Title

- Professor of Chemistry

Spatial Coordinates

- Address:
  Department of Chemical and Biological Physics
  Weizmann Institute of Sciences
  76100 Rehovot
  Israel
- Telephones: office: +972-8-934-4903, lab: +972-8-934-4901, departamental fax: +972-8-934-4123
- Electronic mail address: lucio.frydman@weizmann.ac.il

Personal

- Born in 1965
- Married to Veronica Frydman
- Since 1995, father of Clara Rosalie (*aka. Clarita, Clara*)
- Since 1997, father of Uriel David (*aka. Urinchin, Uri*)
- Since 2006, father of Maya Rachel (*aka. Mayushki, Maya*)

Education

- BS in Chemistry, University of Buenos Aires (Argentina), 1982-1986.
- PhD in Physical Chemistry, University of Buenos Aires (Argentina), 1986-1990.

Positions

- Professor and Head, Department of Chemical and Biological Physics, Weizmann Institute of Sciences; 2017-present
- The Bertha and Isadore Gudelsky Professorial Chair, Weizmann Institute (since 2015)
- Professor, Department of Chemical Physics, The Weizmann Institute of Sciences; 2001-2017.
- Chief Scientist in Chemistry and Biology, The US National High Magnetic Field Lab; since 2012.
- Research Professor, Department of Chemistry, University of Illinois at Chicago; since 2001-2003.
- Professor, Department of Chemistry, University of Illinois at Chicago; 1999 - 2001.
- Associate Professor, Department of Chemistry, University of Illinois at Chicago; 1996 - 1999.
- Assistant Professor, Department of Chemistry, University of Illinois at Chicago; 1992 - 1996.
- Visiting Research Associate, Chemistry Division, Argonne National Laboratory , 1994.
- Postdoctoral Research Associate, Lawrence Berkeley Laboratory and Department of

Chemistry, University of California-Berkeley, 1990-1992.

Professional Activities

- Editor-in-Chief, Journal of Magnetic Resonance, Since 2011.
- Associate Editor, Journal of Magnetic Resonance, 2003-2010.
- Editor-in-Chief, The Open Journal of Chemical Physics, 2009-2010.
- Editorial Board , ChemPhysChem (since 2015).
- Editorial Board , Encyclopedia of Nuclear Magnetic Resonance (since 2006).
- Chairman of the Board of Trustees, EUROMAR (2011-2017).
- Member of the Program Committee, ISMAR Conference (Rio de Janeiro, 2013).
- Member of the Organizing Committee, Joint ISMAR/EuroMaR Conference (Florence, 2010).
- Member of the ISMRM Annual Meeting Program Committee (2017-2020).
- Organizer, Europol Workshop, Rehovot, Israel, November 2018.
- Co-organizer, 9th symposium on ultrahigh field MR, Max Delbruck Center, Berlin, September 2018.
- Co-Chair, NMRbox Workshop, Rehovot, Israel, November 2017.
- Chair, BioNMR JRA Meeting, Rehovot, Israel, February 2012.
- Chairperson, 50th Experimental NMR Conference (ENC), 2009.
- Co-chair, "NMR Symposium at 236th National ACS Meeting", Philadelphia, PA, August 2008.
- Co-chair, "3rd Israel-Poland NMR Workshop", Rehovot, Israel, December 2007.
- Co-chair, "A Dive Into Magnetic Resonance: A Minerva-Gentner Symposium", Eilat, Israel, December 2005.
- Chairperson, Scientific Program, 3rd Alpine Conference in Solid State NMR, Chamonix, France (2003).
- Chairperson of the 42nd NMR Symposium , Rocky Mountains Conference on Analytical Chemistry, Bloomfield, Colorado (2000).
- Committee Member, Groupment Ampere, since 2005.
- Committee Member, ISMAR Council, since 2001.
- Member, Organizing Committee, EUROMAR Conference, 2004-2007.
- Member, Organizing Committee, Experimental NMR Conference (ENC), since 2003.
- Member, Organizing Committee, 72nd Israel Chemical Society Meeting.
- Member, Award Committee, Laukien Prize in NMR (2003-2005, 2008-2010).
- Member, UIC Honors College, (1999-2001).
- Member of the NMR Symposium Organizing Committee (1994-1999); Rocky Mountains Conference on Analytical Chemistry.
- Director, The Clore Institute for High Field Magnetic Resonance Imaging and Spectroscopy, Weizmann Institute (since 2015)
- Director, Fritz Haber Center for Experimental Physical Chemistry, Weizmann Institute (2007-2012; 2017-present)

- Director, Helen L. and Martin S. Kimmel Institute for Magnetic Resonance, Weizmann Institute (since 2012)

Scientific Advising Activities

- Secretariat, US Ultrahigh Field Magnetic Resonance Initiative
- Expositor, Ultrahigh field magnetic resonance: Science at a crossroad, National Institutes of Health, Washington, DC November 2015
- Participant, Midscale Instrumentation: Needs and opportunities, National Science Foundation, Washington, DC September 2016
- Member, Scientific Review Board, Department of Chemistry, Ecole Normale Supérieure (Paris, France, 2013)
- Member, RIKEN's Center for Life Science Technologies Scientific Advisory Council (Yokohama/Kobe, Japan, 2014-2016)

Fellowships and Awards

- Kolthoff Prize, Technion – Israel Institute of Technology (2018)
- Maldacena Lecturer, Balseiro Institute, Bariloche, Argentina (2018)
- Lecturer at V Congress of the Future, Senate of the Republic of Chile, Santiago, Chile (2016)
- Tianjuan Wang Lecturer, Wuhan Institute of Physics and Mathematics (WIPM), Chinese Academy of Sciences (CAS) (2014)
- Russell Varian Lecture and Prize for Innovation in NMR (2013)
- Sir Paul T. Callaghan Lecturer, ISMAR Conference (2013)
- Outstanding Immigrant Scientist Prize 1990-2010; Ministries of Sciences and Absorption; State of Israel (2010)
- European Research Council, Advanced Grant Awardee (2010).
- Honorary Member, NMR Society of India (2010)
- Kimmel Awardee (2009).
- Fellow of the International Society of Magnetic Resonance (2008).
- Vaughan Lecturer, Rocky Mountains NMR Conference (2006).
- Arthur D. Little Lecturer in Physical Chemistry, MIT (2006).
- Sir Peter Mansfield Senior Visiting Fellow, University of Nottingham (2005).
- Israel Chemical Society Young Investigator Award (2005).
- Chemistry Awardee, Weizmann Institute Scientific Council (2004).
- Gunther Laukien Prize for contributions to NMR (2000)
- National Science Foundation-Chemistry Division, Creativity Extension Award, (1998-2000).
- Meyerhoff Visiting Professor, The Weizmann Institute of Sciences (Israel) ; December 1997-August 1998.
- Alfred P. Sloan Research Fellowship (1997-1999).
- University of Illinois, Junior Scholar (1996-1998).
- Arnold and Mabel Beckman Foundation, Beckman Young Investigator (1996-1998).

- Dreyfus Foundation, Camille Dreyfus Teacher-Scholar (1996-2001).
- National Science Foundation-Chemistry Division, CAREER Awardee (1995-1998).
- Dreyfus Foundation, Camille and Henry Dreyfus New Faculty Awardee (1992 -1997).
- National Research Council of Argentina, Postdoctoral Research Fellow (1990).
- National Research Council of Argentina, Graduate Research Fellow (1986-1990).

Curricular Activities at the Weizmann Institute

- Teaching of courses:

* MRI Primer (Graduate course for Chemists and Biologists)
* NMR Primer (Graduate course for Chemists and Biologists)

- Co-organizer, 2001 Ulpana deShalit ; Summer School for undergraduate students in Physics, Chemistry and Life Sciences.

Curricular Activities at the University of Illinois

- Teaching of undergraduate and graduate courses:

* Chemistry 222 (Sophomore Chemistry)
* Chemistry 343 (Physical Chemistry Laboratory)
* Chemistry 523 (Analytical Chemistry Graduate Laboratory)
* Chemistry 526 (NMR Graduate Course)

- Fellow of UIC Honors College (ten undergraduate students supervised).
- Research Mentor of Undergraduate Students (eight students supervised).
- Member of Doctoral Dissertation Committees.
- Participant of 1995, 1996, 1997 and 1999 Math/Science Programs (Research Component for Minority High School Students); eight students supervised.
- Recruiting Talk, "Recent Developments in Multidimensional NMR", Department of Chemistry, Carroll College, Kenosha, Wisconsin, February 1997.
- Recruiting Talk, "Solution, Solid-State and Microimaging Multidimensional NMR Research", Department of Chemistry, Indiana University - Purdue University, Fort Wayne, Indiana, December 1994.

