).

Developed a professional training seminar on the **knowledge-based economy**. The seminar (1 day long) has until now been delivered repeatedly to US government audiences.

ii. Seminar Series

Organizer of the **Technology and Innovation** Seminar Series at GW. Seminars are held once a month at the Center for International Science and Technology Policy. Average attendance during the term 2001-2002: 40 strategy and policy scholars, advisers, and professionals from the greater Washington metropolitan area.

iii. R&D Program Evaluation

Co-founder of the Washington Research Evaluation Network (WREN). Co-Principal organizer of the first international conference at the George Washington University, December 4-5 2003. Co-organizer of the second international conference of WREN in collaboration with the European Commission, Brussels, June 17-18, 2004.

Have been involved in various initiatives relating to R&D program evaluation in the United States, Europe, Japan and South Korea for several years. Such initiatives include evaluation studies, relevant conference presentations, and advisory work. Examples of collaborating organizations include:

United States: National Institute of Standards and Technology, Advanced Technology Program, Department of Energy, NASA.

Europe: European Commission (DG Research, DG Information Society), National Statistical Agency of Greece.

Japan: METI, Mitsubishi Research Institute.

South Korea: Korea Institute of S&T Evaluation and Planning (KISTEP).

iv. Referee for:

*Strategic Management Journal*

*International Journal of Industrial Organization*

*Journal of Industrial Economics*

*Journal of Economic Behavior and Organization*

*Review of Industrial Organization*  
*R&D Management*  
*Zeitschrift Fur Nationaloekonomie*  
*Economica*  
*World Development*  
*Management Science*  
*Journal of Policy Analysis and Management*  
*Journal of Policy Reform*  
*Journal of Small Business Economics*  
*Science and Public Policy*

IV. Reviewer and Referee for:

*National Science Foundation.*  
*Oxford University Press.*  
*Cambridge University Press.*  
*McGraw-Hill, Inc.*  
*Scott, Foresman & Co.*  
*South-Western College Publishing*  
*General Administration of Research and Development (GGET, Greece).*

v. Affiliations – Societies

American Economic Association (AEA).  
European Economic Association (EEA).  
International Joseph A. Schumpeter Society.  
Industrial Organization Society.  
European Association for Research in Industrial Economics (EARIE).

vi. Expert Committees - Testimony

Member of the High-level Expert Panel for the 5-Year Assessment of the EU Framework Programmes on Research and Technological Development, Directorate General Research, European Commission (May 2004 – December 2004).

Member of the Panel for the project “Innovation Models for Aerospace Technologies”, Board on Science, Technology and Economic Policy, US National Academies of Science (NAS), (Spring 2004 – Spring 2005).

Member of the Working Group on “Innovation Infrastructure and the Environment” for the “National Innovation Initiative”, organized by the US Council on Competitiveness (February 2004 – December 2004).

Member of the Subpanel of the Basic Energy Sciences Advisory Committee (BESAC) of the Department of Energy to examine DOE’s Office of Science approach to performance measurement in view of GPRA (Jan. 24-25, 2002)

Member of STRATA-ETAN Expert Group on Intellectual Property Rights in Publicly Funded Research & Development (European Commission – 2001-2003)

Member of STRATA-ETAN Expert Group on Intellectual Property Rights in International Collaboration (European Commission – 2000-2001)

Testified in joint hearings by the Federal Trade Commission and the Antitrust Division, US Department of Justice on the potential usefulness of guidelines on research joint ventures (May 1997)

### **STUDY AWARDS/DISTINCTIONS**

Fellowship, New York University, 1986-1988.

Scholarship, New York University, 1984-1986.

Developmental Fellowship, New York University, 1983-1984.

M.A. degree awarded with *distinction*, Leicester University (U.K.), 1983.

### **OTHER ACTIVITIES**

Media communications (Wall Street Journal, U.S. News, Greek Voice of America, ERT 1 (Greek public radio), Kerdos (Gain, a Greek financial weekly), etc.

Faculty mentor for the Hellenic Club KOSMOS at the George Washington University, 1993 - present.

Secretary and Member of the Board, The Hellenic Society PROMETHEAS, Washington, D.C., 1992 - 1996.

President, Graduate Economics Student Association, New York University, 1984 - 1986.

### **LANGUAGES**

Fluent in Greek and English. Limited knowledge of French and Spanish.

**PERSONAL**

Born May 6, 1958. Married, two children.

**MILITARY SERVICE**

Greek Navy, 1989 – 1990.

**NATIONALITY**

Greece; United States of America.

