

Dr. J. Sylvan Katz
CURRICULUM VITAE

Science and Technology Policy and Research, University of Sussex

The Freeman Centre., Brighton, UK BN1 9RF

Web site: <http://www.sussex.ac.uk/spru>

Ergonic Resources Ltd.

Saskatoon, SK, CANADA S7K 6E1

Telephone: 1.306.934.4638 Fax: 1.306.934.2819 Email: j.s.katz@sussex.ac.uk

Personal Web site: <http://www.sussex.ac.uk/Users/sylvank/>

22 December, 2009

DATE OF BIRTH 16 September 1944, Wilksburg, Penn, USA
CITIZENSHIP Canadian, US and British
MARITAL STATUS Married
EDUCATION
1969 University of Saskatchewan, B.Sc., Biophysics (molecular biology/physics).
1971 University of Saskatchewan, M.Sc., Molecular biology.
1975 University of Saskatchewan, B.Sc., Computational Science (8 MSc. classes).
1993 University of Sussex, D.Phil., Science Technology & Innovation Policy.

APPOINTMENTS

2000-present CEO/President – Ergonic Resources Ltd., Saskatoon, SK., Canada
2002-2005 Senior Research Fellow, SPRU, University of Sussex, Brighton, UK
1996-2000 Senior Research Fellow, SPRU, University of Sussex, Brighton, UK
1993-1996 Research Fellow, SPRU, University of Sussex, Brighton, UK
1992-1993 Special Assistant to the Director General, NRC-PBI, Saskatoon, SK., Canada
1990-1992 Graduate Student, SPRU, University of Sussex, Brighton, UK
Katz Consulting and Management Ltd
1987-1990 Research Council Officer III, NRC-PBI, Saskatoon, SK., Canada
1984-1987 Executive Assistant to President, SCI-TEC Instruments Inc., Saskatoon, SK., Canada
1982-1984 Katz Consulting and Management Ltd, Saskatoon, SK., Canada
1977-1982 Custom Computing Systems Ltd. (President/Owner), Saskatoon, SK., Canada
1976-1977 Lecturer, Dept. Computer Science, University of Sask., Saskatoon, SK., Canada
1975-1976 Electronics Technician, LINAC, University of Saskatchewan, Saskatoon, SK., Canada

AFFILIATIONS

2008- Research Fellow, Science Metrix, Montreal, Canada
2006-2011 Visiting Fellow, SPRU, University of Sussex, UK
2005-2010 Adjunct Professor, Dept Mathematics and Statistics, University of Saskatchewan, Saskatoon, SK., Canada
2004-2007 Associate Researcher, INRS-Urbanisation, Culture and Society, Montreal, QC, Canada
2000-2002 Visiting Fellow, SPRU, University of Sussex, UK
1998-1999 Visiting Fellow, Research Evaluation and Policy Project, School of Social Sciences, Australian National University, Canberra, Australia

PROJECTS

The use of webometrics for the analysis of knowledge flows within the European Research Area (2009)

Explore the feasibility of elaborating indicators of relevance for an ERA monitoring on the basis of webometrics data. Framework Service Contract for Expert Support with the Production and Analysis of R&D Policy Indicators, European Commission

Western Canadian Functional Food and Natural Health Products Network (2006-2007)

Design, implement and evaluate the emerging structure and changes in the formal and informal structure of the Western Canadian functional food and natural health products network. An on-line survey was used to collect data for use with social network analysis methods.

WISER Project (2003-2005)

The Web Indicators for Science, Technology & Innovation Research Project (WISER) was funded by the Fifth Framework Programme of R&D of the European Commission (<http://www.wiserweb.org>). It explored the methods and problems of developing a new generation of Web based S&T indicators. A special issue of Research Evaluation edited by Sylvan Katz summarized the findings of the project.

Science Foresight Project (2001-2004)

Principle investigator for a UK Ministry of Defence contract performed as a collaborative project between SPRU and the UK Defence Science and Technology Laboratory (DSTL). World-class experts were selected from a variety of physical and engineering sciences using co-citation techniques and they were asked to identify emerging areas of hot scientific activity.

(<http://www.sussex.ac.uk/spru/foresight>)

Technical Competitive Intelligence (2001-2003)

Contracted to National Research Council of Canada to provide technical competitive intelligence to industrial technical assessors (ITAs) in its Industrial Research Assistance Program (IRAP) and to companies in the province of Saskatchewan that use the IRAP service.

Web Strategy (2001)

As part of a contract with for the Saskatchewan Government Information Technology Office by QCC Communications (Saskatoon) I was subcontracted to prepare a strategic plan of the use and development of the Saskatchewan Government website.