Graduate Students advised

- Mr. David Koprovica, Weizmann Institute Ph.D. student since 2018
- Ms. Lingceng Ma, Ph. D. Student, Xiamen University; visiting research student at Weizmann (2018-)
- Mr. Roee Noff, Weizmann Institute Ph.D. student since 2018
- Mr. Martins Otikovs, Weizmann Institute Ph.D. student & Marie-Curie Fellow since 2017
- Mr. Mihajlo Novakovic, Weizmann Institute, Ph.D. student & Marie-Curie Fellow since 2016
- Mr. Ricardo Martinho , Weizmann Institute, Ph.D. student & Marie-Curie Fellow since 2016
- Mr. Mike Jaroszewicz, Weizmann Institute, Ph.D. student & Marie-Curie Fellow

since 2015

- Dr. Gil Farkash , Weizmann Institute Ph.D. student 2018. Title: “Robust Methods and Sequences for Achieving n-Dimensional Localization In-Vivo with Magnetic Resonance Spectroscopy and Imaging”
- Dr. Zhiyong Zhou, Ph. D. Student, Xiamen University; two-year research student at Weizmann (2013-2015)
- Mr. Maxim Yon, M. Sc. Student, Univ. of Nantes since 2012; six months research student at Weizmann.
- Mrs. Osnat Volovyk, Weizmann Institute, Ph.D. student 2013-2014.
- Ms. Yael Petel, Weizmann Institute, M. Sc. Student, 2012-2014. Title: "Monitoring Molecular Interactions and Dynamics Using Nuclear Magnetic Resonance Spectroscopy and Hyperpolarized ^{13}C MRS Studies of Pyruvate Metabolism in Cancer Tumors"
- Mrs. Hanna Aharon, Weizmann Institute, M. Sc. Student, 2011-2013. Title: "Multidimensional Pulses in Solution State NMR"
- Dr. Or Szekely, Weizmann Institute Ph.D. Thesis 2018. Title: “Enhancing the time resolution and the sensitivity of protein NMR”
- Dr. Noam Nissim, Weizmann Institute Ph.D./M.D. Thesis 2016 (joint with Prof. Hadassa Degani - Biological Regulation). Title: “Development and Applications in Breast and Pancreatic MRI: Tools for Investigating Structural and Physiological Features of Neoplastic Tissue”.
- Dr. Amir Seginer, Weizmann Institute, Ph.D Thesis 2016. Title: “Robust methods and sequences for in vivo magnetic resonance imaging and spectroscopy using spatiotemporal encoding”
- Dr. Eddy Solomon, Weizmann Institute Ph.D. Thesis, 2015. Title: "Understanding and Exploiting Diffusive and Perfusive Effects in Spatiotemporally Encoded Nuclear Magnetic Resonance Imaging"
- Dr. Talia Harris; Weizmann Institute Ph.D. Thesis, 2015. Title: "Novel Applications of Dissolution DNP to Biomolecular NMR"
- Dr. Rita Schmidt, Weizmann Institute Ph.D. Thesis, 2014. Title: "Spatiotemporal Encoding in 3D Ultrafast Magnetic Resonance Imaging: Developing Principles and Translations to a Clinical Setting"
- Ms. Talia Harris; Weizmann Institute M.Sc. Thesis, 2008-2009 (joint with Prof. Hadassa Degani - Biological Regulation). Title: "Hyperpolarized NMR Studies of ^{13}C-Pyruvate Metabolism in Breast Cancer Cell Cultures"; Ph.D. student since 2010.
- Dr. Noam Ben-Eliezer; Weizmann Institute Ph.D. Thesis, 2010. Title: "Magnetic Resonance Imaging Using Novel Spatiotemporal Encoding Techniques".
- Dr. Reut Avni; Weizmann Institute M.Sc. Thesis, 2007-2008 (joint with Prof. Hadassa Degani - Biological Regulation). Title: "Magnetization Transfer Magic Angle Spinning NMR Investigations of Excised Tissues"
- Mrs. Zohar Noy; Weizmann Institute M.Sc. Thesis 2007-2008. Title: "DNP and

CIDNP NMR Studies in Oriented Phases"

- Dr. Yoav Shrot; Weizmann Institute Ph.D. Thesis 2006-2009. Title: "Towards Ultrafast Spatially Encoded Multidimensional NMR In Vivo"
- Dr. Maayan Gal Weizmann Institute M.Sc 2005; Ph.D. 2009. Title: "Towards Ultrafast Spatially Encoded Multidimensional NMR In Vivo"
- Dr. Assaf Tal Weizmann Institute Ph.D Thesis 2004-2009. Title: "On the Spatial Encoding of Interactions in Nuclear Magnetic Resonance". Currently assistant professor, Weizmann Institute.
- Dr. Mor Mishkovky Weizmann Institute M.Sc 2004; Ph.D 2004-2008. Title: "Methodological Developments in Ultrafast nD NMRÓ
- Dr. Boaz Shapira; Weizmann Institute Ph.D Thesis 2002-2007. Title: "Spatial Encoding in Nuclear Magnetic Resonance: A New Tool for the Chemical and Life SciencesÓ.
- Dr. Noa Sela; Weizmann Institute M.Sc. Thesis 2002-2003 (joint with Prof. Hadassa Degani - Biological Regulation). Title: ÒUltrafast 2D NMR Using Sinusoidal Gradients: Principles and Ex-Vivo Brain InvestigationsÓ
- Mr. Yoav Shrot; Weizmann Institute M.Sc. Thesis 2002-2003. Title: "Single-scan Multidimensional NMR Spectroscopy"
- Dr. Julia Grinshtein; UI/Weizmann Ph.D. Thesis 1998-2003. Title: "Multidimensional NMR Developments in Solids and Liquid Crystalline Materials"
- Dr. Enrico DeVita; Univ. Illinois M.S. Thesis 1997-2000. Title: "Separate Local Field ^{13}C NMR Experiments Under Fast MAS Conditions"
- Ms. Valentina Rosa; Univ. Illinois M.S. Thesis 1997-1999. Title: "NMR Studies of Shear Alignment in Isotropic Polytmer Melts".
- Dr. Sungsool Wi; Univ. Illinois Ph.D. Thesis 1997-2001. Title: "Higher Order Effects in the Solid State Nuclear Magnetic Resonance of Quadrupolar Nuclei". Currently an Assistant Professor at Virginia Tech, Blacksburg (Virginia).
- Dr. Dan McElheny; Univ. Illinois Ph.D. Thesis 1996-2001. Title: "Multidimensional NMR Investigations of Polymer Structure, Order and Dynamics in the Solid and Liquid Crystalline Phase".
- Ms. Laura Marinelli; Univ. Illinois Ph.D. candidate from July 1995; passed away after a battle with cancer in the summer of 1998.
- Dr. Ales Medek; Univ. Illinois Ph.D. Thesis 1994-1998. Title: "Solid State NMR Experiments on Half-Integer Quadrupolar spins: Principles and Applications
- Dr. Min Zhou; Univ. Illinois Ph.D. Thesis 1993-1998. Title: "NMR Studies of Order and Dynamics in Liquid Crystalline Polymers".
- Mr. Jian Peng: Univ. Illinois M.S. Thesis 1992-1994. Title: "Spectral Editing in Solids NMR by Shielding Anisotropy Dephasing".

Postdoctoral Scientists advised

- Dr. Kawarpal Singh (Ph.D., RWTH-Aachen); September 2018 – present
- Dr. Samuel Cousin (Ph. D., ENS-Paris; French Foreign Volunteer Awardee); January

2017– February 2018.

