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## RESUME

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### ACADEMIC DEGREES

1997 D.Sc. Urban and Regional Planning Program. Faculty of Architecture and  
1981 M.Sc. Urban and Regional Planning Program. Faculty of Architecture and  
1975 B.A. Geography and Political Science. Faculty of Social Sciences, Haifa  
Haifa, Israel.

### ACADEMIC APPOINTMENTS

2018 Professor Emeritus, Faculty of Architecture and Town Planning, Technion.  
2017 Visiting Professor, Faculty of Architecture, Munich University of Technology.  
2015 - Full Professor, Faculty of Architecture and Town Planning.  
2013 – 2014 Visiting Scholar, Department of Geography and Environment at London  
school of Economics, London, UK.  
Since Jan. 2011 Senior Research Fellow, The Samuel Neaman Institute for Advanced studies  
in In Science and Technology, Technion.  
Since May 2009 Associate Professor, Faculty of Architecture and Town Planning.  
Since July 2005 Tenure  
1999 - 2009 Senior Lecturer, Faculty of Architecture and Town Planning.  
2003 (Jan.-Sep.) Visiting Scholar, Center for Urban and Regional Analysis, Department of  
Geography, Ohio State University, Columbus OH, USA.  
1998 - 1999 Adjunct Senior Teaching Associate, Faculty of Architecture and Town  
Planning.  
1998 - 1999 Senior Research Associate, Center for Urban and Regional Studies, Faculty  
of Architecture and Town Planning.

- 1987 - 1998      Research Associate, Center for Urban and Regional Studies, Faculty of Architecture and Town Planning.
- 1987 - 1997      Adjunct Teaching Associate, Faculty of Architecture and Town Planning.
- 1982 - 1999      Research Associate, The S. Neaman Institute for Advanced Studies in Science and Technology.
- 1976 - 1977      Research Assistant, Center for Urban and Regional Studies, Faculty of Architecture and Town Planning.

## **PROFESSIONAL EXPERIENCE**

- 1988- 1998      Research Coordinator, Center for Urban and Regional Studies, Faculty of Architecture and Town Planning, Technion, Haifa, Israel.
- 1979-1982      Planner in the Local Planning Council - Krayot, Kiryat Motzkin, Israel.
- 1977-1979      Director of the Urban Planning Department - M.R.B. Engineering Ltd, Haifa, Israel.

## **RESEARCH INTERESTS**

- Land Use Projection Models, Urban sprawl
- Regional and Metropolitan Planning; Strategic spatial Planning
- Urban Spatial Dynamics, Spatial Justice,
- Regional Aspect of Technology Diffusion; Technology Transfer; Innovation Ecosystems.

## **TEACHING EXPERIENCE**

### **Courses taught (last 3 years)**

Studio 4: Metropolitan and Regional Planning. Graduate compulsory studio course, 30 students.

Land Use Planning – Principles and Quantification. Graduate compulsory course, 35 students.

Urban Geography: Under-Graduate and Graduate, 70 students.

### **Course and program development**

2006-12      Development (with Prof. Alterman, R. and Prof. Doytsher, Y.) of a new Masters program - MUE - Master of Urban Engineering.

2006-07      Development (with Prof. Doytsher, Y.) of the "Ofek" ('Horizon') program which enables high-achieving undergraduate students in Geo-information to fast-track entry into the graduate program of the Urban and Regional Planning.

2007-09 Development (with Associate Prof. Tal Alon-Mozes) of the "Nof-Arim" ('City-Landscape') program which enables high-achieving undergraduate students in Landscape Architecture to fast-track entry into the graduate program of the Urban and Regional Planning.

### **TECHNION ACTIVITIES**

Since 2018 - Leading and representing the Technion in the EIT – Urban Mobility consortium

Since 2016 - Member of the Technion's prizes committee for academic Excellence

Since 2015 - Member of the Technion's academic staff excellence awards committee

Since 2014 - Representative of the Faculty in the Technion Senate.

Since 2011 - Representative of the Technion in the Israel National Planning and Building Board.

2005 - 2011 Deputy Representative of the Technion at the Israel National Planning and Building Board.

### **DEPARTMENTAL ACTIVITIES**

2014 - 2017 Associate Dean of Architecture and Town Planning for Research, Graduate Studies and Faculty Development.

Since 2010 Member of the Faculty's senior management committee.

2009 - 2013 Elected Member of the Faculty of Architecture's Committees for  
2014 - 2017 Faculty Appointments and Promotions ("Faculty Preparatory Committee").

Since 2009 Member of the Board, Center for Urban and Regional Studies.

2004 - 2013 Chairman, Graduate Program in Urban and Regional Planning at the Faculty of Architecture and town planning Technion.

2010 - 2011 Member of the Undergraduate Program in Landscape Architecture Committee.

2000 - 2004 Coordinator of the faculty's weekly colloquium.

2000 - 2004 Member of the faculty's library committee.

2000 - 2013 Member of the Admission Committee, Graduate Program in Urban and Regional Planning.

2004 - 2009 Member of the Faculty Development Committee

## **PUBLIC PROFESSIONAL ACTIVITIES**

### **Professional Committees**

Since 2012-17 Member of the National R&D Committee for Advance Research and Development in the Periphery, Israel National Council for Research & Development, Ministry of Science and Technology.

Since 2010-19 Member of the European Regional Science Association Council.

Since 2010-19 President of the Israeli Section in the International Regional Science Association.

### **Editorial**

Since 2014 - Journal of Architectural and Planning Research. Member of the Editorial Board.

Since 2013 - Today Social Science Published by Science and Education Centre of North America. Member of the Editorial Board.

### **Occasional Reviewer for Journals (Various years):**

*Journal of the American Planning Association*

*Urban Geography*

*Regional Studies*

*Urban Studies*

*The Annals of Regional Science*

*Land Use Policy*

*Landscape and Urban Planning*

*Environment and Planning B*

*Research Policy*

*Technovation*

*Applied Spatial Analysis and Policy*

*Italian Journal of Regional Science*

## **MEMBERSHIP IN PROFESSIONAL SOCIETIES**

Regional Studies Association (RSA)

The International Regional Science Association (IRSA)

The European Regional Science Association (ERSA)

The Israel Association of Planners

Israeli Section of the Regional Science Association

## FELLOWSHIPS, AWARDS AND HONORS

- 1997 Karplus prize for outstanding Doctoral Thesis.
- 2000 Canadian Morley Blankstein Academic Lectureship in Architecture and Town Planning.
- 2001 Canadian Morley Blankstein Academic Lectureship in Architecture and Town Planning.
- 2018 Recipient of the Israel Planners' Distinguished Award (Yekir HaTichnun) for 2018 (the highest honor in the planning field in Israel granted by the Israel Planners' Association).

## GRADUATE STUDENTS

### **Supervision of graduate students' extended papers in the non-thesis track (completed)**

1. Haike Michal, 2000. "Foreign Workers and their Impact on the City of Tel Aviv."
2. Harel Haya, 2000. "The City Skyline as an Indicator of Economic Strength."
3. Kaplan Guy, 2000. "Shifting from Private Cars to Train as a Solution to the Traffic Congestion in the Tel Aviv Metropolitan Area."
4. Tavor Oren, 2000. "Defining the Borders of the Tel Aviv Metropolitan Area."
5. Tenenboum Guy, 2000. "Trapped Land Use' within the Built-up Area of Edge Cities."
6. Abramovich Armin, 2001. "Environmental Conflicts in Metropolitan Areas."
7. Erez Miryam, 2001. "Cross Borders Development - Models for Cooperation Across State Border."
8. Ginat Dror, 2001. "Amalgamation as a Tool for Efficient Management of Local Government in the Urbanized Core of Israel."
9. Haber Shi, 2001. "Spatial and Demographic Characteristics of the former USSR immigrants in Tel Aviv."
10. Kreminer Anat, 2001. "Israel's Urban Core as a World City"
11. Yari Alon, 2001. "The Implications of Israel's land Policy on the Development of the Tel Aviv Metropolitan Area."
12. Dresler Ran, 2002. "The Role of Planning in Moderating Conflicts in Divided Cities, As Demonstrated in the Nazareth Region."
13. Anan Salama, 2004. "Programmatic Considerations in Allocating Land in Arab Settlements in Israel."
14. Yoav Dan, 2013. "The impact of the program to move the IDF Cantonment to the Negev on the spatial development of Be'er Sheva Metropolitan region."

## Completed Theses

### M.Sc Theses

1. **Miller Michal**, year of graduation 2004. "The Technological Incubators in Israel: Technological Policy in an Era of Privatization", Principle Supervisor: Dr. Amnon Frenkel, Prof. Dani Shefer as Co. Supervisor. Currently working at P.G.L - Transportation Engineering & Planning Ltd.
2. **Harel Haya**, year of graduation 2004. "Maintenance of High Rise Residential Buildings: Alternatives for Distribution of Maintenance Cost", Principle Supervisor: Dr. Amnon Frenkel, Prof. Dani Shefer as Co. Supervisor.
3. **Ashkenazi Maya**, year of graduation 2005. M.Sc. Thesis with distinction: "Urban Sprawl and the Israeli Urban Landscape". Principle Supervisor: Dr. Amnon Frenkel, Prof. Dani Shefer Co. Supervisor. Currently working as Lieutenant-Colonel in the Israeli Air Force - head of projects section, Projects Branch, Construction Department of the IAF. **Received the 2005 Israel Planners Association prize for excellent thesis.**
4. **Amit Epstein**, year of graduation 2009. "Location Choice of High-Tech Firms in the Tel Aviv Metropolitan Area". Principle Supervisor: Dr. Amnon Frenkel. Currently works as planner in OFFQ Ltd.
5. **Amin Sahala**, year of graduation 2009. Thesis: "Suburbanization and Urban Sprawl in Israeli Arab Towns and its Consequences. Principle Supervisor: Associate Prof. Amnon Frenkel. Currently working as City engineer in Tamra Arab Town. Admitted to the Ph.D. Program in Urban and Regional Planning in the Faculty of Architecture and Town Planning, Technion. **Received the 2009 Israel Planners Association prize for excellent thesis.**
6. **Eran Baider**, year of graduation 2010. "Spatial Distribution of Business R&D in Israel: Implication for Regional Policy". Principle Supervisor: Associate Prof. Amnon Frenkel. Currently works in private company.
7. **Nadav Platin**, Year of graduation 2016. "The Intensity of Re-Urbanization Processes in Israel". Principle Supervisor: Prof. Amnon Frenkel. Currently works in private company.
8. **Aviv Moran**, Year of graduation 2016. "Gaps in Spatial Capital between Haifa Neighborhoods". Principle Supervisor: Associate Prof. Amnon Frenkel.
9. **Roy Zaidenberg**, Year of graduation 2017. " Mapping Stakeholder's Perceptions gaps of Ecosystem Services in Two Rural Communities: A Case study". Co. Supervisor: Prof. Amnon Frenkel, Principle Supervisor: Assistant Prof. Daniel Orenstien.
10. **Maya Tzunz**, Year of graduation 2017. "Relationships between people and biodiversity in public gardens: a case study in Netanya" Co. Supervisor: Prof. Amnon Frenkel, Principle Supervisor: Assistant Prof. Assaf Shwartz.

### PhD theses

11. **Idan Porat**, year of graduation 2009. "Spatio-Temporal Polycentricity Analysis of Re-urbanization: The Case Study of the Built Area in the City of Tel Aviv". Associate Professor Amnon Frenkel with Associate Professor Maxim Shoshany from the Faculty

of Civil and Environmental Engineering. **Receive the 2009 Karplus prize for outstanding Doctoral Thesis.** Currently Adjunct Teaching Associate at the Faculty of Architecture and Town Planning, Technion and researcher in the Center for Urban and Regional Studies at the Technion.

12. **Eduard Bedit**, year of graduation 2012. "General area of research: "Residential Location Choice of Knowledge-Workers: Case Study of the Tel Aviv Metropolitan Area". Principle Supervisor: Associate Professor Amnon Frenkel. Currently works as Director of the Department of Transportation at the Engineering Division, City of Herzliya.
13. **Emil Israel**, year of graduation 2013. "Social Justice and Equal Opportunities in an Era of Urban Suburbanization." Principle Supervisor: Associate Prof. Amnon Frenkel. **Receive the 2014 Karplus prize for outstanding Doctoral Thesis. Received the 2014 Israel Planners Association prize for excellent thesis.** Currently Post Doc. at M.I.T
14. **Tali Hindi-Rozov**, year of graduation 2018. General area of research: "Demand-driven Innovation as Catalyst for Regional Economic and Social Development". Principle Supervisor: Prof. Amnon Frenkel.