**(Selected) PRESENTATIONS Jan. 1999 – Dec. 2004**

“Real Options Framework to Assess Research Investments at the US Department of Energy”, Department of Energy, Washington DC, December 6, 2004.

Panel discussant, Annual meetings of the American Evaluation Association, Atlanta, Georgia, November 8, 2004.

“The Knowledge-Based Economy: Key Characteristics and Implications”, 1-day seminar presentation, National Security Agency, Maryland, October 15, 2004.

“Networks in Evaluating Public Investments in Science and Technology”, presented at the Workshop on “Performance Assessment of Public Research, Technology and Development (RTD) Programmes”, organized by the European Commission in cooperation with the Washington Research Evaluation Network, Brussels, June 17-18, 2004.

“Networks in Evaluating Public Investments in Science and Technology”, presented at the Workshop “Network Analysis: Exploring Pathways among Three Hubs”, organized by RAND Europe, Brussels, June 16, 2004.

“Strategic Business Partnerships”, series of nine lectures, Professional MBA Program, Decision Sciences, Athens University of Economics and Business, Athens, Greece, June 2004.

“Partner Choice”, presented at the 10<sup>th</sup> biennial conference of the International Joseph A. Schumpeter Society, Luigi Bocconi University, Milano, Italy, June 10, 2004.

“Incentives and Policy for Strategic Technical Partnerships”, series of six lectures, MBA Program, Bocconi University, Milan, Italy, May 12-14, 2003.

“M-commerce”, presentation of sectoral report, final meeting (open to the public) for the project “The Emerge of New Industrial Activities: Fusing Services and Manufacturing” (TENIA), European Commission, DG Research, Brussels, February 2, 2004.

“Innovation Networks”, invited series of four lectures on indicators, empirical research, industry-university relationships, and policy implications, Joanneum Research, Vienna, Austria, December 15-16, 2003.

“Planning, Conducting, and Using the Results of Evaluation Studies as PART Evidence/Data and for Program Management—Focus on Basic Research Programs”, panel chair; and

- “Coming Challenges for R&D Programs and for WREN”, plenary panel participant, Conference of the Washington Research Evaluation Network, The George Washington University campus, December 4-5, 2003.
- “U.S. Science, Technology and Innovation Policy: Continuity and Change”, STEPI Forum, Science and Technology Policy Institute (STEPI), Seoul, Korea, October 24, 2003.
- “Assessing Public R&D Programs in the United States: Priority Setting, Monitoring, Impact Appraisal”, International Symposium on “National R&D and Its Evaluation toward Global Innovation”, Korea Institute of Industrial Technology Evaluation and Planning (ITEP), Ministry of Commerce, Industry and Energy, Seoul, Korea, October 22, 2003.
- “Technology Licensing”, paper presented at the OECD Conference on “IPR, Innovation and Economic Performance”, OECD Headquarters, Paris, France, August 28-29, 1003.
- “Strategic Business Partnerships”, series of nine lectures, Professional MBA Program, Decision Sciences, Athens University of Economics and Business, Athens, Greece, June 2003.
- Chair, Session on R&D Network Evaluation, and panelist, conference “Evaluation of Government-Funded Activities”, organized by Plattform fteval, Joanneum Research, and Zentrum fur Europaische Wirtschaftsforschung GmbH (ZEW), Vienna, Austria, May 15-16, 2003.
- “Incentives and Policy for Strategic Technical Partnerships”, series of six lectures, MBA Program, Bocconi University, Milan, Italy, May 12-14, 2003.
- “Information Technology, Competitiveness, and Economic Growth”, 12<sup>th</sup> Conference of Economic Policy Studies “Competitiveness, New Technologies and Sources of Development”, Athens University of Economics and Business, Athens, Greece, May 9, 2003.
- “R&D Collaboration”, workshop on “Research and Development Data Needs”, National Academy of Sciences, Board on Science, Technology and Economic Policy, Washington, D.C., April 7, 2003.
- “Technology Licensing Under Competitive Pressure”, paper presented at the International Industrial Organization Conference, Industrial Organization Society, Northeastern University, Boston, April 4, 2003.
- “Building Competitive Firms: Policy Examples from the Americas”, presentation at the