- Dr. Qingjia Bao (Ph. D., Wuhan University); February 2016– present.
- Dr. Zhiyong Zhou (Ph. D., Xiamen University); Koshland Fellow; November 2015 – September 2018.
- Dr. Stefan Markovic (Ph.D., Free Berlin University); November 2015 – present.
- Dr. Eddy Solomon (Ph.D., Weizmann Institute); November 2015 – July 2018.
- Dr. Geraldine Levy (Ph.D., Univ. College London); September 2014 – October 2016.
- Dr. Yulan Lin (Ph.D., Xiamen University); September 2014 – October 2015.
- Dr. Gilad Liberman (Ph.D., Bar Ilan University); March 2014 – December 2017
- Dr. Anne Fages (Ph.D., ENS-Lyon, France; French Foreign Volunteer Awardee); February 2014 – February 2016.
- Dr. Evgeny Markhasin (Ph.D., MIT, USA); December 2013 – October 2015
- Dr. Tangi Roussel (Ph.D., Univ. Lyon, France); March 2013 – March 2016.
- Dr. Maria Baias (Ph.D.; RWTH Aachen, Germany; Postdoctoral Fellow, ENS-Lyon); Oct 2012 – July 2015. Currently faculty at NYU-UAE, Dubai
- Dr. Gonzalo Alvarez (Ph.D.; Univeristy of Cordoba, Argentina; Humboldt Postdoctoral Fellow, Dortmund University; Marie- Curie Awardee); Jun 2012 – Feb 2016. Currently faculty at the Bariloche atomic center, Bariloche, Argentina
- Dr. Noam Shemesh (Ph.D., Tel Aviv University, Israel); October 2011 - January 2014. Currently professor, Champaulimaund Center for the Unknown, Lisbon, Portugal.
- Dr. Avigdor Leftin (Ph. D., Univ. Arizona, Tucson; Fulbright Fellow; NSF postdoctoral awardee); July 2011 - March 2014.
- Dr. Jean-Nicolas Dumez (Ph. D., ENS Ð Lyon, France); September 2011 - June 2013. Currenly Maitre du Recherche, CEA Saclay
- Dr. Korvin Walter (Ph.D., MPI_Goettingen, Germany); October 2011 - December 2012
- Dr. Martin Nausner (Ph.D., Univ. Linz, Austria); January 2011 - January 2013.
- Dr. Bikash Bayshia (Ph.D., IIS-Bangalore, India); December 2010 - December 2012.
- Dr. Leah Casabianca (Ph. D., Georgetown University; Fulbright Fellow; NSF postdoctoral awardee); July 2010 - May 2013. Currently faculty at Dept. Bioengineering, Clemson University, SC.
- Dr. Kevin Donovan (Ph. D., Univ California, Irvine); July 2010 - July 2013.
- Dr. Pieter Smith (Ph. D., Univ Michigan, Ann Arbour; Fulbright Fellow); June 2010 - February 2015.
- Dr. Gregory Olsen (Ph. D., Univ Washington, Seattle; Fulbright Fellow); March 2009 - present.
- Dr. Chandrashekar Srinivasan (Ph.D., IIS-Bangalore, India); December 2008 - April 2009.
- Dr. Christian Bretschneider (Ph. D., Univ Nottingham, UK); October 2008 - present.
- Dr. Patrick Giraudeau (Ph. D., Univ Nantes, France); October 2008 - January 2009. Currently professor of chemistry, Univ. Nantes, France.
- Dr. Sefi Raz (Ph.D., Weizmann Institute, Israel); October 2005 - October 2007.

Currently patent lawyer, Webb & Co., Tel Aviv

- Dr. Rangeet Bhattacharyya (Ph.D., IIS-Bangalore, India); February 2005 Ð February 2008. Currently professor of physics, IISER Kolkata
- Dr. Frank Kramer (Ph.D., Technical University Munich, Germany); September 2004 - September 2006.
- Dr. Adonis Lupulescu (Ph.D., University of Cluj-Napoca, Romania); October 2001 - November 2003. Staff scientist December 2008 - August 2013. Currenly lecturer in physics, Hyderabad University.
- Dr. Mrignayani Kotecha (Ph.D., University of Jabalpur, India); September 2001 - April 2003.
- Dr. Chris Grant (Ph.D., University of California-Davis); NIH Postdoctoral Fellow; January 2000 - April 2002. Currently a Staff Scientist at UC San Diego (California).
- Dr. Mattias Eden (Ph.D., Stockholm University); January 2000 - December 2001. Currently Professor at Stockholm University (Sweden).
- Dr. Rob Schurko (Ph.D., Dalhousie University); October 1999 - July 2000. Currently Professor at University of Windsor (Canada).
- Dr. Sam Varner (Ph.D., College of William and Mary); April 1999 - April 2000. Currently a computer scientist at Micromeritics, Atlanta (Georgia)
- Dr. Pierre Kempgens (Ph.D., University of Strasbourg); June 1997 - June 1998.
- Dr. Joseph Sachleben (Ph.D., UC-Berkeley); October 1994 - April 1997. Currently staff scientist, University of Chicago, IL.

Undergraduate research students advised

- Ms Jacqueline Gemus, Univ. Windsor, Summer ‘16
- Mr. Mihajlo Novakovic, Univ. Belgrade, Summer '15
- Mr. Mike Harris, Technion; Summer '11
- Mr. Mark Brown, UCLA; Summer '09
- Mr. Oren Mangoubi, Yale Univ; Summer '08
- Mr. Jarrod Goldberg, UCLA; Summer '08
- Mr. Boaz Nissim-Cohen, Hebrew Univ; Summer '05
- Mr. Tomer Noyhauz, Ben Gurion Univ; Summer '05
- Ms. Dina Aronzon; Swarthmore College; Summer '03.
- Mr. Ilija Uzelac Univ. Belgrade; Summer '02 and Winter '03.
- Mr. Jose Ortiz, UIC; Summer and Fall, '00
- Ms. Cherie Ryoo, UIC; Spring '99
- Mr. Mike (Yasser) Suwan, UIC; Spring '98
- Mrs. Saphora Hashim, UIC; Spring '95
- Mr. Michael Vaysberg, UIC; Spring '95
- Mr. Peter Beverwyk, UIC; Spring '94 through Fall '95 semesters
- Mr. John Verburg, UIC; Fall '93 and Spring '94

Representative Grants Received

- Academy of Sciences – Israel Science Foundation "*Improved Magnetic Resonance*

Spectroscopy and Imaging: From Materials and Molecules to Mice and Men"; $300,000, Frydman PI (2018-2022).

- US National Science Foundation (NSF), "*Sensitivity-Enhanced High-Field Solution-State NMR By Gyrotron-Driven DNP In Low-Viscosity Supercritical Fluids*", $450,000. S. Wi (NHMFL), co-PI (2018-2021).
- National Science Foundation of China – Israel Science Foundation joint program: "*Magnetic Resonance Spectroscopy and Imaging by spatiotemporal encoding*"; $300,000, Chen, Cai and Frydman, coPI (2018-2021).
- European Research Council – Proof of Concept Supplement: "MRI diagnosis using a single-shot imaging technique with unprecedented robustness to field inhomogeneities "; €150,000 (2017-2018).
- NIH - NICHD "Integrated Placental Imaging: Novel Methods for Probing Function and Metabolism"; J. Garbow (Washington Univ) PI; (2015-2019).
- Minerva Foundation, Munich (Germany). "Sensitivity Breakthroughs in Metabolic Magnetic Resonance"; (2015-2018).
- US - Israel Binational Science Foundation (BSF), "Real-time kinetic measurements with unprecedented time and site resolutions utilizing spectro-temporal NMR encoding ", C. Hilty (Texas A&M), co-PI (2015-2018).
- EU - H2020 - People. including 12 partners; (2015-2019).
- European Research Council - Proof of Concept Supplement: "Ultrafast Spatiotemporally-Encoding: A Superior Approach to Cancer Diagnosis by Non-Invasive Diffusion- Weighted MRI"; (2015-2016).
- Leona M. and Harry B. Helmsley Charitable Trust Grant #2015PG-ISL008 "Purchase of a 21T high-field magnetic resonance scannerÓ; (2014-2016).
- NIH - NIGMS "Solution-Phase Biomolecular NMR At 24 T Fields Using New High Temperature Superconductor Technologies"; W. Brey (NHMFL, Florida) PI; (2014-2017).
- Memorial Sloan Kettering Cancer Center - Weizmann Institute Collaborative Program, The Mary L. Ralph Philanthropic Fund "Hyperpolarized MR as Route to Characterize Prostate Cancer", K. Rahimi, co-PI; (2014-2015).
- Academy of Sciences - Israel Science Foundation "Pushing Magnetic Resonance Speed and Sensitivity: From Spin Physics to Studies of Metabolites, Proteins, Cells, Animals and Humans"; (2013-2017).
- Academy of Sciences - Israel Science Foundation, Bikura program "A Paradigm Shift in Magnetic Resonance based on Coherent Quantum Control"; G. Kurizki, co-PI; (2013-2016).
- Academy of Sciences - Israel Science Foundation, i-CORE program An Integrated Approach for Cellular Structural Biology; Center-of-Excellence grant, 11 co-PIs; $300,000 (2013-2017).
- ; â"Ultrafast hyperpolarized NMR on peptides and proteins" C. Hilty, co-PI (2013-2014)
- Kamin-Yeda Grant; Israel Ministry of Trade and Industry: "New MRI methods for the rapid, non-invasive early diagnosis of breast cancer" H. Degani, co-PI

(2012-2013)