## Theses in Progress

### PhD theses

15. **Aya Dolav**, starting year 2016. "From Capital Resources to Urban Resilience" - Past-candidacy exam. Principle Supervisor: Prof. Amnon Frenkel, Co- Supervisor: Prof. Emerita Neomi Carmon.
16. **Tsipi Buchnik**, starting year 2017. "Functional and spatial conditions for entrepreneurial activities: Tel Aviv's Coworking Spaces as driver for urban economic development. Past-candidacy exam. Principle Supervisor: Prof. Amnon Frenkel.
17. **Reem Bitar—Daoud**, starting year 2019. "Where does happiness lie? The impact of the built environment on human happiness." Pre-candidacy exam. Supervisor: Assistant Professor Emi Israel, Prof. Emeritus Amnon Frenkel as Co. Supervisor
18. **Ravid Luria**, starting year 2020. "Smart urban mobility and social integration." Pre-candidacy exam. Supervisor: Prof. Emeritus Amnon Frenkel, Prof. Yoram, Shiftan as Co. Supervisor.

### Post-doctoral fellows supervised

19. **Dr. Daniel Orenstien**, 2007-2008. Brown University, Providence, Rhode Island. General area of research: "Land use Policy". The Sam & Cecilia Neaman Post-Doctoral Fellowship at the Technion. Currently Assistant Professor in the faculty of architecture and Town Planning at the Technion.

## RESEARCH GRANTS

### Sponsored

- (1) 2020-20 **TIE** – Mapping the urban Transportation Innovation Ecosystem. Principal Investigator and Coordinator. 267,400 €. 92,400 € for the Israeli team. funded by EIT – Urban Mobility.  
*The project is jointly conducted by a team of researchers from TUM, BME and CVUT.*
- (2) 2020-20 **BIKE - LONGER** – Modelling bicycle user behavior and preferences with focus on e-bikes and long distance bicycle trips. Principal Investigator (with Prof. Shlomo Bekhor and Dr. Sagi Dalyot. 399,833 €. 200,986 € for the Israeli team. funded by EIT – Urban Mobility.  
*The project is jointly conducted by a team of researchers from DTU as coordinator.*
- (3) 2020-20 **InnovaCity2.0** - City Challenges for Entrepreneurs – Entrepreneurial training for professionals tackling urban mobility applying methods from user-centered innovation. Co-Principal Investigator. 188,498.00 €. 17,500 € for the Israeli team. Project funded by EIT – Urban Mobility.  
*The project is jointly conducted by a team of researchers from TUM as coordinator, Aalto University and UPC.*
- (4) 2020-20 **SHAREd MObility Rewards** - Optimize the added value of carsharing services. Co Principal Investigator (with Prof. Yoram Shiftan as coordinator). 350,005.00 €. 70,021€ for the Israeli team. Project funded by EIT – Urban Mobility.  
*The project is jointly conducted by a team of researchers from TUM, DTU and UCL.*
- (5) 2020-20 **MOBY** - Living lab e-micromobility. Co Principal Investigator (with Prof. Yoram Shiftan). 577,780 €. 31,219 € for the Israeli team. Project funded by EIT – Urban Mobility.  
*The project is jointly conducted by a team of researchers from Fraunhofer as coordinator, TUM, BME, KTH, and UPC.*
- (6) 2020-20 **Boost I&E** - Boosting Innovation and Entrepreneurship Challenge Project. Co Principal Investigator (with Prof. Yoram Shiftan). 199,990 €. 29,657 € for the Israeli team. Project funded by EIT – Urban Mobility.  
*The project is jointly conducted by a team of researchers from Technical University of Catalonia as coordinator, Alto University and TUM.*
- (7) 2019 **InnovaCity** - City Challenges for Entrepreneurs – Entrepreneurial training for professionals tackling urban mobility applying methods from user-centered innovation. Co-Principal Investigator. NIS 105 thousand. Early bird project funded by EIT – Urban Mobility.



- (8) 2020 **ISRAEL 100** - A comprehensive, long-range strategic spatial plan for Israel towards 2048 – Stage C - Strategic development for local authorities  
Co-Principal Investigator (with Professor Shamay Assif and others researchers from seven academic institutions). NIS 4.0 million Project is funded by Miphal Hapayis.
- (9) 2017-19 **ISRAEL 100** - A comprehensive, long-range strategic spatial plan for Israel towards 2048  
Co-Principal Investigator (with Professor Shamay Assif and others researchers from seven academic institutions). NIS 1.7 million Project is funded by Yad Hanadiv.
- Developing a methodology for the preparation of a strategic plan for the State of Israel. A program that will deal in an integrative and multidisciplinary manner with the challenges facing the country in the next three decades.*
- (10) 2011–15 **“Pick-Me - Policy Incentives for the Creation of Knowledge: Methods and Evidence”**  
Co-Principal Investigator (with Professor Emeritus Shlomo Maital and Dr. Daphne Getz from The Samuel Neaman Institute for Advanced Studies in Science & Technology - SNI). €204,600 for the Israeli team (the total €1.85 Million). **EU funded research project under the Seventh Framework Programme**
- This project is jointly conducted by a team of researchers from Italy, The Netherlands, France, Great Britain, Germany, Spain, Poland, and Israel. I lead one of the major working packages (WP2) and I am participating in 3 others WPs. Our research aims to analyze the role of the demand side in the generation and exploitation of technological knowledge, introduction of technological and organizational innovation, and in fostering productivity growth.*
- (11) 2011–15 **“Building an Integrative Model for Local Strategic Planning Based on Spatial Capital Indices”**  
Principal Investigator. 535,000 ISK, funded by Bridge to the Future – BTF (“Gesher La Atid”), a not-for-profit organization.
- I initiated this research in order to develop an innovative idea that I am working on over the past few years: to build an integrative model for local strategic planning based on spatial capital assets (social, cultural, economic, organizational, political, and physical). This model will assist in defining a municipality’s capital profile and provide policymakers with development assessment tools.*
- (12) 2010–12 **“Technion Nation - Technion's Contribution to Israel and to the World: Past, Present & Future”**  
Co-Principal Investigator (with Professor Emeritus Shlomo Maital). 213,800 ISK, funded by the Technion - Vice President for Research Fund and the S. Neaman Institute for Advanced Studies in Science and Technology.

*This research exposes the contributions that the Technion has made over the years to Israel's economy, security and society and to the wellbeing of humanity in general through its graduates. My role was to conduct a survey among Technion graduates and to prepare a scientific report to the Technion management.*

**(13)** 2009–12 “Social Justice and Equal Opportunities in an Era of Urban Sprawl”

Principal Investigator. 194,000 NIS, funded by the **Israel Science Foundation (ISF)**.

*In this research project I converted the abstract notion of theoretical justice into an empirical examination, in which the social justice implications of urban sprawl can be better understood and measured. Pierre Bourdieu's capital theory served as the theoretical basis, into which I introduce the environmental amenities of each of the urban and suburban entities.*

**(14)** 2007-08 "The Contribution of Universities to Local Development"

Principal Investigator. \$ 2,500, funded by the **Association of University Heads, Israel**

*This research project provided a wide literature survey on the economic development impacts of universities on regions and cities.*

**(15)** 2006-09 “**RICAFE2** - Regional Comparative Advantage and Knowledge-Based Entrepreneurship”

Co-Principal Investigator (with Professor Saul Lach from the Hebrew University). The project was conducted in the Samuel Neaman Institute for Advanced Study in Science and Technology – SNI. €95,000 for the Israeli team (out of the total €1.125 Million). **EU funded research project under the Sixth Framework Program**

*This project was jointly conducted by a team of researchers from Great Britain, Germany, France, Italy, Latvia, The Netherlands, Switzerland, India and Israel. I was responsible for working package 2 with the aim to identify the considerations prioritized by high-tech firms in the process of choosing a location within a metropolitan region for establishing or relocating their businesses.*

**(16)** 2006-08 “Evaluating the Impact of Light Rail Transit on Land Values Near Routes”

Co-Principal Investigator (with Associate Professor Yoram Shiftan and Prof. Daniel Shefer). \$ 33,500, funded by NETA - the Tel Aviv Metropolitan Mass Transit System Authority.

*The objective of this research project was to examine the impact of light rail transit on land values near Routes as depicted in the international literature and applying to the greater Tel-Aviv region.*

- (17) 2004–06 “Investment in Higher Education and Scientific Research in Israel: An International Comparative Perspective”  
Principal Investigator. \$ 18,000, funded by the office of the Senior Vice President at the Technion.  
*The objective of this research project was to examine from an international comparative perspective, the relationship between the scope of higher education investment and a state’s economic progress.*
- (18) 2002-05 “Vision of Sustainable Development vs. Sprawling Reality: Identifying the Spatial Characteristics of Urban Sprawl in Israel”  
Principal Investigator. \$ 22,200, funded by the Ministry of Environmental Protection, Office of the Chief Scientist.  
*This research project mapped the urban sprawl in Israel, examined its scope and the changes it had undergone and analyzed the factors effecting these changes.*
- (19) 2001-02 “Policies Guiding University-Industry Technology Transfer”  
Co-Principal Investigator (with Prof. Daniel Shefer). \$ 85,600, funded by the **Israel Academy of Science and Humanities**  
*This research presented an overview of the dynamic changes in the character of research conducted at the universities, financed by industry. We also examined policies, rules and regulations adopted by universities to protect their economic and academic interests.*
- (20) 2001-02 “**IFISE** – Israel Financing Innovation Schemes for Europe”  
Co-Principal Investigator (with Prof. Daniel Shefer) \$ 50,000, **EU funded research project under the Fifth Framework Programme.**  
*The project was conducted by a multi-national research team from Italy, Great Britain, Netherlands, and Israel. The objective of this project was to develop methodology for the creation of seed and start-up capital resources for high-tech firms in Europe in general, and in Italy in particular. My role was to analyze the successes and failures of the Israeli Technological Incubators Programme as a model for the Italian milieu.*
- (21) 2000-03 “An Examination of High Rise Buildings”  
Co. Principal Investigator (with Prof. Arza Churchman, principal investigator & coordinator and others). \$ 228,300, funded by the Planning Administration of the Ministry of the Interior  
*The overall objective of the research was to conduct a broad and multi-disciplinary examination of high rise buildings and proposed planning policies. My role in this project was to construct a spatial survey of thousands high-rise buildings in 40 cities in Israel and to analyze the spatial pattern of this phenomenon. This project was a cooperative venture between the Center for Urban and Regional Studies and the National Building Research Institute, both at the Technion.*

- (22) 2000-02 “University Research and Technology Transfer: Formulating New and More Effective Policies”  
Co-Principal Investigator (with Prof. Dani Shefer). \$ 57,800, funded by the Ministry of Science.  
*Our objective was to develop effective policies and procedures that will better promote technology transfer from universities to the industry. We examined the relevant issues of technology transfer, and developing appropriate methodology and tools for monitoring and follow-up.*
- (23) 1999-01 “A Model for Evaluating the Impact of Urban and Rural Development on Agricultural Land for Israel in 2020”  
Principal Investigator, \$18,000, funded by the Office of the Chief Scientist in the Ministry of Agriculture and Rural Development.  
*This research project evaluated the impact of land needs for urban and rural development on the depletion of agricultural land in Israel resulting from the forecasted population growth.*
- (24) 1996-99 “Technometric Benchmarking: Extending A Method Used Successfully for Quantifying Technical Performance of Innovations and Developing an Operational, Quantitative, Integrative Decision-Support Model.”  
Co. Principal Investigator (with Prof. S. Maital), \$186,000, funded by **the German-Israel Foundation (GIF)**.  
*This research project was undertaken at the S. Neaman Institute for Advanced Studies in Science and Technology at the Technion, in collaboration with the Fraunhofer Institute for Systems and Innovation in Karlsruhe, Germany.*
- (25) 1995-97 “Measuring the Spatial Diffusion of Technological Innovation in Israeli and German Fast-Growth Industries”  
Co. Investigator (with Prof. D. Shefer, Principal Investigator) \$154,000, funded by **the German-Israel Foundation (GIF)**  
*This research project was undertaken at the S. Neaman Institute for Advanced Studies in Science and Technology at the Technion, in collaboration with Dr. Knut Koschatzky from the Fraunhofer Institute for Systems and Innovation in Karlsruhe, Germany.*
- (26) 1990-94 “Analyzing the Competitive Advantage of Israel's High-Tech Industries”  
Co. Investigator (with Prof. S. Maital, Principal Investigator), \$170,000, funded by **the German-Israel Foundation (GIF)**  
*This research project was undertaken at the S. Neaman Institute for Advanced Studies in Science and Technology at the Technion in collaboration with Dr. Hariolf Grupp from the Fraunhofer Institute for Systems and Innovation in Karlsruhe, Germany. This research applied the Technometric Method developed by Dr. Grupp for comparing the technological level of industries among countries.*