- workshop “Innovation: Determining Factors and the Future of the Greek Economy”, Athens University of Economics and Business, March 27, 2003.
- “The Knowledge-Based Economy: Key Characteristics and Implications”, seminar organized by the Greek Ministry of Economics and Finance, Secretariat for the Information Society, Athens, Greece, January 24, 2003.
- “Collaborate to collude? Multimarket and multiproduct contact in R&D”, Athens University of Economics and Business, Athens, Greece, January 23, 2003.
- “Innovation Network Indicators”, RAND Corporation, Pentagon City, VA, December 4, 2002.
- “Collaborate to collude? Multimarket and multiproduct contact in R&D”, Annual Meetings of the Southern Economic Association, New Orleans, November 25, 2002.
- “Advanced Technology Program Information Infrastructure for Healthcare: Case Studies from a Focused Program”, Annual Meetings of the American Evaluation Association, Crystal City, Virginia, November 9, 2002.
- “The Knowledge-Based Economy: Key Characteristics and Implications”, 1-day seminar presentation, Central Intelligence Agency, Arlington, Virginia, November 5, 2002.
- “Alliance cycles”, presentation at the 29<sup>th</sup> Annual Conference of the European Association for Research in Industrial Economics, Madrid, Spain, September 6, 2002.
- “The Knowledge-Based Economy: Key Characteristics and Implications”, 1-day seminar presentation, National Security Agency, Maryland, June 13, 2002.
- “Alliance cycles”, presentation at the Summer 2002 Conference of the Danish Research Unit for Industrial Dynamics (DRUID), Copenhagen, Denmark, June 7, 2002.
- “The Appraisal of Socio-Economic Impact of R&D Programs”, Science and Technology Policy Institute (STEPI), Seoul, Republic of Korea, May 29, 2002.
- “The Appraisal of Socio-Economic Impact of R&D Programs”, Korea Institute of S&T Evaluation and Planning (KISTEP), Seoul, Republic of Korea, May 29, 2002.
- “Alliance cycles”, seminar, Science and Technology Policy Institute (STEPI), Seoul, Republic of Korea, May 28, 2002.

- “Incentives and Policy for Strategic Technical Partnerships”, series of six lectures, MBA Program, Bocconi University, Milan, Italy, May 20-23, 2002.
- “Research partnership performance”, presented at 1-day workshop on strategic alliances, School of Business, University of British Columbia, Vancouver, Canada, April 27, 2002.
- “The Knowledge-Based Economy: Key Characteristics and Implications”, 1-day seminar presentation, Central Intelligence Agency, Arlington, Virginia, April 23, 2002.
- “Alliance Cycles”, presented at the 9<sup>th</sup> biennial conference of the International Joseph A. Schumpeter Society, University of Florida, Gainesville, Florida, March 29, 2002.
- “Scientific and Technological Development in the Americas”, guest-speaker presentation, Inter-American Defence College, Washington, D.C., January 14, 2002.
- “S&T Policy for the Knowledge-Based Economy”, presented at the Science and Technology Offsite Seminar, OES science Directorate, U.S. Department of State, National Foreign Affairs Training Center, Arlington, VA, October 31, 2001.
- “The Knowledge-Based Economy”, presentation for the Minerva Program, Institute of Brazilian Business and Public Management Issues, George Washington University, October 26, 2001.
- “Intellectual Property Protection Mechanisms in Research Partnerships”, lead presentation at the international workshop with the same title organized by the Center for International Science and Technology Policy, George Washington University, October 21, 2001.
- “Macroeconomic Perspectives on Technical Change”, presented at the meeting for the project “Assessment of the Socio-economic Impact of the Framework Programme”, European Commission, DG Research, Brussels, Belgium, June 18, 2001.
- “The Knowledge-Based Economy: Key Characteristics and Implications”, 1-day seminar presentation, Central Intelligence Agency, Arlington, Virginia, June 4, 2001.
- “Incentives and Policy for Strategic Technical Partnerships”, series of six lectures, MBA Program, Bocconi University, Milan, Italy, May 21-23, 2001.
- “Knowledge-based: Business Meets Policy”, seminar presentation, Department of Management Science and Technology, Athens University of Economics and Business, Athens, Greece, March 19, 2001.