- DIP: "Dynamic Nuclear Polarization: Integrating Fundamentals and New Applications" - A joint Germany-Israel research project including 5 partners (2011-2016).
- EU - FP7: "Metaflux" - A Marie Curie Initial Training Network including 9 partners (2010-2013).
- EU - FP7: "BioNMR" A European Research Infrastructures Network, network of 19 partners (2010-2014).
- Minerva Foundation - MPG (Munich), "Ultrafast Multidimensional Magnetic Resonance in Biomedical Research" (2009-2012).
- ERC - Advanced Grant Award, "Ultrafast Hyperpolarized NMR and MRI in Multiple Dimensions" (2009-2014).
- Helen and Martin Kimmel Award, Innovative Research in Magnetic Resonance, (2009-2014)
- Academy of Sciences - Israel Science Foundation, "Development and Applications of New Sequences in Ultrafast 2D NMR" (2009-2013).
- EU - FP7: ESFRI-INSTRUCT (Infrastructure for Integrated Structural Biology in Europe) in collaboration with G. Schreiber & J. L. Sussman (Weizmann) + 5 partner institutions (2008-2010).
- EU - FP7: EuroMagNet II, Research Infrastructures for High Magnetic Fields in Europe, network of 7 co-investigators (2009-2012).
- Horowitz Foundation Grant, "Field Compensation in NMR and MRI" (2007-2008)
- EU - FP6: An Integrated Infrastructure Initiative (I3) "European Network of Research Infrastructures for Providing Access and Technological Advancements in bio-NMR" (2006-2009), network of 16 co-PIs .
- US - Israel Binational Science Foundation (BSF), "Ultrafast 2D NMR of Hyperpolarized Samples: A New Tool in Proteomics and Metabonomics" (2005-2008), in collaboration with Prof. R. Griffin (MIT).
- Academy of Sciences - Israel Science Foundation, "Ultrafast NMR at Arbitrary Spectral Dimensions" (2005-2009).
- Minerva Foundation - Gentner Symposia Program, "Eilat 2005: A Dive Into Magnetic Resonance" (2005), in collaboration with Dr. M. Baldus (MPI, Goettingen).
- NIH-General Medical Sciences "Ultrafast Multidimensional NMR: A New Biomedical Tool" (2005-2006).
- German-Israel Fund for Research, "Applications of Ultrafast Multidimensional NMR Methods to Material Sciences" (2005-2007), in collaboration with Prof. B. Blumich (RWTH, Aachen).
- Antorchas Foundation, Argentina, "From Quantum Decoherence to Material Characterization Using Advanced Techniques in Magnetic Resonance" (2004-2006), in collaboration with Prof. P. Levstein (Univ. of Cordoba, Argentina).
- Minerva Foundation - MPG (Munich) , "Advancing NMR Throughout the Periodic Table" (2003-2005).
- Academy of Sciences - Israel Science Foundation, "Solid State NMR Studies of

Diamagnetic Metals Bound to Nucleotides and Nucleic Acids" (2001-2005).

- Department of Energy- Division of Chemical Sciences, "Modern Solid State NMR Throughout the Periodic Table" (2000-2002).
- UIC Campus Research Board, "Solid State NMR as a New Tool for the Study of Biomolecular Metal Binding"(2000).
- National Science Foundation -Division of Materials Research, "NMR Studies of Structure, Order and Dynamics in Liquid-Crystalline Polymers" (1998-2001).
- National Science Foundation-Chemistry Division, Creativity Extension Award, "New High Resolution Experiments in Solid State NMR" (1998-2000).
- Alfred P. Sloan Foundation, Alfred P. Sloan Fellowship (1997-1999).
- Arnold and Mabel Beckman Foundation, Beckman Young Investigator Award, "New Methods of NMR Analysis" (1996-1998).
- The Camille and Henry Dreyfus Foundation, Camille Dreyfus Teacher-Scholar Award (1996-2001).
- University of Illinois, Junior Scholar Award (1996-1998).
- National Science Foundation -Chemistry Division, CAREER Award, "Development of New Methods in Multidimensional NMR Analysis" (1995-1998).
- National Science Foundation-Division of Materials Research, "Magnetic Resonance Studies of Order and Dynamics in Liquid-Crystalline Polymers" (1995-1998).
- UIC Campus Research Board, "Nuclear Magnetic Resonance Studies on Liquid Crystalline Polymers" (1994-1995).
- UIC Campus Research Board Small Equipment Competition, co-PI, "Solid-State NMR Upgrade for a 400 MHz Departmental Spectrometer" (1994-1995).
- American Chemical Society-Petroleum Research Fund, "NMR Studies of Structure and Dynamics in Polymers and Biopolymers" (1993-1995).
- UIC Campus Research Board, "Development and Application of New Techniques in Nuclear Magnetic Resonance" (1993-1994).
- Camille and Henry Dreyfus New Faculty Award (1992-1997).

LUCIO FRYDMAN - PUBLICATIONS

- _G. Farkash, S. Markovic, M. Novakovic and **L. Frydman**, *"Enhanced Hyperpolarized Chemical Shift Imaging Based on a priori Segmented Information";* submitted for publication (2018).
- Q. Bao, E. Solomon, G. Liberman and **L. Frydman**, *"High definition diffusion MRI: Principles and applications to visualizing pregnant mice development";* submitted for publication (2018).
- G. Farkash, G. Liberman and **L. Frydman**, *"Pulses for improving MRI's slice selectivity in the presence of strong, metal-derived inhomogeneities";* submitted for publication (2018).
- T. Roussel, **L. Frydman**, D. LeBihan and L. Ciobanu "*Beyond BOLD: CEST fMRI at ultra-high magnetic fields*", Sci Reports, in revision (2018).

- A. Leftin, J. T. Rosenberg, X. Yuan, T. Ma, **L. Frydman** and S. C. Grant**.** "*Enhancement of stroke detection by multiparametric combination of diffusion, stem cell tracking, and sodium MRI contrasts at 21.1T*"*;* NMR Biomedicine, in revision (2018).
- G.R. Levy, K. Shen, Y. Gavrilov, P.E.S. Smith, Y. Levi, R. Chan, J. Frydman and **L. Frydman**, "*Huntingtin's N-terminus solution-phase rearrangements in the presence of membranes*"; ACS Chemical Neuroscience, in press (2018)
- O. Szekely, G. Armony, G.L. Olsen, L. Bigman, Y. Levy, D. Fass and **L. Frydman** *"Identification and Rationalization of Kinetic Folding Intermediates for a Low Density Lipoprotein Receptor Ligand-Binding Module";* Biochemistry, in press (2018).
- S. Wi, R. Schurko and **L. Frydman**, "*Broadband Adiabatic Inversion Cross-Polarization Phenomena in the NMR of Rotating Solids*"; Solid State NMR, in press (2018).
- Z. Zhang, M. Lustig and **L. Frydman**, "*Phase-encoded xSPEN: A Novel High-Resolution Volumetric Alternative to RARE and Spin-Echo EPI";* Magn. Reson. Med., in press (2018).
- M. Novakovic, S. Cousin, M. Jaroszewicz, R. Rosenzweig and **L. Frydman**, "*Looped-PROjected SpectroscopY (L-PROSY): A simple approach to enhance backbone/sidechain cross-peaks in protein NMR";* J. Magn. Reson., **294**, 169-180 (2018). Cover of September 2018 issue.
- O. Szekely, G.L. Olsen, I. Felli and **L. Frydman** *"Increasing the sensitivity of intrinsically disordered protein NMR using hyperpolarized water"; Anal. Chem.* **90**, 6169-6177 (2018); cover article of June issue
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- L. Frydman, A. C. Olivieri, L. E. Diaz, A. Valasinas and B. Frydman; *A variable-temperature solid-state ^{13}C CPMAS NMR analysis of meso- tetrapropylporphyrin and of octaethylporphyrin* J. Am. Chem. Soc. 110, 5651-5661 (1988). Full paper (pdf).
- A. C. Olivieri, L. Frydman, M. Graselli and L. E. Diaz; *Analysis of ^{13}C, ^{14}N Residual Dipolar Couplings in the ^{13}C CPMAS NMR Spectra of Ribonucleosides* Magn. Reson. Chem. 26, 281-286 (1988).A HREF=../../Publications/Nucleotides_MRC88.pdf> Full paper (pdf).
- L. Frydman, A. C. Olivieri, L. E. Diaz, B. Frydman, F. G. Morin, C. L. Mayne, D. M. Grant and A. D. Adler; *High Resolution Solid-state ^{13}C NMR Spectra of Porphine and 5,10,15,20-tetraalkylporphyrins: Implications forthe N-H Tautomerization Process* J. Am. Chem. Soc. 110, 336-342 (1988). Full paper (pdf).
- L. E. Diaz, L. Frydman, A. C. Olivieri and B. Frydman; *Solid-State NMR of Drugs: Soluble Aspirin* Analytical Letters 20, 1657-1666 (1987).
- A. C. Olivieri, L. Frydman and L. E. Diaz; *A simple approach for relating molecular and structural information to the dipolar coupling ^{13}C- ^{14}N in ^{13}C CPMAS NMR* J. Magn. Reson. 75, 50-62 (1987).