- (27)** 1989-91 "Developing Instructions for the Planning of Open Spaces in Urban Residential Areas"  
Co. Investigator (with Prof. A. Churchman and Prof. S. Amir, Principal Investigators). Sponsored by the Ministry of Construction and Housing.  
*This project was carried out at the Center for Urban and Regional Studies at the Technion.*
- (28)** 1989-90 "Estimating the Implications of the Proposal for the Westward Extension of the Area of the City of Jerusalem"  
Co. Investigator (with Prof. S. Amir and Prof. R. Alterman, Principal Investigators). Sponsored by the Mate' Yehuda Regional Council.  
*This research project was carried out at the Center for Urban and Regional Studies at the Technion. The results were submitted to the Commission for the Examination of Jerusalem's Boundaries, appointed by the Ministry of the Interior and headed by the late General Manager Mr. H. Koversky.*
- (29)** 1987-88 "Generating New Employment Opportunities in Israel's Development Towns"  
Co. Investigator (with Prof. D. Shefer, Principal Investigator). Funded by the Jewish Agency, the Department for Neighborhoods and Renewal, the Ministry of Industry and Trade, and the Ministry of Labor and Welfare  
*This research project was carried out at the Samuel Neaman Institute for Advanced Studies in Science and Technology at the Technion.*
- (30)** 1986-87 "Generating Alternative Socio-Economic Development Policies for Israel's Development Towns (Stage I)"  
Co. Investigator (with the late Prof. M. Hill and Prof. D. Shefer Principals Investigators), funded by the Ministry of Labor and Welfare.  
*This research project was carried out at the Samuel Neaman Institute for Advanced Studies in Science and Technology at the Technion.*
- (31)** 1984-86 "Estimating the Impact of Advanced Means of Communication on the Location of High-Tech Industries in Israel"  
Co. Investigator (with Prof. D. Shefer Principal Investigator), funded by the Ministry of Communication.  
*This research project was carried out at the Samuel Neaman Institute for Advanced Studies in Science and Technology at the Technion.*
- (32)** 1982-85 "An Evaluation of Israel's Project Renewal"  
Project Coordinator (headed by the late Prof. M. Hill (with R. Alterman, N. Carmon, A. Churchman and M. Shechter), funded by the International Evaluation Committee, appointed by the Israeli Government  
*This research project was undertaken at the Samuel Neaman Institute for Advanced Studies in Science and Technology, dealing with the*

*institutional, decision-making, planning and implementation processes of the project. Subjects covered include; public participation, input-output evaluation, the designation of beneficiaries, economic efficiency (especially cost effectiveness) and the neighborhood impact of the project's activities.*

- 2020 - COST Action** - The geography of new working spaces and the impact on the periphery CA18214

## SIGNIFICANT PROFESSIONAL PROJECTS

### Planning Projects

- 2021 - A continuation plan for mass transportation system in the Tel Aviv metropolitan area. Headed by Dr. Nir Sharav. Commissioned by Ayalon Lines.
- 2021 - Strategic plan for mass transportation and public transportation in the Be'er Sheva metropolitan area. headed by Dr. Moshe Hirsh. Commissioned by Ayalon Lines.
- 2021 - A continuation plan for transportation system in the Northern regions. Headed by Dr. Nir Sharav. Commissioned by Ayalon Lines.
- 2017-19 Proposed outline for the creation of the Northern Metropolis, headed by Arch. Shamay Asif. Commissioned by the Ministry of Construction and Housing.
- 2016-19 *Long-term population projections for transportation master plan in the Haifa metropolitan region.* Commissioned by Yefe Nof - Transportation Infrastructure and Construction Ltd.
- 2016-17 *Incentives to encourage local authorities to develop residential buildings.* With Shamay Asif, Idan Porat & Orbanix Ltd. Commissioned by Israel Land Authority.
- 2013-17 *Long-Range Master-Plan for the City of Nazerat 'illit,* headed by Arch. Dani Kadar, A.B. Planners. Commissioned by the Planning Administration in the Ministry of Interior. Senior Member Team and Methodological Consultant.
- 2012 - *Long-Range Master-Plan for the City of Kfar Saba.* Headed by Arch. Uri Mazor and Arch. Eli First, and commissioned by the Urban Planning Department in the Ministry of Construction and Housing. Social and land program Consultant.
- 2012 - *Long-Range Master-Plan for the City of Carmiel.* Headed by Arch. Uri Mzor, and commissioned by the Urban Planning Department in the Ministry of Construction and Housing. Social and land program Consultant.
- 2008-13 *Updating National Comprehensive Outline Scheme – NOS/35* headed by Arch. Ari Cohen. Commissioned by the Planning Administration in the Ministry of Interior. Senior Member Team.

- 2008-13 *National Outline Scheme for "Overland Integrated Transportation" – NOS/42.* Headed by Arch. Yossi Farchi. Commissioned by the Ministry of Transport and the Planning Administration in the Ministry of Interior. Senior Planner - Population and employment forecasts consultation. In process.
- 2010-10 Special Consultant for the Planning Administration in the Ministry of Interior regarding *joint industrial parks in the Israeli peripheral regions.*
- 2008-10 Design a "vision" for the Northern Region of Israel. With Arc. Adam Mazor. Yad Architects Ltd. And City-link Ltd. Commissioned by TZAFONA IDAN HAGALIL Ltd.
- 2006-09 Long-term population projections for transportation master plan in the Haifa metropolitan region. Commissioned by Yefe Nof - Transportation Infrastructure and Construction Ltd.
- 2004-17 *Long-Range Master Plan and Outline Plan* for the city of Acre. Headed by Arch. Doron Rohatin. Commissioned by the Ministry of Interior, Planning Administration. Approved.
- 2001-03 Special Consultant for the Planning Administration in the Ministry of Interior regarding *National Integrated Outline Plan for Building, Development and Preservation – NOS/35.*
- 1998-01 *National Integrated Outline Plan for Building, Development and Preservation – NOS/35.* Commissioned by the Ministry of Interior, Planning Administration. Senior Planner – Population forecasts and long term land consumption. Approved. (Published papers: items 18, 20 in the List)
- 1999-01 *Long-Range Master Plan for the City of Zefat.* Headed by Arch. Simha Shvartz, and commissioned by the Urban Planning Department in the Ministry of Construction and Housing. Socio-Economic Consultant. Approved.
- 1997-02 *Long-Range Master Plan and Outline Plan for Isifiya locality* (Druze settlement). The project was carried out at the Center for Urban and Regional Studies, Technion. \$105,500, funded by the Governmental Inter-Department Committee, Ministry of Interior. Senior Planner (with A. Vranesky and others).
- 1996-02 *Long-Range Master Plan and Outline Plan for Daliyat Al-Karmel* (Druze settlement). The project was carried out at the Center for Urban and Regional Studies, Technion. \$179,000 funded by the Governmental Inter-office Commission for Outline Plans, Ministry of Interior. Senior Planner (with A. Vranesky and others). Approved.
- 1998-99 *Long-Range Master Plan for the City of Nahariyya.* Headed by Arch. Simha Shvartz, and commissioned by the Urban Planning Department in the Ministry of Construction and Housing. Socio-Economic Consultant. Approved.
- 1998-00 *Long-Range Master-Plan for the City of Hazor HaGelilit.* Headed by Arch. Simha Shvartz, and commissioned by the Urban Planning Department in the Ministry of Construction and Housing. Socio-Economic Consultant. Approved.

- 1998-00 *Long-Range Regional Plan for the 'Shefelat HaGalil' Region*. Commissioned by the Israel Land Authority. Socio-Economic Consultant. Approved.
- 1994-97 *Long-Range Master Plan and Development Plan for the Upper Galilee*. Carried out at the Center for Urban and Regional Studies, Technion. \$43,700, funded by the Upper Galilee Regional Council. Principle Investigator (with D. Shefer and others). Approved.
- 1994-97 Long-Range Comprehensive Plan for Upper Nazareth Municipality. The project was carried out at the Center for Urban and Regional Studies, Technion, \$24,000 funded by the Ministry of Construction and Housing. Senior planner. Approved.
- 1994-96 *Strategic Plan for the Misgav Region*. Special consultant to Misgav Regional Council regarding the methodology for the preparation of strategic master plan. Approved.
- 1993-97 *"Israel 2020" - National Plan for Israel in the 21st Century*". Research project undertaken at the Faculty of Architecture and Town Planning, directed by Adam Mazor. This project developed a national master plan for Israel for the year 2020, focuses mainly on the organization of the national spatial development and presents the "future map" of the country. Senior Planner – Responsible for the national spatial land consumption program. Approved. (Published papers: items 18, 20 in the List).
- 1991-00 *Outline Plan and Development Plan for the Northern (Galilee) Region in Israel*; a large-scale regional development project commissioned by the National Committee for Planning and Buildings, carried out at the Center for Urban and Regional Studies at the Technion. \$524,500, funded by the Governmental Inter-office Commission for Outline Plans, Ministry of Interior, Planning Administration. Senior Planner (with D. Shefer, S. Amir and H. Law-Yone). Approved. (Published papers: item 9, 10 in the List).
- 1992-93 *Long-Range Master Plan for the City of Carmiel*. Headed by Arch. Adam Mazor, and commissioned by the Inter-office Commission for Master Plans. Senior Planner (with Shefer D.) Approved.

## **PUBLICATIONS**

### **Theses**

#### **M.Sc. Thesis**

"Land Use Allocation Policy in Israeli New Towns", Master's Thesis, Faculty of Architecture and Town Planning, Technion - Israel Institute of Technology (1981). Supervisors: Prof. Rachelle Alterman and Prof. Moshe Hill.

#### **D.Sc. Thesis**

"Spatial Diffusion of Industrial Technological Innovation and Regional Development", Doctoral Thesis, Faculty of Architecture and Town Planning, Technion - Israel Institute of Technology (1997). Supervisor: Prof. Daniel Shefer.



## Refereed papers in professional journals

(Graduate student are marked in italic)

1. **Frenkel, A.** and Shefer, D. "The Impact of Financial Incentives and Advanced Means of Communication on the Location and Operation of High-Tech Industries in Israel." *Ofakim* 19:13-35, 1987. (Hebrew).
2. Grupp, H., Maital, S., **Frenkel, A.** and Koschatzky, K. "A Data Envelopment Model to Compare Technological Excellence and Export Sales in Israel and European Countries." *Research Evaluation* 2(2):87-101, 1992.
3. Czapski, G., **Frenkel, A.**, Kohn, D. and Shoham A. "Cooperation between Israeli and Foreign Researchers." *Scientometrics* 25(3):382-400, 1992.
4. Maital, S., **Frenkel, A.**, Grupp, H. and Koschatzky, K. "The Relation between Scientific and Technological Excellence and Export Performance: A Theoretical Model and Empirical Test for EC Countries." *Science and Public Policy* 21(3):138-146, 1994.
5. **Frenkel, A.**, Reiss, T., Maital, S., Grupp, H. and Koschatzky, K. "Technometric Evaluation and Technology Policy: The Case of Bidiagnostic Kits." *Research Policy* 23: 283-292, 1994.
6. Maital, S., Grupp, H., **Frenkel, A.** and Koschatzky, K. "The Relation between the Average Complexity of High-Tech Products and Their Diversity: An Empirical Test of an Evolutionary Model." *Journal of Evolutionary Economics* 4:273-288, 1994.
7. Koschatzky, K., **Frenkel, A.**, Grupp, H. and Maital, S. "A Technometric Assessment of Sensor Technology in Israel vs. Europe, U.S.A. and Japan, Special publication on technology assessment." *International Journal of Technology Management*, 11(5/6):667-687, 1996.
8. **Frenkel, A.** and Shefer, D. "Modeling Regional Innovativeness and Innovation." *The Annals of Regional Science* 30:31-54, 1996.
9. Amir, S., **Frenkel, A.**, Law-Yone, H., Shefer, D. and Trop, T. "Integration of Environmental Assessment into the Regional Development Planning Process of the Galilee." *Environmental Management*, 21(1):59-68, 1997.
10. Shefer, D., Amir, S., **Frenkel, A.** and Law-Yone, H. "Generating and Evaluating Alternative Regional Development Plans." *Environment and Planning B* 15:7-22, 1997.
11. Shefer, D. and **Frenkel, A.** "Local Milieu and Innovations: Some Empirical Results." *The Annals of Regional Science* 32: 185-200, 1998.
12. Koschatzky, K., **Frenkel, A.**, Walter, G.H. and Shefer, D. "Regional Concentration and Dynamics of Fast-growing Industries in Baden-Württemberg and Israel." *International Planning Studies* 5(2):237-255, 2000.
13. **Frenkel, A.**, Maital, S. and Grupp, H. "Measuring Dynamic Technical Change: A Technometric Approach." *International Journal of Technology Management* 20(3/4):429-441, 2000.