Impact of 'free' Patent database (2001)

A collaborative partner with Technopolis Ltd (Brighton, UK) on a European Commission (Enterprise DG) project that assessed the impact of free Internet based patent databases on commercial patent databases and SMEs.

Collaboration and Scientific Research (1999-2000)

A bibliometric evaluation of research collaboration activity among higher education institutions in the UK for the Higher Education Funding Council of England's (HEFCE) fundamental review of research policy and funding (joint project with David Smith, HEPU, University of Leeds).

Future of Plant Biotechnology in Canada (1987-1999)

Study of plant biotechnology research in Canada for the National Research Council of Canada resulting in the report *Plant Biotechnology in Canada: Prospects for the 1990's* published by the National Research Council of Canada

Emerging Sensor Technologies (1987)

Study of R&D activities and market growth for a new generation of sensors (micromechanical, semiconductor, chemical and biological sensors), Science Council of Canada

INDUSTRY EXPERIENCE

- CEO/president Ergonic Resources Ltd, Consulting/Boreal wetland & aquatic plant propagation
- Marketing, R&D management, licensing and patenting, SCI-TEC Instruments Inc, Saskatoon.
- Marketing, Develcon Electronics Ltd, Saskatoon.
- CEO/president Custom Computing Systems Ltd

TEACHING AND STUDENT SUPERVISION

- (1) *Managing your D. Phil.* as part of a research methods course for D. Phil. students
- (2) *Overview of bibliometric research* for SPRU graduate students
- (3) Supervisor, Scott Cunningham, D.Phil student, 'Information Retrieval Approaches to the Analysis of Scientific Databases'
- (4) Advisor on research technique to D. Phil/M. Sc. student, SPRU University of Sussex
- (5) Full-time lecturer, undergraduate course in computer science, University of Saskatchewan

RESEARCH CONTRACTS

A. Principal Investigator

- (1) Nov 2002 - Oct 2005. Web Indicator for Science, Technology and Innovation Research funded by the Fifth Framework Programme of R&D of the European Commission
- (2) Sept 2001 - March 2002. The Science Foresight Project, a collaborative project with Dstl funded by the UK Ministry of Defence

- (3) Sept 1999 - March 2000. Bibliometric evaluation and literature review of research collaboration for the Higher Education Funding Council of England's (HEFCE) fundamental review of research policy and funding (joint project with HEPU, University of Leeds).
- (4) Sept-Dec 1999. Prepare report on the use of bibliometric techniques to evaluate the social sciences for the UK Economic and Social Research Council (ESRC) fundamental review.
- (5) June 1997 - Sept 1999. Conversion of BESST database to Oracle 7.3.2 with a WWW interface and Perl scripts to generate dynamics html bibliometric interface.
- (6) April-May 1998. Conversion of bibliometric database to Oracle for researchers at the Research Evaluation and Policy Project, Research School of Social Sciences, Australian National University, Canberra
- (7) March 1998. Bibliometric evaluation of the impact of publications by DERA (UK Defence Research Agency).
- (8) Sept 1996 - Dec 1996. Bibliometric evaluation of the impact of publications in the environmental sciences by UK Natural and Environment Research Council (NERC) centres/surveys.
- (9) July 1993 - June 1995. BESST Project, Phase I. Development of BESST database and bibliometric examination of publication and collaboration trends between UK institutional sectors. Funded by OST, DTI, DoH, ESRC, EPSRC and MRC.
- (10) Jan 1994. Review of bibliometric evaluation methods for the Australian Department of Education, Employment and Training.
- (11) July 1995-May 1996. BESST Project Phase II. Update BESST database. In-depth exploration of publication and collaborative trends by UK firms and industrial sectors. Funded by OST, DTI, ESRC, EPSRC and MRC.

B. Researcher

- (12) March 1996. Links between University Physics Departments and Industry, for the Institute of Physics, UK
- (13) Nov 1996 - Feb 1997. Indicators for Systems of Innovation and System Interactions

PUBLICATIONS

Guest Editor

- Journal of Research Evaluation, 15 (2), 2006 – special issue on web indicators for innovation systems.