LUCIO FRYDMAN - PATENTS

- US Patents No. 6,873,153; 7,271,588; European Patent 1,694,280: *Method and apparatus for acquiring multidimensional spectra and improved unidimensional spectra within a single scan*; L. Frydman (2005).
- US Patent No. 7,944,206; European Patent 1,963,830: *Method and apparatus for acquiring high resolution spectral data or high definition images in inhomogeneous environments*; L. Frydman, B. Shapira and A. Tal (2011).
- International (PCT) patent application WO2014/203253 *Methods for Spatial and Spectral Selectivity in Magnetic Resonance Imaging and Spectroscopy* L. Frydman and J.-N. Dumez (2014)
- International (PCT) patent application *A new strategy for endowing immunity to magnetic resonance images collected in the presence of magnetic field distortions* L. Frydman and Z. Zhang (2015)

LUCIO FRYDMAN - EDITORIALS AND SPECIAL ISSUES

- L. Frydman, *Editorial – Becoming a JMR Editor* J. Magn. Reson., 208, 2-3 (2011).
- *Magnetic Moments: The History of NMR and MRI in the Pages of JMR*; L. Frydman, Ed.; J. Magn. Reson., 213, 213-574 (2012).
- *Frontiers on In Vivo and Materials Magnetic Resonance Imaging*; J. J. Ackerman, B. Blümich and L. Frydman, Eds.; J. Magn. Reson., 229, 1-222 (2013).
- L. Frydman, *High Magnetic Field Science and its Application in the United States: A Magnetic Resonance Perspective*, J. Magn. Reson., 242, 256-264 (2014).
- *Outlooks on Contemporary NMR Spectroscopy*; A. Schmidt and L. Frydman, Eds., Israel J. Chem., 54 (2014).
- *Foresights in Biomolecular Solution-State NMR Spectroscopy - – From Spin Gymnastics to Structure and Dynamics*; L. Kay and L. Frydman, Eds.; J. Magn. Reson., 238 (2014).
- *Prof. Luis Diaz and the early days of solid state NMR in Argentina*; Current Pharmaceutical Biotechnology (2016).
- *Outlooks on hyperpolarized nuclear magnetic resonance spectroscopy and imaging*; G. Jeschke and L. Frydman, Eds.; J. Magn. Reson., (2016).
- L. Frydman ”Virtual special issues: A new outreach effort from The Journal of Magnetic Resonance”; J. Magn. Reson., 274 (2016).
- “Outlooks on hyperpolarized nuclear magnetic resonance spectroscopy and imaging”; G. Jeschke and L. Frydman, Eds.; J. Magn. Reson., 264 (2016).

LUCIO FRYDMAN - INVITED LECTURES AND SEMINARS

- _ *“The watched pot that boils faster: New Routes to Enhance the Sensitivity of Biomolecular NMR”;* Israel Magnetic Resonance Society Meeting, Bar Ilan University, Israel, October 2018.
- *“TBA”;* Maldacena Lectures, Balseiro Institute, Bariloche, Argentina, September & October 2018.
- *“A watched pot that boils faster: The L-PROSY approach to enhancing cross peak intensities*

in 2D NMR correlations"; 27th ICMRBS, Dublin, Ireland, August 2018.

- *"Progress in High-Definition ADC mapping by Spatiotemporally Encoded MRI";* Bruker Workshop at the 27th ICMRBS, Dublin, Ireland, August 2018.
- *"In Vivo Magnetic Resonance at Ultrahigh Magnetic Fields";* Gordon Conference on In Vivo Magnetic Resonance, Andover, New Hampshire, July 2018.
- *"Robust high resolution MRI in anatomical and diffusion investigations by spatiotemporal encoding";* Plenary Lecture, 2018 Euromar, Nantes, France, July 2018.
- *"Heteronuclear magnetisation transfer phenomena in solution-phase hyperpolarised NMR: small molecules, proteins, in vivo";* Plenary Lecture, VIII Iberoamerican NMR Symposium, Lisbon, Portugal, June 2018.
- Invited Seminar, Xiamen University, Xiamen, April 2018.
- Invited Seminar, Chinese Academy of Sciences, Beijing, April 2018.
- *"Progress in spatiotemporally encoded magnetic resonance";* Ultrahigh Field Preclinical MRI Symposium, Weizmann Institute, Israel, March 2018.
- Invited seminar, Department of Radiology, NYU Langone Medical Center, October 2017.
- *"^{13}C NMR experiments on diamonds in bulk with enhanced sensitivity";* Schulich Diamond symposium, Technion, Haifa, Israel, September 2017.
- *"Single-shot Multidimensional NMR Spectroscopy and Imaging by Spatiotemporal Encoding"*, European Conference Physical Chemistry, Corsica, France, September 2017.
- *"Single- and Multi-shot Spatiotemporally Encoded MRI"; 20th* ISMAR, Quebec City, Canada, July 2017.
- Invited seminar, Department of Radiology, Stanford University, March 2017.
- "A Primer on Solution State Multidimensional NMR", 58th ENC, Asilomar, CA, March 2017.
- "Principles and Applications of Ultrafast Imaging by Spatiotemporal Encoding"; 7th Asia Pacific NMR Symposium, Bangalore, India, February 2017.
- "Solid and solution state ^{13}C NMR experiments with enhanced sensitivity via optically-pumped and microwave-driven electronnuclear polarization transfer in diamonds"; Diamond architectures for quantum computing and sensing workshop, Jerusalem, Israel, February 2017.
- "Chemical and Biochemical Dynamics from Hyperpolarised NMR"; RSC NMR Discussion Group, London, December 2016.
- Invited Seminar; Department of Physics, Duke University, Durham NC, September 2016.
- "On The Potential of Optically-pumped and Microwave-driver DNP of Diamonds in Solid-State and Dissolution ^{13}C NMR"; 58th Rocky Mountain Conference, Breckenridge, Colorado, July 2016.
- "Exploiting heteronuclear magnetisation transfer phenomena in solution-phase hyperpolarised NMR"; Israel Magnetic Resonance Symposium, Rehovot, June 2016.
- "In vivo metabolic profiling of brain rodent models by RE MRS at 21.1T" and "Slice-encoded cross-term SPEN for single-scan imaging near metal implants"; 24th ISMRM, Singapore, May 2016.

- “Dynamic Nuclear Polarization in Solid- and Solution-State NMR and MRI”; 57th ENC, Pittsburgh, Pennsylvania, April 2016.
- Invited Seminar; Memorial Sloan Kettering Cancer Center, New York, April 2016.
- “Una incursion por el mundo de la resonancia magnetica”; V Congress of the Future, Senate of Chile, Santiago, Chile, January 2016.
- "Exploiting Solution-State Heteronuclear Magnetization Transfer Effects in Hyperpolarized Biomolecular NMR"; 5th DNP Symposium, Egmond am Zee, Holland, August 2015.
- "A Robust Suite of Fast and Ultrafast Methods for In Vivo Spectroscopy Imaging of pre-Targeted Metabolic Peaks"; 56th ENC, Asilomar, California, April 2015.
- Invited Seminar; Memorial Sloan Kettering Cancer Center, New York, April 2015.
- Invited Seminar; Rotem Limited, Dimona, Israel, March 2015.
- "Principles and Progress in Ultrafast ImagingÓ invited lecture, Israel Biomedical Engineering Meeting, Haifa, February 2015.
- "Metabolism and Microarchitecture From Advanced 1H and ^{13}C NMR Spectroscopy and Imaging" invited lecture, 43rd Meeting of the Japanese NMR Society, Osaka, November 2014.
- Tianjuan Wang Lecture, Wuhan Institute of Physics and Mathematics (WIPM), Chinese Academy of Sciences (CAS), China, November 2014.
- Invited Seminar; Xiamen University, China, November 2014.
- "Chemically-Specific Echoes and the Acquisition of Multidimensional Magnetic Resonance Data in a Single Scan" invited lecture, Echoes in Complex System Conference, Dresden, September 2014.
- "Emerging Opportunities in High-Sensitivity 1H and ^{13}C In Vivo Magnetic Resonance" invited lecture, 36th Meeting German NMR Society, Berlin, September 2014.
- Invited Seminar; Texas A&M Univ., College Station, Texas, August 2014.
- "Emerging methodologies in in vivo 1H and in hyperpolarized ^{13}C MRS, MRI and MRSI"; plenary lecture, 25th ICMRBS, Dallas, Texas, August 2014.
- "Novel Metabolic and Microarchitectural Brain Insight from Advanced 1H Magnetic Resonance Spectroscopic and Imaging Techniques", Florida Brain Symposium, Tallahassee, Florida, July 2014.
- Invited Seminar; NHMFL, Tallahassee, Florida, July 2014.
- Invited Seminar; Bar Ilan University, Ramat Gan, Israel, May 2014.
- "In Vivo Longitudinal Relaxation Enhancement of Brain Metabolites: Superior 1H MRS and Novel Biomarkers"; 55th ENC, Boston, Massachusetts, March 2014.
- Invited Seminar; Holon Institute of Technology, Holon, Israel, December 2013.
- "MR Acquisition Strategies for Hyperpolarized Substrates"; 2013 ESMRBM, Toulouse, France, October 2013.
- "Principles of Ultrafast Multidimensional NMR" and "Application of Ultrafast NMR to Emerging Hyperpolarized Experiments"; 2013 SMASH symposium, Santiago de Compostela, Spain, September 2013.