14. **Frenkel, A.** "Can Regional Policy Affect Firms' Innovation Potential in Lagging Regions?" *The Annals of Regional Science*, 34(3):315-341, 2000.
15. Roper, S., **Frenkel, A.** "Different Paths to Success? The Growth of the Electronics Sector in Ireland and Israel." *Environment and Planning C* 18(6):651-665, 2000.
16. **Frenkel, A.** "Why High Technology Firms Choose to Locate in or Near Metropolitan Areas." *Urban Studies* 38(7):1083-1101, 2001.
17. **Frenkel, A.**, Shefer, D., Koschatzky, K. and Walter, G.H. "Firms Characteristics, Location and Regional Innovation: A Comparison between Israeli and German Plants." *Regional Studies* 35(5):415-429, 2001.
18. **Frenkel, A.**, Shefer, D., Roper, S. "Public Policy, Locational Choice and the Innovation Capability of High-tech Firms: A Comparison between Israel and Ireland." *Papers in Regional Science* 82(2):203-221, 2003.
19. **Frenkel, A.** "Barriers and Limitations in the Development of Industrial Innovation in the Region." *European Planning Studies* 11(2):115-137, 2003.
20. Kaufmann, D., Schwartz, D., **Frenkel, A.** and Shefer, D. "The Role of Location and Regional Networks for Biotechnology Firms in Israel." *European Planning Studies*, Special Issue: Biotechnology Clusters and Beyond 11(7):823-840, 2003.
21. **Frenkel, A.** "The Potential Effect of National Growth-Management Policy on Urban Sprawl and the Depletion of Open Spaces and Farmland." *Land Use Policy* 21(4):357-369, 2004.
22. **Frenkel, A.** "Using Land Use Patterns in the Classification of Cities: The Israeli Case." *Environment and Planning B* 31(5):711-730, 2004.
23. **Frenkel, A.** "A Land-Consumption Model: Its Application to Israel's Future Spatial Development." *Journal of the American Planning Association* 70(4):453-470, 2004.
24. Shefer, D., **Frenkel, A.** "R&D, Firm Size and Innovation: An Empirical Analysis." *Technovation* 25:25-32, 2005.
25. **Frenkel, A.** "Land Consumption Model." *Tichnon*, 3(1):98-120, 2006 (Hebrew).
26. Rosenbaum, B., Ardetz, M., Getz, G., Shefer, D., **Frenkel, A.**, and Stone, H. "Israel's Nanotechnology Research Landscape: A Survey of Israeli Nanotechnology Capabilities and Technology Transfer Policies." *Nanotechnology Law and Business* 4(1):675-694, 2007.
27. **Frenkel, A.** "Spatial Distribution of High-Rise Buildings within Urban Areas: The Case of the Tel Aviv Metropolitan Region." *Urban Studies* 44(10):1973-1996, 2007.
28. **Frenkel, A.** and *Ashkenazi, M.* "Measuring Urban Sprawl; How Can We Deal With It?" *Environment and Planning B* 35(1):56-79, 2008.
29. **Frenkel, A.** and *Ashkenazi, M.* "The Integrated Sprawl Index: Measuring the Urban Landscape in Israel." *The Annals of Regional Science*, 42(1):99-121, 2008.

30. **Frenkel, A.**, Shefer, D., Miller, M. "Public vs. Private Technological Incubator Programs: Privatizing the Technological Incubators in Israel." *European Planning Studies* 16(2):189-210, 2008.
  31. *Porat, I.*, Shoshany, M., **Frenkel, A.** "Residential and Non-residential Construction Initiations in Tel Aviv: Autocorrelation Analysis of Urban Structure Evolution." *Environment and Planning B* 35(3):535-551, 2008.
  32. *Porat, I.*, Shoshany, M., **Frenkel, A.** Two Phase Temporal-Spatial Autocorrelation of Urban Patterns: Revealing Focal Areas of Re-Urbanization in Tel Aviv-Yafo." *Applied Spatial Analysis and Policy* 5(2):137-155, 2011.
  33. **Frenkel, A.** "Intra-Metropolitan Competition for Attracting High-Tech Firms." *Regional Studies* 46(6):723-740, 2012.
  34. **Frenkel, A.** "High-Tech Firms' Location Considerations within the Metropolitan Region and the Impact of Their Development Stages, *European Planning Studies*." 20(2):231-255, 2012.
  35. **Frenkel, A.**, and Orenstein, D. E. "Can Urban Growth Management Work in an Era of Political and Economic Change? International Lessons from Israel." *Journal of the American Planning Association* 78(1):16-33, 2012.
  36. **Frenkel, A.**, *Bendit, E.*, and Kaplan, S. "The Linkage between the Lifestyle of Knowledge-Workers and Their Intra-Metropolitan Residential Choice: A Clustering Approach Based on Self-Organizing Maps." *Computers, Environment and Urban Systems* 39:151-161, 2013.
  37. **Frenkel, A.**, *Bendit, E.*, and Kaplan, S. "Residential location choice of knowledge-workers: The role of amenities, workplace and lifestyle." *Cities* 35:33-41, 2013.
- The article was selected by the Cultural Policy Center, The Harris School of Public Policy and NORC at the University of Chicago for special display on its Digest website.*
38. **Frenkel, A.**, *Bendit, E.*, and Kaplan, S. "Knowledge-Cities and Transport Sustainability: The Link between the Travel Behavior of Knowledge-Workers and Car-Related Job-Perks." *International Journal of Sustainable Transportation* 8 (3): 225-247, 2014.
  39. Orenstein, D. E., **Frenkel, A.** and Jahshanb, F. "Methodology Matters: Measuring Urban Spatial Development Using Alternative Methodologies." *Environment and Planning B* 41: 3-23, 2014.
  40. **Frenkel, A.** and Kaplan, S. "The Joint Choice of Tenure, Dwelling Type, Size and Location: The Effect of Home-Oriented versus Culture-Oriented Lifestyle." *Letters in Spatial and Resource Sciences*, 8(3): 233-251, 2015.
  41. **Frenkel, A.**, Maital, S., Leck, E., Israel, E. "Demand-Driven Innovation: An Integrative Systems-Based Review of the Literature. *International Journal of Innovation and Technology management*, 12(2): 1550008. 2015.

42. **Frenkel, A.**, Israel, E. and Maital, S. "The Evolution of Innovation Network and Spin off Entrepreneurship: The Case of RAD." *European Planning Studies*, 23(8): 1646-1670, 2015.
43. *Israel, E.*, and **Frenkel, A.** "The Distribution of Capital Forms Between Cities and Suburbs and Their Impact on Social Justice in Space." *Urban Geography*, 36(4): 578-607, 2015.
44. Cukier, D., Kon, F., Maital, S. and **Frenkel, A.** "Innovation and Entrepreneurship in the São Paulo Metropolis" SSRN, <https://ssrn.com/abstract=2834602v>, 2016.
45. Frenkel, A. and Porat, I. "An Integrative Spatial Capital-Based Model for Strategic Local Planning – The Israeli Case", Accepted for publication in: *Planning Practice and Planning*, 32(2): 171-196, 2017.
46. **Frenkel, A.** and Leck, E. "Spatial Aspects of Education-Job Matching and Job Selection in Israel." *Regional Studies*, 51(7): 1063-1076. 2017.
47. **Frenkel, A.** and Israel, E. "Spatial Inequality in the Context of City-Suburb Cleavages – Enlarging the Framework of Well-being and Social Inequality" *Landscape and Urban Planning*, 177: 328-339. 2018.
48. *Israel, E.*, and **Frenkel, A.** "Social Justice and Spatial inequality—Toward a Conceptual Framework of a Region's Capital Resources and Capabilities." *Progress in Human Geography*, 42 (5): 647-665. 2018.
49. Israel, E., and **Frenkel, A.** "Justice and Regional Inequality—A Socio-Spatial Analysis. *Geoforum*, 110: 1-13. 2020.
50. *Buchnik, T.*, and **Frenkel A.** "The Lifestyles of Coworkers in Urban Spaces" *European Planning Studies*. DOI: 10.1080/09654313.2021.1950641

### **Submitted papers** (Graduate student are marked in italic)

51. *Hindi T.*, and **Frenkel A.** "The Contribution of Collaboration to Innovation in High-Technology Companies" submitted to *Journal of Product Innovation Management*

### **Refereed book chapters**

52. **Frenkel, A.** and Shefer, D. "Technological Innovation and Diffusion Models: A Review". In: CS. Bertuglia, S. Lombrdo, P. Nijkamp (eds.) *Innovation Behavior in Space and Time*, Berlin: Springer. Chapter 3, pp. 41-63, 1997.
53. Shefer, D. and **Frenkel, A.** "Agglomeration and Industrial Innovation in Space: An Empirical Analysis". In: P. Rietveld and D. Shefer (eds.) *Regional Development in an Age of Structural Economic Change*, Aldershot, UK: Ashgate Ltd. Chapter 4, pp. 53-71, 1999.
54. Shefer, D., **Frenkel, A.**, Koschatzky, K., and Walter, H.G. "Targeting Industries for Regional Development in Israel and in Germany – A Comparison Study". In: M.L. Lahr and R.E. Miller, *Regional Science Perspectives in Economic Analysis*, Holland: Elsevier Publisher (Chapter 13), pp.207-230, 2001.

55. Shefer, D., **Frenkel**, A. and Roper, S. "Innovation and Plants' Characteristics of Hi-Tech Firms in Israel and Ireland." In: Felsenstein, D., McQuaid, R., McCann, P., Shefer, D., (eds.), *Public Investment and Regional Economic Development*, UK: Edward Elgar Publishing. (Chapter 8), pp. 109-129, 2001.
56. **Frenkel**, A., and Orenstein, D. "Putting the Cart before the Horse – Measuring Urban Sprawl So We Can Define Urban Sprawl." In: Yang, X. (Ed.) *Urban Remote Sensing: Monitoring, Synthesis and Modeling in the Urban Environment*. Chichester, UK: Wiley Blackwell Publishers. pp. 165-181, 2011.
57. Shefer, D., and **Frenkel**, A. "Regional Innovation and Incubation: The Technological Incubators programme for Entrepreneurship and Innovation." In: Cooke, P., Asheim, B., Moschma, R., Martin, R., Schwartz, D. and Todtling, F (Eds.) *Handbook of Regional Innovation and Growth*, UK: Edward Elgar Publisher. pp. 514-528, 2011.
58. **Frenkel**, A. and Shefer, D. "University-Industry Technology Transfer: Fostering and Hindering Factors and Programs". In: Frenkel, A., Nijkamp, P., McCann, P. (Eds.), *Societies in Motion: Innovation, Migration and Regional Transformation*. UK: Edward Elgar Publisher. pp. 139-165, 2012.
59. Shefer, D., and **Frenkel**, A. "The Center-periphery Dilemma and the Issue of Equity in Regional Development." In: Fainstein, S., and Carmon, N. (Eds.) *Planning and People: Looking Back for the Future*, Penn. USA: Penn Press, pp. 183-202, 2013.
60. **Frenkel**, A. and Maital, S. "4 Market-Based Demand-Driven Innovation" In: Quatraro, F. *The Economics of Knowledge, Innovation and Systemic Technology Policy*, pp. 64-70. Routledge Taylor & Francis Group, (2015).