Refereed Journal Articles

- Katz J.S. and V. Cothey (2006), "Web indicators for complex innovation systems", *Journal of Research Evaluation*, 15 (2), pp. 85-95
- Katz J.S. (2006), "Indicators for complex innovation systems", *Research Policy*, 35, 893-909
- Katz J.S. (2004), "Scale-independent bibliometric indicators", *Measurement*, 31, 1, 24-28
- Katz J.S. (2000), "Scale independent indicators and research assessment", *Science and Public Policy*, 27, 1, 23-36
- Katz J.S. and L. Katz (1999), "Power laws and athletic performance", *Journal of Sport Science*, 17, 467-476
- Katz J.S. (1999), "The self-similar science system", *Research Policy*, 28, 501-517
- Katz J.S. and J. Plevin (1998), "Environmental science in the UK: A bibliometric study", *Research Evaluation*, 7 (1), pp. 39-52
- Katz J.S. and D.M. Hicks (1997), "Desktop scientometrics", *Scientometrics*, Vol. 38, No.1, pp 141-153
- Katz J.S. and B.R. Martin (1997), "What is research collaboration", *Research Policy*, 26, pp 1-18
- Hicks D.M. and J.S. Katz (1996), "Hospitals: a hidden research system", *Science and Public Policy*, 23 (5).
- Hicks D.M. and J.S. Katz (1996), "Where is science going?", *Science Technology and Human Values*, 21 (4) 379-406
- Katz J.S. (1996), "Bibliometric Standards: Personal experiences and lessons learned", *Scientometrics*, 35 (2) 193-197.
- Hicks D.M. and J.S. Katz (1996), "Science policy for a highly collaborative science system", *Science and Public Policy*, 23 (1) 39-44
- Katz J.S. and D.M. Hicks (1996), "A systemic view of British science", *Scientometrics*, 15 (1) 133-154

- Katz J.S. and D.M. Hicks (1995), "Policy or Process?", Proceedings of the Fourth International Science and Technology Conference, Antwerp, Belgium, 4-7 October.
- Katz J.S. and D.M. Hicks (1995), "The classification of interdisciplinary journals: A new approach", Proceedings of the Fifth Biennial Conference of the International Society for Scientometrics and Infometrics, Rosary College, ILL, Medford NJ: Learned Information Inc., pp245-255
- Hicks D.M. and J.S. Katz (1995), "The emergence of the highly connected science system", Proceedings of Learning and Competencies: Innovative paths in R&D Organisations, CNR, Rome, p17, 15 June
- Katz J.S. and L. Katz (1995), "Fractal Olympics", *Sports Medicine, Training and Rehabilitation*, 5, pp1-7
- Katz L. and J.S. Katz (1994), "Fractal (power law) analysis of athletic performance". *Sports Medicine, Training and Rehabilitation*, 5, pp1-11
- Wu and J.S. Katz (1994), "A study of the current levels of collaboration in science between Chinese and British researchers", *Chinese Journal of Scientific and Technical Journal Periodicals*, 5 (4) 9-12
- Katz J.S. (1994), "Geographic proximity and scientific collaboration", *Scientometrics*, 31 (1) 31-43
- Katz J.S. W. Steck (1989), "Canadian survey examines plant biotechnology prospects for the 1990's", *Trends in Biotechnology*, UK., pp135-137, 6 June
- Katz J.S. and M.W. Zink (1972), "The Regulation of malic enzyme in *Fusarium oxysporium*", *Canadian Journal of Microbiology*

Other Journal Articles

- Katz J.S. and D.M. Hicks, "International collaboration", *Nature*, 381 (6577) 16, 2nd May 1996.
- Katz J.S. and D.M. Hicks, "Questions of collaboration", *Nature*, 375, p99, 1995.
- Katz J.S., "An ancient cache of floppy disks", *New Scientist*, 26 December 1992.
- Katz J.S., "That which is not forbidden is mandatory", *BioTech Educ*, 4 (1), October 1990.
- Katz J.S., "Roses are black, violets are green", *New Scientist*, 6 January 1990.
- Katz J.S., "Green grow the dollars", *Policy Options, Inst. for Res. on Public Policy*, September, 1989.
- Katz J.S., "Novel sensor technologies: A Saskatchewan opportunity", *Frontiers*, Saskatchewan Government, Department of Science and Technology 1988.
- Katz J.S., "Emerging sensor technology: The promise and the threat", *Can. Chem. News*, March 1988.
- Katz J.S., "The electronic wordsmith", Cansus Communications, 1984.
- Katz J.S., "Fine tuning business bottlenecks", Cansus Communications, 1984.
- Katz J.S., "The incredible shrinking microcomputer", Cansus Communications, 1984.
- Katz J.S., "Tomorrow is too late" Cansus Communications, 1984.
- Katz J.S., "Push button promises" Cansus Communications, 1984.
- Katz J.S., "The information era's orphans", Cansus Communications, 1984.

