

Dmitri E. Kharzeev – CV

Address	Department of Physics and Astronomy Stony Brook University, NY 11794	Office Phone	+1 (631) 632 8118
Date of Birth	6 th September 1963	Email	dmitri.kharzeev@stonybrook.edu
		Web page	http://www.physics.sunysb.edu/kharzeev

Personal Profile

Theoretical physicist working on nuclear physics, quantum field theory, quantum information, and condensed matter physics. Distinguished Professor of Physics and Director of the Center for Nuclear Theory at Stony Brook University, and a Senior Scientist and Head of RIKEN-BNL Theory group at Brookhaven National Laboratory on Long Island, NY.

Education

1980-1986 MSc: Quantum Statistics and Field Theory Division (Head: N.N.Bogoliubov),
Physics Department, Moscow State University

Winner, USSR Competition in Physics for students, 1986

1986-1990 PhD: Physics Department, Moscow State University

Theoretical Particle and Nuclear Physics

Employment History

2020 - Present Director, Center for Nuclear Theory, Stony Brook University, NY

2018 - Present Distinguished Professor, Department of Physics and Astronomy, Stony Brook University, NY

2010 - 2018 Professor of Physics, Department of Physics and Astronomy, Stony Brook University, NY

2015 - 2021 Head, Theory group, RIKEN-BNL Research Center, Brookhaven National Laboratory, NY

2013 - 2019 Director, Center for Quantum Materials, Stony Brook University, NY

2004 - Present Senior Scientist, Brookhaven National Laboratory, NY

2007 - 2012 Adjunct Professor, Department of Physics, Yale University, CT

2004 - 2010 Head, Nuclear Theory group, Brookhaven National Laboratory, NY

- 2000 - 2004** Scientist with tenure, Brookhaven National Laboratory, NY
- 2000 - 2003** Deputy Head, Nuclear Theory group, Brookhaven National Laboratory, NY
- 1999 - 2000** Associate Scientist, Brookhaven National Laboratory, NY
- 1997 - 2000** Fellow, RIKEN-BNL Research Center, Brookhaven National Laboratory, NY
- 1997** Scientific Associate at Fakultät für Physik, Universität Bielefeld, Germany
- 1994 - 1997** Scientific Associate at the Theory Division of CERN, Geneva, Switzerland
- 1992 - 1993** Invited Professor ("professore a contratto") at Pavia University, Italy
- 1990 - 1993** Research Associate at Istituto Nazionale di Fisica Nucleare (INFN), Pavia, Italy
- 1990 - 1993** Staff Member at Nuclear Physics Institute and Physics Department of Moscow State University

Visiting Positions

- 2018** Guest Scientist, Program organizer, NORDITA and University of Stockholm, Sweden
- 2018, 2019** Le Studium professor, Loire valley Institute for Advanced Studies, France
- 2017** Visiting Professor, Universita degli Studi di Firenze, Italy
- 2015, 2019** Severo Ochoa Distinguished Visiting Professor, Universidad Autonoma de Madrid, Spain
- 2014** Senior Humboldt Fellow, Goethe University, Frankfurt am Main, Germany
- 2008** Guest scientist, Program organizer, Institute for Nuclear Theory, Seattle, WA
- 2002** Guest scientist, Program organizer, Kavli Institute for Theoretical Physics, Santa Barbara, CA
- 2001** CNRS Fellow, Universite de Pierre et Marie Curie (Paris VI), France

Publications

- **Publication and citation statistics**

Papers in refereed journals - over 250

Citations (Google Scholar) - over 25,750

H-index (Google Scholar) - 71

Citations (Inspire) - about 21,600

H-index (Inspire) - 69

Citations (Web of Science) - over 15,000

H-index (Web of Science) - 61

- **Patents**

US patent 20100109712 (2013)

Graphene-magnet multilayers

as a base for nano-scale spintronic devices (“GMM technology”)

with A. Tselik and I. Zaliznyak

US patent 10657456 (2020)

Chiral Qubit: system and method

with Q. Li

Honors and Awards

- **Distinguished Professor, State University of New York, 2018**
- **Member, State University of New York Academy, 2018**
- **Le Studium Professor, Le Studium Foundation, France, 2018 - present**
- **Chancellor’s Award for Excellence in Scholarship, State University of New York, 2017**
- **Severo Ochoa Distinguished Visiting Professor, Universidad Autonoma de Madrid, 2014, 2018**
- **Humboldt prize, Alexander von Humboldt Foundation, 2013**
- **Distinguished Founding Faculty Fellow, Skoltech/MIT, 2012**
- **Fellow of the American Association for the Advancement of Science, 2010**
- **Fellow of the American Physical Society, 2006**
- **Sackler Fellow, 2005**
- **Emilio Segre Distinguished Scholar, 2005**
- **CNRS Fellow, 2001**
- **RIKEN-BNL Fellow, 1997**
- **Winner, USSR Competition in Physics for students, 1986**

Other professional activities and Service

2020 - Present Member, Scientific Advisory Board, Simons Foundation

2019 - Present Member, State-wide SUNY Advisory committee on Distinguished professorships

2017 - 2019 Member, State-wide SUNY Faculty Senate, Governance committee

2017 - Present Member, Steering committee, Center for Frontiers of Nuclear Science, Stony Brook University