## Books & Special Issues

### Published

61. **Frenkel**, A., Nijkamp, P., McCann, P. (Eds.), *Societies in Motion: Innovation, Migration and Regional Transformation*. Cheltenham, UK: Edward Elgar Publisher, 2012. (377 pages).
62. **Frenkel**, A., Maital, S., with DeBare, I. *Technion Nation: Technion's Contribution to Israel and the World*. Tel-Aviv, Keter books publishing. (In English with Hebrew, Translation), 2012 (135 pages). With Vietnamese and Chinese translations, and Second Edition in English in 2017.
63. **Frenkel**, A., Maital, S. "*Mapping National Innovation Ecosystems: Foundations for Policy Consensus*". Cheltenham, UK: Edward Elgar Publisher: UK, 2014. (252 pages).
64. **Frenkel**, A., Rouwendal, J., van Dijk, J. (Eds.) "Housing Market, Regional Mobility & Economic Growth - Dutch Israeli Workshop. Special Issue to be published in: *Letters in Spatial and Resource Sciences*, 8(3), 2015.

**Refereed papers in conference proceedings** (*Graduate student are marked in italic*)

65. *Bendit, B., Frenkel, A., and Kaplan, S.* "The Linkage between Car-Related Fringe Benefits and the Travel Behavior of Knowledge Workers" Proceedings of the 90th Annual Meeting of the Transportation Research Board, Washington D.C. January 23-27, 2011
66. *Bendit, B., Frenkel, A., and Kaplan, S.* "The Linkage Between the Residential Choice and the Lifestyle of Knowledge Workers: A Self-Organizing Map Approach" Proceedings of the Computers in urban Planning and urban management 2011 Conference. Lake Louise, Alberta, Canada · July 5 – 8, 2011
67. **Frenkel, A.** and Porat, I. "*An Integrative Spatial Capital Based Model for Strategic Local Planning*" Proceedings of the Regional Studies association, Winter Conference on: Mobilizing Regions: Territorial Strategies for Growth. London, UK, November 22<sup>nd</sup>, 2013.

**Research reports or Case reports** (all in Hebrew unless noted otherwise)

1. Alterman, R. and **Frenkel, A.** "Expropriation of Land for Public Use as a Tool for Plan Implementation - Interim Report. Haifa: The Center of Urban and Regional Studies, Technion, 1982.
2. Alterman, R. and **Frenkel, A.** "Outcome of Project Renewal: Programs and Beneficiaries", in: R. Alterman, M. Hill, N. Carmon, Comprehensive Evaluation of Israel Project Renewal: Input and Output of the Project. Haifa: The S. Neaman Institute for advanced studied in Science and Technology, Technion, 1985.
3. Shefer, D. and **Frenkel, A.** "The Effect of Advanced Means of Communication on the Operation and Location of High-Tech Industries in Israel". Haifa: The S. Neaman Institute for advanced studied in Science and Technology, Technion, 1986.
4. Shefer, D. and **Frenkel, A.** "Generating Alternative Socio-Economic Development Policies for Israeli Development Towns". Haifa: The S. Neaman Institute for advanced studied in Science and Technology, Technion, 1987.
5. Shefer, D. and **Frenkel, A.** "Job Creation in Israeli Development Towns. Haifa: The S. Neaman Institute for advanced studied in Science and Technology, Technion, 1989.
6. Czapski, G., **Frenkel, A.** and Shoham, A. "Research of Israeli Scientists in Israel and Abroad". Haifa: The S. Neaman Institute for advanced studied in Science and Technology, Technion, 1989.
7. Amir, A., Alterman, R. and **Frenkel, A.** "An Evaluation of the Potential Impact of the Proposed Westward Extension of the Area of the City of Jerusalem". Haifa: The Center for Urban and Regional Studies, Technion, 1990.
8. Churchman, A., Amir, S. and **Frenkel, A.** "Open Space Planning Guidelines for Residential Neighborhoods", Haifa: The Center for Urban and Regional Studies, Technion, 1991.
9. **Frenkel, A.** and Maital, S. "The Israeli Diagnostics Industry: Evaluation of the Technological Level by Technometric Methods. Haifa: The S. Neaman Institute for advanced studied in Science and Technology, Technion, 1991.

10. Bonen, Z. and **Frenkel, A.** "Electronics 2000 (Third Stage): Location of Areas of Interest, Haifa: The S. Neaman Institute for advanced studied in Science and Technology, Technion, 1992.
11. Churchman, A. and **Frenkel, A.** "Guidelines for Residential Buildings for the Orthodox Population". Haifa: Faculty of Architecture and Town Planning, Technion, 1992.
12. Shefer, D., Amir, S., **Frenkel, A.** and Law-Yone, H. "Development and Outline Plans for the Northern Region of Israel" (Two Volumes). Volume I: Objectives, Policies and Alternative Spatial Development (500p). Vol. II: Development Plan for the Year 1992-1995 (300p). Haifa: The Center for Urban and Regional Studies, Technion, 1992.
13. **Frenkel, A.** Shefer, D., Trop, T. "Socio-Economic Planning for Carmiel." Haifa: The Center for Urban and Regional Studies, Technion, 1993.
14. **Frenkel, A.** "Spatial Programmatic Principles for the "ISRAEL 2020" Master Plan: The Demand for Land in Israel in the 21st Century". Report No. 12, Phase C of the "ISRAEL 2020", Haifa: Technion, 1997.
15. **Frenkel, A.** "Methods for the Assessment of Land Requirements in the 21st Century." In: Asif, S. and Shaar, A (Eds.). LAND – National Comprehensive Outline Scheme and Principles for Building and Development Document – NOS/35, Vol. A, Principles of the Plan and Policy Means, Tel-Aviv, pp. 104-143, 1999.
16. Shvartz. S. and **Frenkel, A.** "Feasibility Study and Long-run Master Plan for the Enlargement of the City of Nahariyya, Ministry of Construction and Housing, 2000.
17. **Frenkel, A.** "High-Rise Buildings - Spatial Aspects", Chapter 1 pp. 1-36 in: A, Man, A, Shinar, A, Churchman (Eds.) High-Rise Buildings – Literature Survey, Stage A, Vol. 1. Haifa: The Center for Urban and Regional Studies, Technion, 2000.
18. **Frenkel, A.** "High-Rise Buildings - Spatial Aspects", Chapter 1 pp. 1-57 in: A, Man, A, Shinar, A, Churchman (Eds.) High-Rise Buildings the Current Situation, Stage B. Haifa: The Center for Urban and Regional Studies, Technion, 2001.
19. Shefer, D. and **Frenkel, A.** "An Evaluation of the Israeli Technological Incubators Program and Its Projects, Final Report. Haifa: The S. Neaman Institute for advanced studied in Science and Technology, Technion, 2002 (in English).
20. Shefer, D. and **Frenkel, A.** "Analysis and Design of Policy for Technology Transfer From Universities to the Industry, Final Report", Haifa: The S. Neaman Institute for Advanced Studied in Science and Technology, Technion, 2003.
21. **Frenkel, A.** and Israel, E. "The Contribution of Universities to Local Development." Haifa: Center for Urban and Regional Studies, Faculty of Architecture and Town Planning, Technion, November 2007.
22. **Frenkel, A.** "The Intra-Metropolitan Competition for Attracting High-Tech Firms. Final report for the EU Sixth Framework Programme - RICAFE 2 – "Regional Comparative Advantage and Knowledge-Based Entrepreneurship." Haifa: The S. Neaman Institute for Advanced Studies in Science and Technology, Technion, 2009 (in English).

23. **Frenkel, A.** and Porat, I. "Developing an Integrative Model for Strategic Local planning based on spatial capital indices: A methodology for measuring the Capital Assets of Local Authorities" Interim report No. 1 for "Bridge to the Future", Haifa: the Center for Urban and Regional Studies, Technion, 2011.
24. **Frenkel, A.**, Maital, Leck, E., Getz, D. and Segal, V. "Towards Mapping National Innovation Ecosystems: Israel's Innovation Ecosystem", Haifa: The S. Neaman Institute for Advanced Studies in Science and Technology, Technion, 2011 (in English).
25. **Frenkel, A.**, Maital, S. "Technion Nation: Technion's Contribution to Israel and to Humanity", Technion, Scientific Report. Haifa: The S. Neaman Institute for Advanced Studies in Science and Technology, Technion, 2011 (in English).
26. **Frenkel, A.**, Maital, S. and Leck, E. "Like Some, Like All, Like None: A Comparison of Five National Innovation Ecosystems, With Emphasis on Markets & Demand", Haifa: The S. Neaman Institute for Advanced Studies in Science and Technology, Technion, 2011 (in English).
27. **Frenkel, A.** and Porat, I. "Measuring Capital Assets in the City of Bet She'an, and the Regional Council of Emek HaMaayanot." Interim Report No. 2 for "Bridge to the Future", Haifa: the Center for Urban and Regional Studies, Technion, 2012.
28. **Frenkel, A.**, Maital, S. with Leck, E. and Israel, E. "Critical Integrative Review of the Literature on Demand-Side and Supply-Side Innovation", PICK-ME - Policy Incentives for the Creation of Knowledge: Methods and Evidence. Working Paper. Haifa: The S. Neaman Institute for Advanced Studies in Science and Technology, Technion, 2012 (in English).
29. **Frenkel, A.**, Porat, I. and Israel, E. "Integrative Model for Local Strategic Planning in the Regional Council of Emek HaMaayanot". Submitted to "Bridge to the Future", Haifa: The Spatial Capital Lab the Center for Urban and Regional Studies, Technion, 2013.
30. **Frenkel, A.**, Porat, I. and Israel, A. "Report No. 4: Strategic Regional Planning for Valley of Springs Regional Council. Submitted to 'Bridge to the Future' Association. Haifa: The Spatial Capital Lab, Center for Urban and Regional Studies, Technion, March 2013.
31. **Frenkel, A.**, Porat, I. and Israel E. "Report No. 5: Inter-Authority Benchmarking for Beit She'an. Submitted to 'Bridge to the Future' Association. Haifa: the Spatial Capital Lab, Center for Urban and Regional Studies, Technion, May 2013.
32. **Frenkel, A.**, Porat, I. and Israel, A., "Report No. 6 Strategic Planning for Beit She'an Municipality - Tourism Development Goal based on Culture, History and Nature. Submitted to 'Bridge to the Future' Association. Haifa: the Spatial Capital Lab, Center for Urban and Regional Studies, Faculty of Architecture and Town Planning, Technion, June 2013.
33. **Frenkel, A.** "Evaluation of the planning inventory and the extent of realization of the building rights approved in the plans in Israel 1990-2009", Planning Administration in the Ministry of Interior. 2014.
34. **Frenkel, A.** "The Ceará State (Brazil) Innovation Ecosystems as part of Supporting the Development of Innovation in Industry". Haifa: The S. Neaman Institute for Advanced Studies in Science and Technology, Technion, 2014 (in English).



35. Bentur, A., **Frenkel, A.** Chemansky, A. "Aspects in Formulating a Metropolitan Plan for Israel's North. Haifa: The Samuel Neaman Institute for National Policy Research. September 2016.
36. Frenkel, A., Israel E. and Lerner, O. "The Transportation Innovation Ecosystem Model" EIT – Urban Mobility, 2020 (in English).
37. Frenkel, A., Israel E. and Lerner, O. "TIE Visual Maps of Munich, Budapest, and Prague" EIT – Urban Mobility, 2020 (in English).
38. Frenkel, A., Israel E. and Lerner, O. "TIE - A Cross-City Comparison" EIT – Urban Mobility, 2020 (in English).
39. Frenkel, A., Israel E. and Lerner, O. "List of Policy Recommendations for the cities of Munich, Budapest and Prague" EIT – Urban Mobility, 2020 (in English).
40. Gittman, V., Israel, F., Frenkel, A., Lerner, O., Møller, M., Haustein, S., Banerjee, A., Lukawska, M., Holgaard, R. and Karstens Brandt, R. " Investigation framework report for setting long-distance and e-bike routes in urban areas" EIT – Urban Mobility, 2020 (in English).
41. Engwall, M., Borin, F., Gidofalvi, G., Merdymshaeva, E., Frenkel, A., Lemardelé, C., Gilibert Junyent, M. and Pretzsch, S. "MOBY - Living lab e-micromobility: Description of business models, EIT – Urban Mobility, 2020 (in English).