- "Ultrafast Multidimensional NMR and MRIÓ; Russell Varian Prize Lecture, 9th EUROMAR Conference, Hersonissos, Crete, July 2013.
- "Exploiting Dissolution DNP in Biomolecular NMRÓ; 3rd Annual BioNMR Meeting, Budapest, Hungary, June 2013.
- "Emerging Frontiers in Ultrafast Multidimensional NMR and MRI"; Paul Callaghan Lecture, 18th ISMAR Conference, Rio de Janeiro, Brazil, May 2013.
- "Old Dog, New Tricks: New Multi-pulse NMR Sequence to Characterize Solution-State Structure and Dynamics"; 18th ISMAR Conference, Rio de Janeiro, Brazil, May 2013.
- Invited Seminar; CRMN, Lyon, France, March 2013.
- "Sensitivity Challenges in NMR and MRI: What are they and how to overcome them"; ENS-Lyon, France, March 2013.
- "Fire Against Fire: Resolution Improved With the Aid of Couplings?"; Rocky Mountains NMR Symposium, Copper Mountain, Colorado, July 2012.
- "Chemical Shift Modulations from Fully-Refocused Spin-Echo Sequences: A Direct Access to "Invisible" States in Exchanging Systems?"; 12th Chianti / INSTRUCT Symposium, Montecatini, Italy, June 2012.
- "Hyperpolarized NMR to Follow Metabolic Processes: Principles and Methods Development?"; 12th Chianti / INSTRUCT Symposium, Montecatini, Italy, June 2012.
- "Hyperpolarized NMR to Follow Metabolic Processes: Principles and Methods Development"; BioNMR Symposium, Portoroz, Slovenia, May 2012.
- "Ultrafast NMR: A Coherent Picture?Ó; Tutorial invited lecture at 53rd ENC, Miami, Florida, April 2012.
- "Can NMR Still Deliver? A Survey of Challenges and Strategies"; A symposium in honor of Zeev Luz, Weizmann Institute, Israel, February 2012.
- "Advantages and Prospects of Spatiotemporal Encoding in Single- and Multi-scan MRI"; Frontiers in Biomedical NMR; a symposium in honor of Gil Navon, Tel Aviv University, Israel, October 2011.
- "Alternatives in the Rapid Acquisition of Multidimensional NMR and MRI Data"; Euromar Conference, Frankfurt, Germany, August 2011.
- "Emerging Alternatives in the Rapid Acquisition of Multidimensional NMR and MRI Spectra and ImagesÓ; Keynote Lecture, NMR Gordon Conference, Maine, USA, June 2011.
- "Hyperpolarized NMR and MRI: Magnetic ResonanceÕs Latest Hype?"; Keynote Lecture, NMR Gordon Research Seminar, Maine, USA, June 2011.
- "Emerging Strategies in the Rapid Acquisition of Multidimensional NMR and MRI Spectra and ImagesÓ; Israel Magnetic Resonance Society Meeting, Tel Aviv University, Israel, June 2011.
- "Novel RF Strategies For a Faster and More Efficient Acquisition of Multidimensional NMR SpectraÓ; Computational Aspects Ð Biomolecular NMR Gordon Conference, Il Ciocco, Italy, May 2011.
- "Ultrafast, Ultrasensitive Multidimensional NMR and MRI"; Chemical Physics

Sackler Symposium, Tel Aviv University, Israel, May 2011.

- "Single-scan Multidimensional NMR and MRI By Spatiotemporal Encoding: Principles, Opportunities and ChallengesÓ; AUREMN Ð The Brazilian NMR Association, Angra dos Reis, Brazil, May 2011.
- "Shapes in Time and Space: Alternative Lifestyles in Multidimensional NMR and MRI"; 52nd ENC, Asilomar, California, April 2011.
- Invited Seminar, Agilent Laboratories, Santa Clara, California, April 2011.
- Invited Seminar, National High Magnetic Field Lab, Tallahassee, Florida, February 2011.
- Invited Seminar, Bar Ilan University, Ramat Gan, Israel, February 2011.
- Invited Seminar, CEA Saclay, France, October 2010.
- Invited Seminar, Agilent Laboratories, Santa Clara, California, August 2010.
- Invited Seminar, Department of Chemistry, Florida State University, Tallahassee, Florida, August 2010.
- Invited Seminar, College of Medicine, University of Florida, Gainsville, Florida, August 2010.
- "Spatially Encoded NMR as a New Imaging Modality: Principles and ProspectsÓ; lecture at the Joint EUROMAR 2010 and 17th ISMAR Conference, Florence, Italy, July 2010.
- "Ongoing Developments in Ultrafast, Ultrasensitive Multidimensional NMR and MRIÓ; keynote lecture at IMM Symposium, Radboud University, Nijmegen, The Netherlands, May 2010.
- "Indirect Detection of Enzymatic Processes by Hyperpolarized NMR: Temporal Information, Enhanced Spectral Resolution and Slow Spin RelaxationÓ; 2010 ISMRM Meeting, Stockholm, Sweden, May 2010.
- Invited Seminar, School of Physics and Astronomy, University of Cordoba, Argentina, March 2010.
- Invited Seminar, Institute of Molecular and Cellular Biology, University of Rosario, Argentina, March 2010.
- Invited Seminar, Faculty of Exact Sciences, University of Buenos Aires, Argentina, March 2010.
- "NMR, MRI & EPR Coming Together in the Aid of Structure Elucidation: Ultrafast, Ultrasensitive Multidimensional NMRÓ; plenary lecture at Structure2010, Leicester, UK, February 2010.
- "Ultrafast and Ultrasensitive Multidimensional NMR SpectroscopyÓ; invited lecture at the 75th Israel Chemical Society Meeting, Tel Aviv, Israel, January 2010.
- "Multidimensional NMR Spectroscopy - In a Fraction of a Second and at µM Concentrations?Ó; closing lecture, Journee RMN Grand Sud Est, Marseille, France, October 2009.
- "Magnetic Resonance Latest ÔHypeÕ: Hyperpolarized NMR and MRIÓ; Opening Lecture, 1st DNP Summer School, Safed, Israel, October 2009.
- "Citius - Altius - Fortius: Resonating at the EPR/NMR/MRI InterfaceÓ; keynote lecture at 2009 National NMR Meeting GIDRM, Palermo, Italy, September 2009.