- “European Science and Technology Policies Towards Research Joint Ventures”, presented at the conference “The Contribution of Socio-Economic Research to the Benchmarking of RTD Policies in Europe”, European Commission, DG Research, Brussels, March 15, 2001.
- “The Knowledge-Based Economy: Key Characteristics and Implications”, 1-day seminar presentation, Central Intelligence Agency, Arlington, Virginia, February 7, 2001.
- “Scientific and Technological Development in the Americas”, guest-speaker presentation, Inter-American Defense College, Washington, D.C., February 5, 2001.
- “The Knowledge-Based Economy: Key Characteristics and Implications”, 1-day seminar presentation, Central Intelligence Agency, Arlington, Virginia, December 6, 2000.
- Led ½-day executive seminar, “Crafting International Strategic Business Partnerships”, organized by the National Association of State Development Agencies and the Elliott School of International Affairs, sponsored by IBM, COMDEX, Las Vegas, Nevada, November 14, 2000.
- “Science and Technology Policy Initiatives in the Americas”, presented at the Expert Group Meeting on Coordination of Technology Policies to Increase Productivity and Competitiveness within the Global Context: Capability Building Initiatives for the Twenty First Century, Beirut, Lebanon, November 1, 2000.
- “Real Options Approach for Evaluating Public Sector R&D”, presented at the US-European Workshop “Learning from Science and Technology Policy Evaluation”, jointly organized by Fraunhofer ISI and Georgia Institute of Technology, Bad Herrenalb, Germany, September 13, 2000.
- “Towards the Knowledge-Based Economy: United States and Its APEC Partners”, seminar presentation, Central Intelligence Agency, Arlington, VA, July 26, 2000.
- “Technology Policy in the United States and the European Union: Shifting Orientation towards Technology Users”, invited presentation at the Science and Technology Policy Institute (STEPI), Seoul, Korea, July 1, 2000.
- “Towards the Knowledge-Based Economy: United States and Its APEC Partners”, presented at the APEC Symposium “Preconditions, Policies and Cooperative Potential for Promoting Knowledge-based Economies in APEC, Seoul, Korea, June 30, 2000.
- “Incentives and Policy for Strategic Technical Partnerships”, series of six lectures, MBA

Program, Bocconi University, Milan, Italy, May 8-11, 2000.

“Technology Policy in the United States and the European Union: Shifting Orientation Towards Technology Users”, Brown Bag Seminar Series, Elliott School of International Affairs, The George Washington University, March 1, 2000.

“Scientific and Technological Development in the Americas”, guest-speaker presentation, Inter-American Defense College, Washington, D.C., January 21, 2000.

“Bundling Negotiations: An Efficiency Rationale for Multiproject Contact in Research Joint Ventures,” presented at the 2000 Annual Convention of the American Economics Association (AEA), Boston, January 7-9, 2000.

Lead the 3-day seminar “Crafting Successful International Strategic Business Partnerships”, Training Lebanese industry managers. This case study-intensive seminar links theory and practice around the globe, emphasizing the why and how-to-do-it aspects of partnerships. Organized by the Lebanese American University, Byblos, Lebanon, December 6-8, 1999. (With Elias Carayannis.)

“Science and Technology Policies in the New Millenium: Lebanon and the World” address of a group of prominent Lebanese representatives of government, industry, and academia. Organized by the Lebanese American University, Beirut, Lebanon, December 10, 1999.

Moderator of industry-academic panel on policy reform opportunities in “The Summit on Priorities for Federal Innovation Reform”, Conference organized by the National Science and Technology Council (White House) in association with the Council on Competitiveness, the Industrial Research Institute, the State Science and Technology Institute, the RAND Corporation, and the Woodrow Wilson Institute, Washington D.C., November 30 - December 1, 1999.

“Bundling Negotiations: An Efficiency Rationale for Multiproject Contact in Research Joint Ventures,” presented at the Southern Economic Association (SEA) meeting, New Orleans, November 21-23, 1999.

“Technology Policy in the United States and the European Union: Shifting Orientation Towards Technology Users”, presented at the 21<sup>st</sup> Annual Research Conference of the Association for Public Policy Analysis and Management (APPAM), Washington D.C., November 4-6, 1999.

“Strategic alliances in information technology and developing country firms: Policy perspectives,” guest-speaker presentation, Inter-American Defense College, Washington,

D.C., October 15, 1999.

“Incentives and Policy for Strategic Technical Partnerships”, series of six lectures, MBA Program, Bocconi University, Milan, Italy, May 3-5, 1999.

“Comparing ATP and non-ATP Research Joint Ventures”, presented at the Symposium on “The Advanced Technology Program: Challenges and Opportunities”, Board on Science, Technology and Economic Policy, National Research Council (NAS/NAE/IOM), Washington, D.C., March 29, 1999.

“Technology policy in the United States and the European Union”, “Technology incubators”, “Strategic alliances for developing countries: Policy perspectives”, presented at the Expert Group Meeting on S and T Policies for the 21<sup>st</sup> Century, organized by the United Nations (ESCWA), Beirut, Lebanon, March 9-11, 1999.

“Summary of Policy Position Papers”, presented at a workshop for the project “Science and Technology Policies Towards Research Joint Ventures”, National Technical University of Athens, Greece, January 23, 1999.