## Other publications

### Books Published in Israel (Graduate student are marked in italic)

30. **Frenkel, A.**, *Miller, M.* and Shefer, D. Technological Incubators in Israel: Technological Policy in an Era of Privatization, Haifa: Technion, Center for Urban and Regional Studies and The S. Neaman Institute for Advanced Studies in Science and Technology, 2005.
31. **Frenkel, A.** and *Ashkenazi, M.* Vision of Sustainable Development vs. Sprawling Reality? Spatial Characteristics of Urban Sprawl in Israel, Haifa: Technion, Center for Urban and Regional Studies and The S. Neaman Institute for Advanced Studies in Science and Technology, 2005.
32. **Frenkel, A.** Leck, E. *Investments in Higher Education and the Economic Performance of OECD Member Countries.* Haifa: Technion, The S. Neaman Institute for Advanced Studies in Science and Technology, 2006.
33. **Frenkel, A.** and *Emil I.* *The Contribution of Universities to Local Development.* Technion, Haifa: Center for Urban and Regional Studies, 2008.
34. **Frenkel, A.** and *Shaly, A.* *Urban Sprawl in Israeli Arab Towns: the Built-Up Area in Arab Towns.* Technion Haifa: Center for Urban and Regional Studies, 2010.

### Non-refereed book chapters

35. Maital, S., **Frenkel, A.**, Grupp, H., and Koschatzky, K. "Relation Between Scientific and Technological Excellence and Export Performance: Evidence for EC Countries", In: Grupp, H., Maital, S., *Managing New Product Development and Innovation*, Northampton MA: Edward Elgar Publishing, Chapter 9, pp. 170-189, 2001.
36. Grupp, H., Maital, S., **Frenkel, A.** and Koschatzky, K. "Linking Technological Excellence and Export Sales in Israel and European Union: A Data Envelopment Approach", In: Grupp, H., Maital, S., *Managing New Product Development and Innovation*, Northampton MA: Edward Elgar Publishing, Chapter 10, pp. 190-218, 2001.
37. **Frenkel, A.**, Reiss, R., Maital, S., Grupp, H. and Koschatzky, K. "Biodiagnostic Kits: Assessment and Comparison", In: Grupp, H., Maital, S., *Managing New Product Development and Innovation*, Northampton MA: Edward Elgar Publishing, Chapter 11, pp. 221-242, 2001.
38. Koschatzky, K., **Frenkel, A.**, Grupp, H. and Maital, S. "Sensor Technology: A Static Assessment", In: Grupp, H., Maital, S., *Managing New Product Development and Innovation*, Northampton MA: Edward Elgar Publishing, Chapter 12, pp. 243-263, 2001.
39. **Frenkel, A.**, Maital, S. and Grupp, H. "Sensor Technology: A Dynamic Assessment", In: Grupp, H., Maital, S., *Managing New Product Development and Innovation*, Northampton MA: Edward Elgar Publishing, Chapter 13, pp. 264-278, 2001.

### Review of books

40. "Boundary Spanning and the 'Knowledge Community'" in Cooke, P., and Schwartz D., (Eds.), *Creative Regions: Technology, Culture and Knowledge Entrepreneurship*, London: Routledge, 2007.
41. "Sustainability: A Global Urban Context", A. Vojnovic, I., (ed.) Michigan State University Press, 2012.

## CONFERENCES

### Plenary, keynote or invited talks

#### Abroad

- 2016** "Like Some, Like All, Like None - National Innovation Ecosystems: A Comparative Analysis among Eight Nations", Invited Talk, China-Israel Planning Innovation Centre Project, Nanjing University, Nanjing, China, 28-29 December 2016
- 2014** "Identifying knowledge workers' lifestyle by means of self-organizing maps (SOM) and the impact on their intra-metropolitan residential choice." Invited talk, "CASA – The Bartlett Centre for Advanced Spatial Analysis, UCL, London, 26 March 2014
- 2014** "Mapping Ceará National Innovation Ecosystems". An experts' Workshop on: The Innovation Ecosystem in the State of Ceara. Invited, the Federal University of Ceara, February 5-7, Ceara, Brazil.

- 2013** "Regional Growth and Development in the Galilee: Opportunities and Challenges - Macro Perspectives", The Second Galilee Partners." Invited talk, Roundtable of the United Jewish Israel Appeal in UK, May 20, 2013 London
- 2012** "Mapping Greater Toronto Regional Innovation Ecosystems." An experts' Workshop on: Mapping Toronto's Healthcare/Medical Industry Regional Innovation Ecosystem. Invited, Rotman DesignWorks, Rotman School of Management, University of Toronto, Canada, November 13, 2012.
- 2012** "*Like Some, Like All, Like None: A Comparison of Five National Innovation Ecosystems, With Emphasis on Markets & Demand*". Conference: "Re-imagining Europe: Demand-Driven Innovation & Economic Policy" Turin, Italy, June 21-22, 2012.
- 2006** "*Cross Border Global City Region – The Israeli-Palestine Case, Reality or Dream?*" Conference on "The Day after Peace." Plenary lecture, The Federal Agency for Civic and the Berlin Academy of Art, Berlin, November 24-26, 2006.
- 2002** "*An Empirical Analysis of the Technological Incubators Program in Israel.*" Invited talk, workshop on Israeli Financing Instruments for the Support of Entrepreneurship Dissemination, Organized by Professor Peter Nijkamp. Amsterdam, May 17, 2002.

### In Israel

- 2012** "*National Innovation Ecosystems – A Comparative Analysis among Five EU Nations with Emphasis on Markets & Demand.*" Invited talk, EU - Israel Seminar on Technology Transfer with an Emphasis on Clean Tech, Tel Aviv, 25-26 November 2012.
- 2007** "*New Strategies for Developing Israel's Northern Region*". Plenary lecture, the Annual Conference of the Israel Association of Planners, the Technion, Haifa, March 8, 2007.
- 2006** "*The Integrated Sprawl Index: Measuring the Urban Landscape in Israel.*" Invited talk, Israel Real Estate and Urban Economic Symposium, organized by the Technion, Tel Aviv University and University of Southern California, Haifa, May 29-30, 2006.
- 2004** "*Demographic Trends in Israel's Population – The National Outline Plan no. 35*". Workshop on Demographic Trends in the Middle-East." Invited talk, the Israeli National Security Council, Herzliah, March 10, 2004.
- 2000** "*Planning Tools for Sustainable Development of the Galilee Region.*" Invited talk, Israeli-Italian Workshop on Regional Planning and Development, Haifa, Technion, 19-21 September, 2000.
- 2000** "*Daliat-El-Carmel: Needs for Future Development.*" Invited talk, Israeli-Italian Workshop on Regional Planning and Development, Haifa, Technion, 19-21 September, 2000.

## Academic presentations in workshops as part of funded research

### Abroad

- 2013** "Jacobs externalities in the presence of viral entrepreneurship: The case of RAD", Pick-Me - Progress Review Meeting, London School of Economics, Friday 28th June 2013.
- 2012** "*Critical Integrative Review of the Literature on Demand-Side and Supply-Side Innovation*", PICK-ME - Policy Incentives for the Creation of Knowledge: Methods and Evidence. Annual Workshop on Policy Incentives for the Creation of Knowledge, Collegio Carlo Alberto, Turin, Italy, June 20<sup>th</sup>, 2012.
- 2011** "*Towards Mapping National Innovation Ecosystems Plenary lecture, Pick-Me Annual Workshop on Policy Incentives for the Creation of Knowledge*, University of Nice Sophia Antipolis and CNRS GREDEG, Nice, November 3-4, 2011.
- 2011** "*Demand Side and Supply Side Innovation Policies*". Plenary lecture, Pick-Me Annual Workshop on Policy Incentives for the Creation of Knowledge, Collegio Carlo Alberto, Turin, Italy, February 3-4, 2011.
- 2001** "*Survey of Technological Incubator and Projects in Israel.*" IFISE workshop on the methodology for the creation of seed and start-up capital sources for high-tech firms in Europe, University of Pavia, Italy, October 14-16, 2001.

### Invited Lectures in Universities (Abroad)

- 2014 "An Integrative Spatial Capital-Based Model for Strategic Local Planning". The Bartlett School of Planning, Faculty of the Built Environment, UCL, London. June 2014.
- 2014 "The Effect of Home-Oriented versus Culture-Oriented Lifestyle on the housing choice of Knowledge Workers", Department of Geography & Environment, London School of Economics and Political Science, London, May 2014.
- 2003 "*National-Level Planning as a Tool in Designating the Spatial Configuration of Israel toward the 21st Century.*" Center for Urban Policy and the Environment, School of Public and Environmental Affairs, Indiana University Purdue University, Indianapolis, June 12, 2003.
- 2003 "*Using Land Use Patterns in the Classification of Cities.*" Department of City and Regional Planning, Austin E. Knowlton School of Architecture, The Ohio State University - Brown Bag Lecture Series, May 23, 2003.
- 2003 "*Land Consumption Model as a Tool in the Long-Range Spatial Planning – Configuring Israel toward the 21st Century.*" The Department of Geography, Ohio State University, Columbus - Geography Colloquium Series, May 8, 2003.
- 2003 "*The Role of Regional Network for Biotechnology Firms – Implications from the Israeli Technological Incubators Program.*" Center for Urban and Regional Analysis, Ohio State University, Columbus, Roundtable Seminar, April 15, 2003.

- 2003 *“Assessment of the Impact of Urban Development on the Depletion of Open Space and Farmland in Israel.”* Urban Planning Program in School of Urban & Public Affairs, University of Louisville, April 12, 2003.
- 2003 *“A Land-Consumption Model: Its Application to Israel's Future Spatial Development.”* Urban Studies Institute, University of Louisville, April 10, 2003.

## **Presentations (giving papers)**

### **Abroad**

- August 2021 (1) "The Taxonomy of Coworking Spaces in Israel"  
  
(2) " Mapping ecosystems of innovation in transportation and mobility in the city (TIE) - macro analysis"  
  
The 20<sup>th</sup> European Congress of the Regional Science Association: "Territorial Future" 24-27 August, On line.
- August 2019 "Coworking Spaces contribution in creating an innovative entrepreneurship ecosystem in cities" The 57<sup>th</sup> European Congress of the Regional Science Association: "Cities, regions and digital transformation" 27-30 August. Lyon, France.
- August 2018 "The Future City: New and Emerging Working Spaces Changing the Urban Arena" The 58<sup>th</sup> European Congress of the Regional Science Association: Place for People Innovative' Inclusive and Liveable Regions, 28-31 August, 2018, Cork, Ireland.
- June 2018 "The Future City: New and Emerging Working Spaces Changing the Urban Arena", RSA Annual Conference: A World of Flows: Labour Mobility, Capital and Knowledge in an Age of Global Reversal and Regional Revival. 3rd - 6th June, 2018, Lugano, Switzerland
- November 2017 "Synergies in Science-based Regional Innovation Systems (RIS)" Regional Studies Association Winter Conference, 15-16 November 2017, London, UK.
- August 2017 "Multidimensional Structure of Exurban Sprawl" The 57<sup>th</sup> European Congress of the Regional Science Association, Groningen, 29 August - 1 September 2017, The Netherlands.
- November 2016 "Spatial Inequality in the Context of City-Suburb Cleavages – Enlarging the Framework of Well-being and Social Justice" Regional Studies Association Winter Conference, 24-25 November 2016, London, UK.
- August 2016 "Synergies in Science-based Regional Innovation Systems (RIS)". European Congress of the Regional Science Association International. 23-26, August , Vienna, Austria,