- "Indirectly-Detected Ultrafast 2D NMR of Hyperpolarized SolutionsÓ; 2nd International DNP Symposium, Frankfurt, Germany, September 2009.
- "Progress in Ultrafast 2D NMR"; keynote lecture at 31st Finnish NMR Symposium, Kuusamo, Finland, June 2009.
- Invited Seminar, Chemistry Department, University of California - Irvine, April 2009.
- "Principles of Ultrafast 2D NMR"; keynote lecture at Magnetic Moments in Central Europe, Otocec, Slovenia, February 2009.
- "Principles and Prospects of Hyperpolarized Ultrafast 2D NMR"; Magnetic Resonance in the Life Sciences Workshop, Montecatini, Italy, December 2008.
- "Citius Đ Altius Đ FortisÉ in NMR Spectroscopy", Keynote Lecture, Chicago Area NMR Discussion Group, Washington University, St. Louis, November, 2008.
- Invited Seminar, Chemistry Department, Purdue University, November 2008
- Invited Seminar, Chemistry Department, Ohio State University, November 2008
- "Principles and Prospects of Hyperpolarized Ultrafast 2D NMR"; Frontiers of Biomolecular NMR Workshop, Safed, Israel, September 2008.
- "Progress in Single-Scan Multidimensional NMRÓ; 3rd EUROMAR Meeting, St. Petersburg, Russia, July 2008.
- "Some Unusual Experiments At the Interface of NMR, EPR and MRI"; Computational Aspects Đ Biomolecular NMR Gordon Conference, Il Ciocco, Italy, May 2008.
- "Hyperpolarized Single-Scan 2D NMR Spectroscopy"; 49th Experimental Nuclear Magnetic Resonance Conference, Asilomar, California, March 2008.
- Invited Colloquium, Weizmann Institute, Rehovot, Israel, March 2008.
- ÒBiological Perspectives of Single-Scan Multidimensional NMR"; 8th NMR Đ A Tool in Biology Conference, Paris, France, January 2008.
- Invited Seminar, Ecole Normal Superieure, Lyon, France, October 2007.
- "Multidimensional NMR Meets DNP", 1st DNP Symposium, Nottingham, UK, August 2007.
- Invited Seminar, Sir Peter Mansfield Magnetic Resonance Center, Nottingham, UK, August 2007.
- "Multidimensional NMR Within a Single Scan", CCPN Workshop, Ambleside, UK, August 2007.
- "Progress in Ultrafast Multidimensional NMR", 11th Chianti Workshop, Villambrosa, Italy, June 2007.
- "Single-Scan 2D NMR", Metal-Containing Drugs Workshop, Jerusalem, Israel, April 2007.
- "Ultrafast Multidimensional NMR: A New Tool in Spectroscopy", Chem Israel 2007, Tel Aviv, Israel, February 2007.
- "Principles and Progress in Single Scan Multidimensional NMR", EU-NMR Workshop, Florence, Italy, January 2007.
- Invited Seminar, Faculty of Chemistry, Hebrew University, Jerusalem, Israel, November 2006.

- "Single-scan Multidimensional NMR: An Emerging Spectroscopic and Imaging Tool", Clore Workshop on New Imaging Technologies, Rehovot, Israel, October 2006.
- "Single-Scan Multidimensional NMR In Liquids Ð And In Solids?"; EUROMAR Meeting, York, United Kingdom, July 2006.
- "Principles and Progress in Ultrafast Multidimensional NMR"; Vaughan Award Lecture, Rocky Mountain Conference, Breckenridge, Colorado, July 2006.
- Invited Seminar, Department of Chemistry, Universidad Complutense, Madrid, Spain, June 2006.
- Ultrafast Multidimensional NMR: An Emerging Technique for Spectroscopy and Imaging"; High-Field NMR Spectroscopy School for Solids and Liquids, Les Houches, France, May 2006.
- Invited Seminar, MRI Electrical Engineering groups, Stanford, California, April 2006.
- "Spatial Encoding and the Acquisition of High Definition MR Images in Inhomogeneous Fields"; 47th Experimental Nuclear Magnetic Resonance Conference, Asilomar, California, April 2006.
- Arthur D. Little Series of Lectures in Physical Chemistry, MIT , Cambridge, Mass, March 2006.
- Invited Seminar, Department of Chemistry, Bar Ilan University, Ramat Gan, Israel, January 2006.
- Invited Seminar, Chemistry Faculty, Ben Gurion University, Beer Sheba, Israel, January 2006.
- "Developments in Single-Scan Multidimensional NMR and MRI"; 1st Asia-Pacific Nuclear Magnetic Resonance Conference, Yokohama, Japan, November 2005.
- "High Resolution NMR and High Defintion MRI in Inhomogeneous Fields"; Fourth Alpine NMR Conference, Chamonix, France, September 2005.
- 7th Annual Meeting of the Italian Magnetic Resonance Society, Rome, Italy, September 2005; could not attend.
- "Principles and Progress of Spatially Encoded NMR and MRI"; 1st EUROMAR Meeting, Veldhoven, The Netherlands, July 2005.
- 7th School of Structural Biology and Magnetic Resonance, Erice, Italy, June 2005; could not attend.
- "Progress in Ultrafast Multidimensional NMR Spectroscopy"; Gordon Conference in Magnetic Resonance, New London, Connecticut, June 2005.
- Invited Seminar, Sir Peter Mansfield NMR Center, University of Nottigham, Nottingham, United Kingdom, April 2005.
- "Spatially Encoded NMR: Single-Scan Multidimensional Spectroscopy and Beyond"; XiXth French Conference in Magnetic Resonance, La Calanque de Marseilles, France, April 2005.
- "Single Scan Multidimensional NMR Spectroscopy"; GIF Meeting on Novel Approaches in Magnetic Resonance: Fundamentals and Applications, Dead Sea, Israel, February 2005.

- "Principles and Progress in Single-Scan Multidimensional NMR"; 70th Annual Israel Chemical Society Meeting, Tel Aviv, Israel, February 2005.
- "Principles and Perspectives of sub-Second Multidimensional NMR Spectroscopy"; Frontiers of NMR in Molecular Biology IX, Banff, Canada, February 2005.
- "Single Scan Multidimensional NMR: A New Tool in Spectroscopy and Imaging"; British NMR Discussion Group, London, UK, December 2004.
- Invited Seminar, Condensed Matter Physics Department, Weizmann Institute, Rehovot, Israel, November 2004.
- "Multdimensional NMR in a Fraction of a Second"; 3rd Biannual Spanish NMR Conference, Santiago de Compostela, Spain, September 2004.
- "Spatial Encoding and the Acquisition of Multidimensional NMR Spectra Within a Single Scan"; 17th European Experimental NMR Conference, Lille, France, September 2004.
- Invited Seminar, MRI/MRS Center, Beth-Israel Deaconess Medical Center, Boston, Massachusetts, August 2004.
- Invited Seminar, Chemical Physics Group, University of California, Berkeley, California, August 2004.
- "Catching Up With MRI: Multidimensional NMR Goes Ultrafast"; Rocky Mountain Conference on Analytical Chemistry, Denver, Colorado, July 2004.
- Invited Seminar, Department of Chemistry, Brandeis University, Waltham, Massachusetts, July 2004.
- Invited Seminar, Francis Bitter Magnet Lab, Cambridge, Massachusetts, July 2004.
- "Principles and Applications of Ultrafast Multidimensional NMR", SAIPO Meeting, Florence, Italy, June 2004.
- "Principles and Progress in Single Scan Multidimensional NMR"; Israel Annual Magnetic Resonance Society Meeting, Ramat Gan, Israel, June 2004.
- "Ultrafast NMR and the Acquisition of Multidimensional Spectra Within a Single Scan"; 45th Experimental Nuclear Magnetic Resonance Conference, Asilomar, California, April 2004.
- Invited Seminar, Harvard-MIT Physical Chemistry Series, Cambridge, Mass, April 2004.
- "Principles and Applications of Ultrafast Multidimensional NMRÓ; 2004 ANZMAG Conference, Adelaide, Australia, February 2004.
- "Ultrafast NMR and the Acquisition of Multidimensional Data within a Single Scan"; 7th European Large Scale Facilities Meeting, Oosterbeek, The Netherlands, November 2003.
- "On the Acquisition of Multidimensional NMR Spectra Within a Single Scan"; 25th Annual German Magnetic Resonance Symposium, Leipzig, Germany, September 2003.
- "Gone in 60 (milli)Seconds - Some New Developments in Multidimensional NMR"; New Jersey ACS NMR meeting, Woodbridge, New Jersey, June 2003.
- "Ultrafast Multidimensional NMR Spectroscopy"; Gordon Conference in Magnetic Resonance, Salve Regina, Rhode Island, June 2003.