- 2015 - 2018** Member, Program committee, APS Division of Nuclear Physics
- 2015 - 2019** Member, Board of Directors, SchoolNova (a non-profit STEM education program)
- 1999 - Present** Managing Editor, International Journal of Modern Physics E (Nuclear Physics)
- 2001 - 2012** Editor, Editor-in-Chief, Annals of Physics
- 2009 - 2012** Member of the Nuclear Science Advisory Committee (NSAC)
- 2011 - 2013** Member of the Nominating Committee of the Division of Nuclear Physics of APS
- 2011 - 2017** Member of the Graduate exam committee, Department of Physics and Astronomy, Stony Brook University
- 2005 - 2008** Elected member of the Brookhaven Council
- 2006 - 2008** Member of the NSAC (Nuclear Science Advisory Committee) Working group on the Long range plan
- 2005 - 2010** Member of the RIKEN-BNL Advisory board
- 2000 - 2010** Member, Physics Department Planning committee at BNL

Teaching Experience

- 2010 - Present** Graduate courses "Elementary Particle Physics", "Nuclear Physics I", "Nuclear Physics II"
Stony Brook University
- 2017 - Present** Co-lecturer, Graduate course "Quantum Information"
Stony Brook University
- 2010 - Present** Graduate seminar in Nuclear, Particle physics and Astronomy
Stony Brook University
- 1996 - Present** Delivered over 20 lecture courses at summer schools for graduate students and postdocs
National Nuclear Physics School, CERN School on High Energy Physics, CERN Academic Training, etc
- 2007 - 2009** Graduate course "Quantum physics at femto- and nano-scales"
Yale University

- 2012 - 2015** Lectures and seminars on physics
Summer camp “Sigma” for high school students, New York State
- 2000** Graduate course “High energy nuclear physics”
Stony Brook University
- 1992 - 1993** Introductory course “Particle and Nuclear physics”
Pavia University, Italy
- 1990 - 1992** Undergraduate course “Group theory in Quantum mechanics”
Physics Department, Moscow State University

Students and postdocs supervised

Students supervised at Stony Brook University since 2010, with their current affiliations:

- Frasher Loshaj, PhD 2014; postdoc at Karlsruhe University, Germany
- Gustavo Monteiro, PhD 2016; postdoc at University of Campinas (jointly with A. Abanov)
- Yuta Kikuchi, PhD 2018; postdoc at RIKEN-BNL Research Center (jointly with T. Kunihiro, Kyoto University)
- Mark Mace, PhD 2018; postdoc at Jyvaskula University, Finland (jointly with R. Venugopalan)
- Jae Sung Lee, MSc 2020; PhD student at Stony Brook
- Lillian de Bruin, MSc 2020; PhD student at Heidelberg University, Germany
- Evan Philip, PhD 2020; postdoc in Quantum Information group at BNL
- Sahal Kaushik, current student
- Pedro Mercado, current student (jointly with Q. Li)
- Matteo Buzzegoli, current student (jointly with F. Becattini, Florence University)
- David Frenklakh, current student

Postdocs supervised at Stony Brook University since 2010, with their current affiliations:

- Ho-Ung Yee, 2010-2013; Associate professor, University of Illinois, Chicago
- Gokce Basar, 2012-2014; Assistant professor, North Carolina State University
- Yannis Burnier, 2011-2013; Assistant professor, Swiss Federal Institute of Technology (EPFL), Lausanne, Switzerland
- Rene Meyer, 2014-2017; Assistant professor, Wuerzburg University, Germany
- Ioannis Iatrakis, 2014-2016; postdoc, Utrecht University, Netherlands
- Yuji Hirono, 2013-2016; faculty member, APCTP (Asian Pacific Center for Theoretical Physics, S. Korea)
- Yi Yin, 2014-2016; postdoc, MIT
- Kiminad Mamo, 2017 - 2020; postdoc, Argonne National Laboratory
- Adrien Florio, 20120 - present

Students and postdocs supervised before 2010, with their current affiliations:

- Marzia Nardi, PhD 1998; currently permanent researcher at INFN, Torino, Italy
- Andrea Bianconi, PhD 1994; currently professor at University of Brescia, Italy
- Hirotsugu Fujii; currently professor at University of Tokyo
- Steven Vance; currently in finance industry
- Yuri Kovchegov; currently professor at Ohio State University
- Kirill Tuchin; currently professor at Iowa State University
- Tetsufumi Hirano; currently professor at University of Tokyo
- Yasushi Nara; currently professor at Akita International University
- Harmen Warringa; currently CTO at RDZL company, Utrecht, Netherlands
- Kenji Fujii; currently professor at University of Tokyo

Current grants

- "Research in Theoretical Nuclear Physics at Stony Brook University"; Project Director
Sponsor: US Department of Energy, Nuclear Physics program;
Total award amount: \$3,700,000.00.
 - "Co-design Center for Quantum Advantage"; Stony Brook PI
Sponsor: US Department of Energy, Quantum Information program;
Total award amount: \$116,000,000.00; at Stony Brook: \$2,000,000.
 - "Transport and optical properties of chiral quantum materials"; co-PI.
Sponsor: US Department of Energy, Basic Energy Sciences program;
Total award amount: \$405,000.00.
 - "Beam Energy Scan Theory: topical collaboration in nuclear theory"; Stony Brook PI.
Sponsor: US Department of Energy, Nuclear Physics program;
Total award amount: \$2,000,000.00; at Stony Brook: \$160,000.
 - "Research in theoretical physics at RIKEN-BNL Center"; PI.
Sponsor: RIKEN, Japan
Annual award amount: \$800,000.00.
 - "Confinement and Nuclear Structure through Correlations and Quantum Entanglement at the EIC";
co-PI.
Sponsor: Brookhaven National Laboratory, LDRD
Total award amount: \$579,000.00.
 - "Quantum Leap Challenge Institute: Distributed quantum systems enhanced by materials design",
Conceptualization grant; co-PI.
Sponsor: NSF
Total award amount: \$120,000.00.
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