- November 2015 "Social and Spatial Inequality between Haifa's Neighborhoods and its Impact on Life-Chances", Regional Studies Association Winter Conference, 19-20 November 2016, London, UK.
- August 2015 "Spatial Aspects of Education-Job Matching and Job Selection in Israel" The 55<sup>th</sup> European Congress of the Regional Science Association International: "World Renaissance: Changing roles for people and places", 25-28 August 2015, Lisbon, Portugal.
- July 2015 "Gaps in 'Spatial Capital' and life-chances between Haifa's Neighborhoods", the AESOP Annual Conference: "Definite Space – Fuzzy Responsibility", Prague, Czech Republic, 13-16 July, 2015.
- May 2015 "Spatial Aspects of Education-Job Matching and Job Selection in Israel" Regional Studies Association Annual Conference – "Global Growth Agendas: Regions, Institutions and Sustainability, Piacenza, Italy, 24-27 May, 2015.
- April 2015 "The Joint Choice of Tenure, Dwelling Type, Size and Location: The Effect of Home-Oriented versus Culture-Oriented Lifestyle" AGG Annual Meeting, Chicago, 21-25 April 2015.
- July 2014 "Spatial Justice and Social Space in the Context of City-Suburb Cleavages", the AESOP Annual Conference: "From Control to Co-evolution", Utrecht, The Netherland, 9-12 July 2014.
- November 2013 *"An Integrative Spatial Capital-Based Model for Strategic Local Planning"*, Regional Studies Association Winter Conference, London, 22<sup>nd</sup> November 2013.
- October 2013 *"The effect of leisure activities as a lifestyle choice on the housing preferences of knowledge workers in an era of global recession."* 4th Israeli- Netherlands Regional Science Workshop on: Regional Impacts of The Global Crisis. Groningen, The Netherland, 3-5 October 2013.
- August 2013 (1) *"Social Space under Urban Sprawl—The Measurement of Spatial Justice in the Context of City-Suburb Cleavages."*  
 (2) *"Rethinking residential choices: does the housing crisis induce attitudinal changes?"*  
 The 53<sup>rd</sup> European Congress of the Regional Science Association International, 27-31 August 2013, Palermo, Italy.
- July 2013 *"An Integrative Spatial Capital-Based Model for Strategic Local Planning"*, ACSP – AESOP Joint Congress, Dublin, 15-19 July 2013.
- August 2012 *"Like Some, Like All, Like None: A Comparison of Five National Innovation Ecosystems, With Emphasis on Markets & Demand."* The 52<sup>nd</sup> European Congress of the Regional Science Association International, Bratislava, Slovakia, 21-25 August 2012.

- May 2012 *"The joint choice of tenure, dwelling type and size: The effect of home-oriented versus culture-oriented lifestyle"*. The 9<sup>th</sup> World Congress of the Regional Science Association International: "Changing Spatial Patterns in a Globalizing World", Timisoara, Romania, 9-12 May 2012.
- August 2011 (1) *"Residential Location Choice of Knowledge-Workers in A 'Startup Metropolis': The Role of Amenities"*, Workplace and Lifestyle. (Appeared in proceeding)
- (2) *"The linkage between car-related fringe benefits and the travel behavior of knowledge workers"*. (Appeared in proceeding)
- The 51<sup>st</sup> European Congress of the Regional Science Association International, Barcelona, Spain, 30th August to 2nd September 2011.
- May 2011 *"The linkage between the lifestyle of knowledge workers and their intra-metropolitan residential choice"*, The Tripartite Workshop of the British and Irish, Israeli and the Netherlands Sections in the Regional Science Association: "Smart Growth; Sustainable Growth; Inclusive Growth", London, May 2-4<sup>th</sup> 2011
- February 2011 *"An Innovative Methodology for Mapping National Innovation Ecosystems"*. Pick-Me Annual Workshop on Policy Incentives for the Creation of Knowledge, Collegio Carlo Alberto, Turin, Italy, February 3-4.
- November 2010 *"The linkage between the lifestyle of knowledge-workers and their intra-metropolitan residential choice: a self-organizing map approach"*, the Annual Conference of the Israeli Section in the in Regional Science Association International, Haifa, November, 28th 2010.
- August 2010 *"Social Justice and Urban Sprawl—Toward an Empirical Measurement of Socio-Spatial Complexity"*, (Abstract in proceeding). The 50<sup>th</sup> Anniversary European Congress of the Regional Science Association International: "Sustainable Regional Growth and Development in the Creative Knowledge Economy", Jönköping, Sweden. 19-23 August, 2008. (Appeared in proceeding)
- July 2010 1) "Measuring the spatial complexity of urban sprawl using different methodologies – implications for the state of the art".
- 2) "Social Justice and Urban Sprawl—Toward an Empirical Measurement of Socio-Spatial Complexity".
- the 24th AESOP Annual Conference: "Space is Luxury", Helsinki, 7-10 July 2010.
- November 2009 *"The Center-periphery Dilemma and the Issue of Equity in Regional Development"*, International Workshop - Planning for/with People: Looking Back for the Future, sponsored by Professor Naomi Carmon Haifa, June 14-17, 2009.

- August 2009 *"Bridging the Gap between Regional Long-Term Strategic Vision and Local Abilities"*, the 49th Congress of the European Regional Science Association, Lodz, Poland. 25-30 August, 2008. (Appeared in proceeding).
- November 2008 *"The Intra-Metropolitan Competition for Attracting High-Tech Firms"*, the 3rd Israel-Netherlands Workshop in Regional Science, Jerusalem, November, 4-6 2008. (Appeared in proceeding)
- August 2008 *"Location-Choice Model for Hi-Tech Firms in an Intra-Metropolitan Region"*, the 48th Congress of the European Regional Science Association, Liverpool, 27-31 August, 2008.
- July 2008 *"From Planning towards Implementation: A Methodology Tool for Evaluating the Implementation Capability of Long Term Planning"*, ACSP – AESOP Forth Joint Congress, Chicago, 6-11 July 2008.
- August 2007 *"Spatial Distribution of Business R&D in Israel: Implications for Regional Policy"* The 47th Congress of the European Regional Science Association, Paris, 29th August – 2nd September, 2007.
- July 2007 *"Analyzing the City Landscape Footprint: Visual and Quantitative Approach"*, XXI European Planning Schools Conference, Naples, Italy 11-14 July 2007.
- April 2007 *"Investments in Higher Education and the Economic Performance of OECD Member Countries"* (with E. Leck). The 5th Bi-National Workshop of the Israeli/British & Irish Regional Science Sections, Ramat Gan, April 30 - May 2, 2007.
- August 2006 (1) *"Investments in Higher Education and the Economic Performance of OECD Member Countries"* (with E. Leck). (Appeared in proceeding)  
 (2) *"Visual and Quantitative Approach for Analyzing the City Landscape Footprint: Israel as a Case Study"*  
 (3) *"Dynamic Spatial Confluence of Residential Construction Initiations: Autocorrelation in Tel Aviv-Yafo 1976-2003"* (with I. Porat and M. Shoshany), (Appeared in proceeding)  
 The 46th Congress of the European Regional Science Association, Volos, Greece, 23-27 August 30th – September 3rd, 2006.
- July 2006 *"Visual and Quantitative Approach for Analyzing the City Landscape Footprint; Israel as a Case Study"* Second World Planning Schools Congress, Mexico City, 12-16 July 2006.
- August 2005 (1) *"Private vs. Public Technological Incubator Program: The lesson from Israel"* (with D. Shefer), (Appeared in proceeding)  
 (2) *"Measuring Urban Sprawl; How Can We Deal With?"* (Appeared in proceeding)  
 The 45th Congress of the European Regional Science Association, Amsterdam, 23-27 August 2005.



- July 2005 "Urban Sprawl in Israel: An Empirical Study of the Urban Landscape" The AESOP 2005 Congress: "The Dream of a Greater Europe", Vienna July 13-17, 2005.
- August 2004 "Spatial Distribution of High-Rise Buildings within Urban Areas: The Israeli Case." The 44th Congress of the European Regional Science Association, Porto (Portugal), 25-29 August 2004. (in proceeding)
- March 2003 "Using Land Use Patterns in the Classification of Cities: The Israeli Case." The 2003 Annual Meeting of the Association of American Geographers, New Orleans, U.S.A., March 4-8, 2003.
- September 2002 "A Land-Consumption Model: Its Application to Israel's Future Spatial Development." The 5th Congress on Environment and Planning, Oxford, UK, September 23-27, 2002.
- August 2002 (1) "Using Land Use Patterns in the Classification of Cities The Israeli Case". (Appeared in proceeding)  
 (2) "The Israeli Technological Incubator Program: A Decade Later" (with D. Shefer).  
 The 42nd Congress of the European Regional Science Association, Dortmund (Germany), August 27-31, 2002.
- July 2002 "Assessment of the Impact of Urban Development on the Depletion of Open Spaces and Farmland in Israel." The XVI AESOP Congress: "Planning in Border Regions", Volos, Greece, July 10-15, 2002.
- August 2001 "Barriers and Limitations in the Development of Industrial Innovation in the Region." The 41st Congress of the European Regional Science Association, Zagreb (Croatia), 29th August - 1st September, 2001. (Appeared in proceeding)
- August 2000 "Innovation, Public Policies and Locational Determinates of Hi-tech Industry: A Comparison between Israel and Ireland" (with D. Shefer and S. Roper). The 40th Congress of the European Regional Science Association, Barcelona (Spain), 29th August - 1st September, 2000. (Appeared in proceeding)
- July 2000 "Urban Density and Land Use in Built-up Areas: Towards a Classification of Urban Patterns." The XIV AESOP Congress: "Planning at a Turning Point", Brno, Czech Republic July 18-23, 2000.
- February 2000 "Does Location Matter for Hi-tech Industry? Evidence from Israeli and Irish Companies" (with D. Shefer and S. Roper). The 3rd Israeli - British & Irish Joint Regional Science Workshop: "Public Investment and Regional Economic Development", Hebrew University of Jerusalem, Mt Scopus, February 14-16, 2000.

- August 1999 "The Impact of Fast-Growing Population on Spatial Development." The Second Netherlands-Israeli Workshop on Regional Science: "Institutions and the Balance between Economic Growth and Environmental Quality", Utrecht, August, 30-31, 1999.
- December 1998 "*Firms' Characteristics, Location and Regional Innovation: A Comparison between Israeli and German Industrial Firm*" Workshop on: Fastest Growing Industries: A Target Group for Innovative Regional Development and Regional Technology Policy, University of Karlsruhe, Germany, December 17, 1998.
- August 1999 "*Different Paths to Success? The Growth of the Electronics Sector in Ireland and Israel*" (with S. Roper). The 39th European Regional Science Association August 23-27, Dublin, Ireland. (Appeared in proceeding)
- July 1999 "*The Impact of the Fast-Growing Population Trends in Israel On It's Spatial Future Development.*" The XIII AESOP Congress Bergen Norway, July 7-10, 1999.
- June 1999 "*Fast-Growing Industries, Location and Innovation: A comparison Between Israel and German Industrial Firms*" (with D. Shefer, K. Koschatzky and G.H. Walter). The 1999 Meeting of the IGU Commission on the Organization of Industrial Space: "Promoting Growth; New Industries, Policies and Forms of Governance", Haifa and Beer-Sheva, June 19-26, 1999.
- August 1998 "*Industrial Pattern Characteristics, Production Milieu, and Regional Innovation: A Comparison Between Israeli and German Plants*" (with D. Shefer, K. Koschatzky and G.H. Walter). The 38th European Regional science Association Vienna, Austria, August 28 – September 1, 1998. (Appeared in proceeding)
- July 1998 "*Why High Technology Firms Choose to Locate in or Near Metropolitan Areas.*" The XII AESOP Congress Aveiro, Portugal, July 23-25, 1998.
- August 1997 (1) "*Can Regional Policy Affect Firms' Innovation Potential in Lagging Regions?*" (Appeared in proceeding)
- August 1997 2) "*Local Milieu and Innovativeness: Some Empirical Results*" (with D. Shefer). (Appeared in proceeding)  
The 37th European Regional Science Association - Rome, Italy, August 26-29, 1997.
- May 1997 "*Local Milieu and Innovativeness: Some Empirical Results*" (with D. Shefer). Joint international seminar of the Israeli and Dutch Regional Science Association, Tel-Aviv, May 7-8, 1997.
- August 1996 (1) "*Spatial Diffusion of Industrial Innovation and Regional Development*" (with D. Shefer).  
(2) "*Modeling Regional Innovativeness and Innovation*" (with D. Shefer). (Abstract in proceeding)

- The 36th European Regional Science Association ETH Zurich, August 26-30, 1996.
- July 1995 “*Modeling Regional Innovativeness and Innovation*” (with D. Shefer). Joint RSAI, U.K. - Israel Workshop, Ambelside, U.K.
- August 1993 “*Generating and Evaluating Alternative Regional Development Plans*” (with D. Shefer, S. Amir, and H. Law-yone). The 34th European Congress of the Regional Science Association, Groningen The Netherlands.
- September 1993 “*Technometric Evaluation and Technology Policy: The Case of Biodiagnostic Kits*” (with R. Reiss, S. Maital, H. Grupp, K. Koschatzky). Conference of EARIE (European Association for Research in Industrial Economics) Tel-Aviv.
- August 1992 “*On the Inverse Relation between the Level of Technological Excellence and its Dispersion Across Firms: An Empirical Study of High-Tech Products in the United States and Japan.*” (with S. Maital, H. Grupp, and K. Koschatzky). The 10th World Congress of the International Economics Association, Moscow.