- "Single-Scan Multidimensional NMR Spectroscopy: Principles and Applications"; 9th Annual NMRS Symposia, Bangalore, India, February 2003.
- Invited Seminar, Department of Chemistry, Technion, Haifa, Israel, December 2002.
- Invited Seminar, Department of Chemistry, Hebrew University, Jerusalem, Israel, December 2002.
- Invited Seminar, Macromolecular Research Center, RWTH, Aachen, Germany, October 2002.
- Minerva Foundation Materials Workshop, Max Planck Society, Munich, Germany, October 2002.
- Invited Seminar, Department of Chemistry, Southampton University, Southampton, UK, September 2002.
- Invited Seminar, Department of Chemistry, University of Cambridge, Cambridge, UK, September 2002.
- "Promises and Challenges in the Study of Diamagnetic Metals Bound to Biomolecules"; 43rd Experimental Nuclear Magnetic Resonance Conference, Asilomar, California, April 2002,
- "NMR: Physics, Chemistry and Biology From the Same Tiny Package", Shneior Lifson Memorial Lecture, Rehovot, Israel, February 2002.
- "Solid State NMR Studies of Metal Binding to Nucleotide and Nucleic Acids", 67th Israel Chemical Society Meeting, Jerusalem, Israel, January 2002.
- "New Developments in the NMR of Quadrupole Nuclei", Second Alpine NMR Conference, Chamonix, France, September 2001.
- "Second Order Effects in the NMR of Quadrupole Nuclei", ISMAR 2001 Conference, Rhodes, Greece, August 2001.
- "Higher Order Effects in Solid State NMR2, 15th International Meeting on NMR Spectroscopy, Durham, UK, July 2001.
- "New Spins on Separate Local Field Solid State NMR", Israel Annual Magnetic Resonance Society Meeting, Haifa, Israel, May 2001.
- Invited Seminar, Department of Chemistry, University of Windsor, Ontario, Canada, January 2001.
- Invited Seminar, Department of Chemistry, University of Waterloo, Ontario, Canada, October 2000.
- " New ^{13}C NMR Experiments on Spinning and Static Samples", Keynote lecture at the Chicago Area NMR Discussion Group, Department of Chemistry, University of Illinois, Urbana, Illinois, October 2000.
- "Something Old, Something NewSÿProgress in the ^{13}C NMR of Spinning and Static Samples", 11th Varian/ Chemagnetics NMR Symposium, Estes Park, Colorado, August 2000.
- Invited Seminar, Chemical Physics Group, University of California, Berkeley, California, May 2000.
- "Gunther Laukien Award Address", 41st Nuclear Magnetic Resonance Conference, Asilomar, California, April 2000.

- Invited Seminar, Department of Chemistry, University of North Carolina, Chapel Hill, North Carolina, February 2000.
- Invited Seminar, Department of Chemistry, Northwestern University, Evanston, Illinois, January 2000.
- Invited Seminar, Department of Chemistry, Iowa State University, Ames, Iowa, January 2000..
- Shlomo Alexander Memorial Lecture, Israel Academy of Sciences, Jerusalem, Israel, December 1999.
- Invited Seminar, Department of Chemistry, California Institute of Technology, Pasadena, California, November 1999.
- "Recent Advances in Multidimensional Solid State NMR Spectroscopy", National ACS Meeting, New Orleans, Louisiana, August 1999
- "Multiple-Quantum Magic-Angle-Spinning NMR of Half-Integer Quadrupolar Nuclei", Plenary Lecture, 7th Meeting of the Brazilian Association of NMR Users, Rio de Janeiro, Brazil, May 1999.
- Invited Seminar, Department of Chemistry, University of Wisconsin, Madison, Wisconsin, February 1999.
- Invited Seminar, Department of Chemistry, Dalhousie University, Halifax, Nova Scotia, Canada, January 1999.
- Invited Seminar, Department of Chemistry, West Virginia University, Morgantown, West Virginia, December 1998.
- Invited Seminar, Chemistry Division, Argonne National Laboratory, Argonne, Illinois, November 1998.
- Invited Seminar, Analytical Division, Monsanto Corporation, St. Louis, Missouri, November 1998.
- Invited Seminar, Department of Chemistry, University of Illinois at Chicago, Chicago, Illinois, October 1998.
- Invited Seminar, Department of Chemistry, University of Nebraska, Lincoln, Nebraska, October 1998.
- Invited Seminar, Department of Chemistry, University of Tennessee, Knoxville, Tenessee, September 1998.
- "Solid State ^{59}Co NMR Characterizations of Bioinorganic Complexes", National ACS Meeting, Boston, Massachussets, August 1998
- "Recent Developments in High Resolution Solid State NMR", Israel Annual Magnetic Resonance Society Meeting, Beer Sheba, Israel, June 1998.
- Invited Seminar, Department of Chemistry, Technion, Haifa, Israel, June 1998.
- Invited Seminar, Department of Chemical Physics, The Weizmann Institute, Rehovot, Israel, May 1998.
- Invited Seminar, Department of Chemistry, University of Michigan, Ann Arbor, Michigan, November 1997.
- "NMR Studies of Lyotropic and Thermotropic Polymers in their Solid and Fluid Phases", Eastern Analytical Society Symposium, Somerset, New Jersey, November

1997.

- Invited Seminar, Department of Chemistry, University of Iowa, Iowa, November 1997.
- Invited Seminar, Massachussetts Institute of Technology, Cambridge, Massachussets, November 1997.
- "Multiple-Quantum Magic-Angle-Spinning NMR of Half-Integer Quadrupolar Nuclei", 29th Southeastern Magnetic Resonance Conference, University of Florida and National High Magnetic Field Laboratory, Gainesville, Florida, October 1997.
- Invited Seminar, Department of Chemistry, Columbia University, New York, New York, October 1997.
- "Solid State NMR of Quadrupolar Nuclei", 10th Annual Midwest NMR User's Meeting, University of Akron, Akron, Ohio, August 1997.
- "New Methods of NMR Analysis", Beckman Symposium, Arnold and Mabel Beckma Center, Irvine, California, August 1997.
- NIH Workshop, University of Pennsylvania, July 1997.
- "Multiple-Quantum MAS NMR Experiments on Quadrupoles", Gordon Conference on Magnetic Resonance, New England College, New Hampshire, June 1997.
- "New Experiments for determining Distances and Orientations in Solids", 7th Chianti Workshop on Magnetic Resonance, San Miniato, Toscana, Italy, June 1997.
- "Recent Developments in Quadrupolar Solid Phase NMR", American Physical Society Meeting, Kansas City, Missouri, March 1997.
- "A DEAR Approach to Solid Phase Internuclear Determinations", ACS Midwest Regional Meeting, Sioux Falls, South Dakota, November 1996.
- "On and Off the Magic Angle: Research Recollections from the Last Years", The University of Illinois at Chicago, Chicago, Illinois, September 1996.
- "Pulsed-Gradient Spin-Echo Studies of Anisotropic Diffusion in Liquid Crystalline Phases", 1996 FACSS Meeting, Kansas City, Missouri, September 1996.
- "Multiple-Quantum MAS NMR of Quadrupolar Nuclei", 212th ACS National Meeting, Orlando, Florida, August 1996.
- "New NMR Methods for Understanding Solid State Spectra of Quadrupolar Nuclei", 1996 Magnetic Resonance Skill Group Symposium, UOP Research Center, Des Plaines, Illinois, July 1996.
- "Multiple-Quantum MAS NMR of Half-Integer Quadrupolar Nuclei", 13th European Experimental NMR Conference, Paris, France, May 1996.
- "High-Resolution NMR of Half-Integer Quadrupolar Spins at the Magic Angle", 37th Nuclear Magnetic Resonance Conference, Asilomar, California, March 1996.
- "Recent Developments in Multidimensional NMR", Department of Chemistry, Michigan State University, East Lansing, Michigan, February 1996.
- "From Spins to Structures: Recent Developments in Multidimensional NMR", Department of Chemistry, Yale University, New Haven, Connecticut, January 1996.
- "Multidimensional NMR Correlations on Quadrupolar Nuclei", Rocky Mountain Conference on Analytical Chemistry, Denver, Colorado, July 1995.
- "High Resolution MQMAS NMR of Half-Integer Quadrupolar Spins", 6th

Chemagnetics Workshop, Fort Collins, Colorado, July 1995.

- "Chemical Exchange in Organic Systems: Reconciling the NMR and the Diffraction Pictures", Seventh Midwest Organic Solid-State Symposium, Indiana University, Bloomington, Indiana, June 1995.
- "Multidimensional NMR Spectroscopy of Quadrupolar Spins", Department of Physics, University of Rome, Rome, Italy, March 1995.
- "Eppur Si Muove - A CPMAS Perspective of Dynamic Processes in Solids", Chicago Area NMR Discussion Group, Department of Chemistry, Purdue University, West Lafayette, Indiana, November 1994.
- "Exchange Processes in Organic Crystals: Can the Solid-State NMR and Diffraction Results Be Reconciled?", Rocky Mountain Conference on Analytical Chemistry, Denver, Colorado, August 1994.
- "New Developments in Multidimensional NMR", Chemistry Department, Loyola University, Chicago, Illinois, March, 1994.
- "Non-Cartesian Sampling Schemes in Multidimensional NMR", Keynote Lecture, Chicago Area NMR Discussion Group, AMOCO Research Center, Naperville, Illinois, November, 1993.
- "Non-Cartesian Sampling Schemes in Multidimensional NMR: Principles and Applications", Chemistry Division, Argonne National Laboratory, Argonne, Illinois, November 1993.
- "Two- and Three-Dimensional Variable-Angle Correlation Spectroscopy in Solid-State NMR", Gordon Conference on Magnetic Resonance, Wolfeboro, New Hampshire, July 1993.
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- "Solid state NMR studies on the structure of free-base porphyrins"; 6th Meeting of the Argentine Society for Research in Organic Chemistry (SINAQO), Cordoba, Argentina, October 1988.
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