Research Reports

- C. Ryan and J.S. Katz (2007), "Western Canadian Functional Food and Natural Health Products Network: An Analysis", National Research Council of Canada, BioAccess Commercialization Centre, March.
- Katz J.S. (2004), "Co-link web indicators of the European research area", WISER Project, Technical Report, funded by a grant from the Common Basis for Science, Technology and Innovation Indicators part of the Improving Human Research Potential specific programme of the Fifth Framework for Research and Technological Development" of the European Commission. (Contract HPV2-CT-2002- 00015) available at <http://www.sussex.ac.uk/Users/sylvank/pubs/Co-Link.pdf>
- D.J Holland Smith, A. Mathew, N.M. Kemp and J.S. Katz (2004), "A review of the co-citation based science foresight process, Defence Science and Technology Laboratory, UK Dstl/CR10342 1.0
- Katz J.S. and S. Stewart, "Science foresight project final report volume 1", Report number DSTL/TR01967 (BR-932209) 29th October 2001 available <http://www.sussex.ac.uk/spru/foresight/SFP-documents/SFPfinal.pdf>

- Smith D & Katz JS, "Collaborative approaches to research", prepared for HEFCE Fundamental Review of Research Policy and Funding, Sept 1, 2000 available at <http://www.hefce.ac.uk/research/Review/consult/collc.pdf>
- Katz J.S., *Bibliometric indicators and the social sciences* prepared for UK Economic and Social Research Council, December (1999) available at <http://www.sussex.ac.uk/Users/sylvank/pubs/ESRC.pdf>
- Katz J.S. and D.M. Hicks, *Bibliometric indicators for national systems of innovation* prepared for IDEA project funded by TSER program of the EC, ESRC Centre on Science, Technology, Energy and Environment Policy, Science Policy Research Unit, University of Sussex, Brighton, BN1 9RF, UK, 1997
- Katz J.S. and D.M. Hicks, *The changing shape of British industrial research*, STEEP Special Report No. 6, SPRU, 1997.
- Katz J.S. and D.M. Hicks, *UK corporate research collaboration, 1981-1994*. Final report to sponsors of BESST, Phase II: OST, DTI, MRC, EPSRC and ESRC.
- Katz J.S., D.M. Hicks, M. Sharp and B.R. Martin, *The changing shape of British science*, STEEP Special Report No. 3, SPRU, 1995.
- Katz J.S., D.M. Hicks, M. Sharp, B.R. Martin and E.N. Ling, *Bibliometric evaluation of sectoral scientific trends*. Final Report to OST, DTI, MRC, EPSRC, DoH, ESRC, SPRU, 1995.
- Katz J.S., "A bibliometric assessment of intranational university-university collaboration", D.Phil Thesis, University of Sussex, 1992.
- Katz J.S., "Canadian plant micropropagation study", *National Research Council of Canada*, 1990.
- Katz J.S., "Plant Biotechnology in Canada: Prospects for the 1990's", *National Research Council of Canada*, 1989.
- Katz J.S., "Emerging sensor technology: The promise and the threat", Science Council of Canada, Discussion paper, 1987.
- Katz J.S., "State of the art of switched digital networks", Develcon Electronics Ltd, 1981.
- Katz J.S., "The regulation of malic enzyme in *Fusarium oxysporium*", M.Sc. thesis, University of Saskatchewan, 1971.

Grey Literature

- Katz J.S and Nunes J., "[Two Radio Event Signatures](#)", Radio Sport Canada, Feb 2008
- Katz J.S., "[Dynamic Foresight](#)", The Centre for Innovation Studies,
- Katz J.S. and D.M. Hicks, "Desktop scientometrics", presented at 'Quantitative Approaches to Science and Technology Studies', Amsterdam, 21-24 May 1996 for the Workshop of the Network of European Centres in Science and Technology Studies (NECSTS) in cooperation with the European Society for the Study of Science and Technology (EASST),
- Katz J.S., "A Systemic view of R&D Impact", Proceedings of Measuring R&D Impact, Second International Symposium, Ottawa, Canada, 13-15 September 1995.