## In Israel

- February 2021 "Mapping transportation Innovation ecosystems in the city (TIE) - macro analysis" With Emil Israel and Ofer Lerner,  
  
"Transport Innovation Ecosystems: A Mapping Methodology, alongside Challenges of Urban Mobility" With Emil Israel and Ofer Lerner.  
  
The Israeli Regional Science Annual Workshop, "Crises as an opportunity for the development of peripheral areas" Sapir Academic College. February, 9. 2020.
- February 2020 "Coworking spaces in Tel-Aviv" with Tsipy Buchnik, The Israeli Regional Science Annual Workshop, "Policy challenges in city and region development" IDC Herzliya. February, 4. 2020.
- February 2018 "The future city: technological-social changes that change the work environments in the urban space, with Tsipy Buchnik, The Israeli Regional Science Annual Workshop," Between entrepreneurship, innovation and regional development" Ben Gurion University in the Negev February, 12. 2020.
- February 2017 "The multidimensional pattern of ex-urban sprawl in Israel", with Aviv Zax,  
  
"Synergy processes in regional innovation systems", with Tali Noy-Hindi,  
  
The Israeli Regional Science Annual Workshop, "Economic development and entrepreneurship in peripheral areas", Western Galilee Academic College, February, 6, 2017.

- February 2016 "Social and Spatial Inequality between Haifa's Neighborhoods and its Impact on Life-Chances", The Israeli Regional Science Annual Workshop, Tel Aviv University, February, 2, 2016.
- February 2015 "Spatial Aspects of Education-Job Matching and Job Selection in Israel." The Israeli Regional Science Annual Workshop, Faculty of Architecture and Town Planning, Technion. February, 10, 2015.
- November 2014 Spatial Justice and Social Space in the Context of City-Suburb Cleavages." Founding Conference of the Professional Community for Environment and Community Research, The Porter School of Environmental Studies, Tel Aviv University, November 20, 2014.
- January 2013 "*An integrative spatial capital-based model for strategic local planning.*" The Israeli Regional Science Annual Workshop, Ben-Gurion University of the Negev, Be'er-Sheva. January 30, 2013.
- February 2012 "*The joint choice of tenure, dwelling type and size: The effect of home-oriented versus culture-oriented lifestyle.*" The Israeli Regional Science Annual Workshop, Hebrew University, Rehovot. February 7, 2012.
- December 2010 "*Measuring the spatial complexity of urban sprawl using different methodologies – implications for the state of the art*", The Annual Conference of the Israeli Geographical Association, Jerusalem 5-8 December 2010.
- November 2010 (1) "The Link between the Travel Behavior of Knowledge-Workers and Car-Related Job-Perks."  
  
(2) "*The linkage between the lifestyle of knowledge workers and their intra-metropolitan residential choice.*"  
  
The Israeli Regional Science Annual Workshop, Haifa University. November 28, 2010.
- January 2010 "Re-Urbanization, pattern of development, potential realization and action strategies." The Israeli Regional Science Annual Workshop, Tel-Aviv University. January 1, 2010.
- June 2004 "*High-Rise Buildings in the Tel Aviv Metropolitan Area: Dispersal Versus Concentration.*" The Israeli Regional Workshop: "New Directions in Urban and Regional Development Science". Ben-Gurion University, June 6, 2004. (Abstract in proceeding).
- February 2000 The Royal Government of Netherlands, The Data Studies and Consultations (DATA) – Bethlehem, The Economic Cooperation Foundation (ECF) – Tel Aviv, The Environmental Protection and Research Institute (EPRI) – Gaza, Workshop: Coordinating Israeli-Palestinian "2020" and "2015", Long Term Planning", Ma'aleh Hamisha, February 6-9, 2000.

August 1986      *"The Impact of Financial Incentives and Advanced Means of Communication on the Location and Operation of High-Tech Industries in Israel"* (with D. Shefer). The Annual Conference of the Association for Regional Sciences, Technion, Haifa.

## Participation in Organizing Conferences

### Abroad

- 2020**      Special Session on: "New working spaces, resilience, and peripheral areas during the Covid-19 pandemic" (Convenor with Ilaria Mariotti, Pavel Bednar). 60th ERSA Congress, 24-27 August 2021. Online.
- 2019**      Special Session on "New working spaces, digital transformations and peripheral areas" (Convenor with Ilaria Mariotti, Pavel Bednar, Sigal Kaplan). The 59th ERSA Congress, Lyon, 27-30 August 2019.
- 2013**      The 4th Israeli- Netherlands Regional Science Workshop: "*Regional Impacts of The Global Crisis*.", Groningen, The Netherlands. October 3-5, 2013. Chair and member of the organizing committee.
- 2012**      Special Session on "Society in Motion". The 52<sup>nd</sup> European Congress of the Regional Science Association International, Bratislava, Slovakia, 21-25 August 2012. Organizer of the special session.
- 2011**      The Tripartite Workshop of the British and Irish, Israeli and the Netherlands Sections in the Regional Science Association: "Smart Growth; Sustainable Growth; Inclusive Growth", May 2-4th 2011 London. Chair and member of the organizing committee.

### In Israel

- 2019**      The Local Conference of the Israeli Section of the RSAI on: Policy challenges in developing the city and the region. The Alrov Institute for Real Estate Research, Koller Faculty of Management, Tel Aviv University, February 2019. Chair and member of the organizing committee.
- 2018**      The Local Conference of the Israeli Section of the RSAI on: Between entrepreneurship, innovation and regional development. Gilford Glazer Faculty of Management, Ben Gurion University in the Negev, February 2018. Chair and member of the organizing committee.
- 2017**      The Local Conference of the Israeli Section of the RSAI on: Economic development and entrepreneurship in peripheral areas, Western Galilee College, February 2017. Chair and member of the organizing committee.
- 2016**      The Local Conference of the Israeli Section of the RSAI on: New challenges in urban and regional development, Tel Aviv University, February 2016. Chair and member of the organizing committee.

- 2015** The Local Conference of the Israeli Section of the RSAI on: Human Capital, Innovation and Regional Development." Faculty of Architecture and Town Planning, Technion, February 2015. Chair and member of the organizing committee.
- 2013** The Local Conference of the Israeli Section of the RSAI on: Contemporary Challenges in Regional Development and innovation." Department of Public Policy and Administration, Guilford Glazer Faculty of Business and Management, Ben-Gurion University of the Negev, January 2013. Co-Chair and member of the organizing committee.
- 2011** The Local Conference of the Israeli Section of the RSAI on: "Social Protests – Regional Challenges." Faculty of Agriculture, The Hebrew University, Rehovot, February 7 2012. Chair and member of the organizing committee.
- 2010** The Local Conference of the Israeli Section of the RSAI on: Regional Challenges in an Era of Economic Crisis, Haifa University, Haifa, November 28, 2010. Chair and member of the organizing committee.
- 2008** The 3rd Israel-Netherlands Workshop in Regional Science, Jerusalem, November, 4-6, 2008. Member of the organizing committee.
- 2007** The 20th Annual Conference of the Israeli Association of Planners, The Technion, Haifa, March 8, 2007. Member of the organizing committee and Chair of the concluding session on "Haifa and the Northern Region- Future Scenarios".
- 2007** The 5th Bi-National Workshop of the Israeli/British & Irish Regional Science Sections, Ramat Gan, April 30 - May 2, 2007. Chair and member of the organizing committee.
- 2006** Workshop of the International Regional Science Association in Honor of Michael Sonis. Bar Ilan University, Ramat Gan, May, 28-29, 2006. Member of the organizing committee.
- 2005** The Local Conference of the Israeli Section of the RSA on 'Urban & Regional Development: Applications and Tools', Haifa University, Haifa, June 21, 2005. Chair and member of the organizing committee.
- 2000** Israeli-Italian Workshop on Regional Planning and Development, Haifa, Technion, Sept. 19-21, 2000. Member of the organizing committee.

## **SPECIAL PROFESSIONAL ACTIVITIES**

### **To the profession**

- 2021** Session chair on: "New working spaces, resilience, and peripheral areas during the Covid-19 pandemic". 60th ERSA Congress, 24-27 August 2021. Online.
- 2018** Session chair on: "New Workplaces: The Case of Coworking" RSA Annual Conference 2018 on: A World of Flows: Labour Mobility, Capital and Knowledge

in an Age of Global Reversal and Regional Revival, Lugano, Switzerland, 3rd – 6th June 2018.

- 2015** Member of scientific committee, The 11th World Congress of the Regional Science Association International (RSAI) will be held from April 25-28, 2016 in Istanbul, Turkey.
- 2013** Session chair on: "*Spatial Analysis in Welfare and Social Issues*." The 53rd European Congress of the Regional Science Association International, 27-31 August 2013, Palermo, Italy.
- 2012** Session chair on: "Land Use Real Estate and Housing Markets", The 9th World Congress of the Regional Science Association International: "Changing Spatial Patterns in a Globalizing World", Timisoara, Romania, 9-12 May 2012.
- 2012** Session chair on: "Entrepreneurship, Networks and Innovation", The 52<sup>nd</sup> European Congress of the Regional Science Association International, Bratislava, Slovakia, 21-25 August 2012.
- 2011** Member of scientific committee, Workshop on: "Re-Imagining Europe: Demand-Driven Innovation and Economic Policy - Where Schumpeter meets Keynes", BRICK Collegio Carlo Alberto, Turin, Italy, 21st - 22nd June 2012.
- 2011** Session Chair on "Innovation, Knowledge, Economy and Regional" The 51<sup>st</sup> European Congress of the Regional Science Association International, Barcelona, Spain, 30th August to 2nd September 2011.
- 2011** Member of the 'Keren Kayamet L'Yisrael' review panel for research grants.
- 2009** Member of the ISF (Israeli Science Foundation) review panel for research grants.
- 2008** Discussant in session: "Firms, Agglomeration and Economic Performance" the 3rd Israel-Netherlands Workshop in Regional Science, Jerusalem, November, 4-6 2008.
- 2008** Session chair on "Models and Method in Regional Science" the 48th Congress of the European Regional Science Association, Liverpool, 27-31 August, 2008.
- 2008** Member of scientific committee, Conference on Spatial Information Management toward Environmental Management of Mega Cities. The International Federation of Surveyors, Valencia, Spain, 18-21 February 2008.
- 2007** Member of scientific committee, Conference on Spatial Information Management toward Legalizing Informal Urban Development, The International Federation of Surveyors, Athens, Greece, March 28-31, 2007.
- 2006** Session chair on "New Technology, Innovation, Entrepreneurship and Space", The 46th Congress of the European Regional Science Association, Volos, Greece, August 30th – September 3rd, 2006.
- 2005** Session chair on "Modeling Land use Change", The 45th Congress of the European Regional Science Association, Amsterdam, 23-27 August 2005.

- 2005** Discussant in session: "Entrepreneurship, Network and Innovation". The 45th Congress of the European Regional Science Association, Amsterdam, 23-27 August 2005.
- 2004–09** Deputy representative of Israel in the European Regional Science Association (Secretary of the Israeli Section).
- 2004** Session chair on "Land use, Real estate and Housing Market" The 44th Congress of the European Regional Science Association, Porto (Portugal), 25-29 August 2004.
- 1982-87** Secretary of the Israel Planners Association