Web sites

- Personal Research Website - <http://www.sussex.ac.uk/Users/sylvank>
- WISER Project – <http://www.wiserweb.org>
- Web Indicators Portal - <http://www.webindicators.org>
- Science Foresight Project - <http://www.sussex.ac.uk/spru/foresight>
- Radio Sport Canada – <http://www.radiosport.ca>

Seminar and Conference Presentations

- "Complex Innovation Systems and Research Evaluation: A Scale Independent Perspective", Physics Department, University of Saskatchewan, Jan 15, 2009
- "Indicators for complex innovation systems – a scale independent view", BlueSky II, What Indicators for Science, Technology and Innovation Policies in the 21st Century?, Ottawa, Canada September 25-27, 2006
- "Indicators for complex innovation systems", University of Calgary, February, 2006
- "The Canadian innovation system – a scale-independent model", InnoCom Conference: Kananaskis, Alberta, October, 2003
- "The Canadian innovation system – a scale-independent model", THECIS workshop, Calgary, Alberta, 2003

- "The Canadian innovation system – a scale-independent model", The Knowledge based Economy and regional economic development, St. Johns, NL, Oct, 2003
- "Innovation indicators from dynamic foresight", Science and Technology Policy Research, University of Sussex, Brighton, UK (Dec, 2002), CINDOC, Madrid Spain (Dec 2002) and Charles Stuart University, Madrid Spain (Dec 2002)
- "The Science Foresight Project", UK MoD, London, UK (Dec 2001)
- "The self-similar science system", Science and Technology Policy Research, University of Sussex, Brighton, UK (Sept 1999)
- "Power laws, similarity and diversity in national systems of innovation", International Conference on Science and Technology Indicators, Hinxton, England (June 1998)
- "How much is collaboration worth: a calibrated bibliometric model", presented at Fifth International Scientometric and Informatics Conference, Jerusalem, Israel, (June, 1997).
- "Desktop scientometrics", presented at 'Quantitative Approaches to Science and Technology Studies', Amsterdam, 21-24 (May 1996)
- "The Changing Shape of British Science", Science Policy Support Group, British Library, London (Jan 1996)
- "The Changing Shape of British Science", KEW Gardens (Mar 1996)
- Seminar at History, Philosophy and Communication of Science Department, Systemic Studies of British Science, University College London (Nov 1995)
- "Policy or Process?", International Conference on Science and Technology Indicators, Antwerp, Belgium (Oct 1995)
- "A Systemic View of R&D Impact", Second International Symposium on Research Funding, Measuring R&R Impact, Ottawa, Canada (Sept 1995)
- "Bibliometric Standards: Personal Experiences and Lessons Learned", Fifth Biennial Conference of the International Society for Scientometrics and Infometrics, Rosary College, USA (July 1995)
- "The Classification of Interdisciplinary Journals: A New Approach", (with D. Hicks) the Fifth Biennial Conference of the International Society for Scientometrics and Infometrics, Rosary College, USA (July 1995)
- "Intra-national University-University Collaboration", International Conference on Bibliometrics, Informatics and Scientometrics, Berlin, Germany (Sept 1993)

COMMITTEES AND BOARDS

- Founding member, Canadian Science and Innovation Indicators Consortium
- Fellow, The Centre for Innovation Studies, Calgary, Alberta, Canada (<http://www.thecis.ca>)
- Editorial Board, Cybermetrics, International Electronic Journal of Scientometrics, Informetrics and Bibliometrics, ISSN 1137-5019, 2001 (<http://www.cindoc.csic.es/cybermetrics/>)
- Editorial Advisory Board, Scientometrics: An International Journal for all Quantitative Aspects of the Science of Science, Communication in Science and Science Policy, ISSN 0138-9130, 2000-2001
- Chairperson, Information IT Management Group, SPRU. 1998-2000
- University of Sussex, Committee of the Council, Sub-committee of planning and resources, Computer Facilities and Services Committee, 1998-2000
- Program committee, Sixth International Scientometric and Informatics Conference, Mexico, June 1999.
- Program committee, Fifth International Scientometric and Informatics Conference, Jerusalem, Israel, June 1997.
- Program committee, Second International Symposium: Measuring R&D Impact, Ottawa, Canada, 12-15 September 1995.
- Program committee, Fourth International Scientometric & Informatics Conference, Chicago, USA, 6-11 June 1995.
- Organising committee, Bibliometric Standards Workshop, Chicago, USA, June 1995.
- File server committee, SPRU, 1995.
- ESRC Resources Centre Committee, SPRU, 1993.
- Secretary, Plant Biotechnology Fund, NRC Plant Biotechnology Institute, 1988-90.
- Chairman, Staff Association, Plant Biotechnology Institute, 1988-89.
- Executive, Saskatoon Technology Committee, Board of Trade, 1982-1987.

- Steering committee, *Requirements for Success: Analysis of High Technology Marketing Organisations*, College of Commerce, University of Saskatchewan, 1985-1986.
- Technical committee, SEDCO Innovation Centre, Saskatoon, Saskatchewan, 1982-1984.