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# Frank A. Wilczek

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FRANK WILCZEK

CURRICULUM VITAE

Herman Feshbach Professor of Physics  
Center for Theoretical Physics, MIT, Cambridge MA, USA  
wilczek@mit.edu

Chief Scientist, Tsung-Dao Lee Institute  
Chief Scientist, Wilczek Quantum Center  
Shanghai Jiao Tong University  
Shanghai, China  
Chief Scientist at Wilczek Quantum Center  
University of Science and Technology of China (USTC)  
wilczek@sjtu.edu.cn

Distinguished Professor  
Arizona State University  
Tempe AZ, USA  
fwilczek@asu.edu

Professor of Physics  
Stockholm University  
Stockholm, Sweden  
frank.wilczek@fysik.su.se

## Personal Information:

Born in New York, May 15, 1951 (U.S. Citizen)  
Married to Elizabeth J. Devine, June 3, 1973  
Two children (Amity, born 9/3/74 and Mira, born 1/18/82)

## Education:

B.S University of Chicago (Mathematics), 1970  
M.A. Princeton University (Mathematics), 1972  
Ph.D. Princeton University (Physics), 1974

## Experience:

Instructor, Princeton University, January 1974-June 1974

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Assistant Professor, Princeton University, September 1974-June 1976  
Visiting Fellow, The Institute for Advanced Study, September 1976-June 1977  
Assistant Professor, Princeton University, September 1977-June 1978  
Associate Professor, Princeton University, September 1978-June 1980  
Professor, Princeton University, July 1980-June 1981  
Professor, University of California, Santa Barbara, November 1980-December 1988  
Member, Institute for Theoretical Physics, University of California, Santa Barbara, November 1980-December 1988  
Visiting Professor, Harvard University, September 1987-June 1988  
Professor, School of Natural Sciences, The Institute for Advanced Study, Princeton, NJ, January 1989-August 2000  
Professor, Massachusetts Institute of Technology, September 2000-  
Visiting Professor, NORDITA, Fall 2007 -  
Visiting Professor, Oxford University, Spring 2008  
Distinguished Visiting Professor, Arizona State University, Winter 2010-2016  
Chief Scientist, Wilczek Quantum Center, Shanghai Jiao Tong University, Shanghai, China, October 2014  
Professor of Physics, Stockholm University, May 2016  
Distinguished Professor, Arizona State University, July 2016 –  
Founding Director of the Tsung-Dao Lee Institute at the Shanghai Jiao Tong University in Shanghai, China, Sept. 2017.  
Chief Scientist of the Tsung-Dao Lee Institute at the Shanghai Jiao Tong University in Shanghai, China, 2022.  
Chief Scientist at Wilczek Quantum Center at University of Science and Technology of China (USTC).

## Awards, Honorary Societies:

1967	Westinghouse Science Talent Search, 4th Prize
1967-1970	University Scholar, University of Chicago
1969	Phi Beta Kappa
1973	Ettore Majorana “Best Student” Prize
1975-1977	AP Sloan Foundation Fellow
July 1982-1987	John & Catherine MacArthur Foundation Fellow
April 1986	American Physical Society J.J. Sakurai Prize
May 1990-1991	Member, U. S. National Academy of Sciences
	Second prize from Gravity Research Foundation “Quantum Hair and Quantum Gravity” (with Lawrence Krauss, Sidney Coleman, John Preskill)

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April 1993- Aug. 1994	Member, American Academy of Arts and Sciences Awarded the 1994 Dirac Medal and Prize by the International Centre for Theoretical Physics (Trieste, Italy)
May 2000-	Foreign Member, Royal Netherlands Academy of Arts and Sciences
Dec. 2000-	Fellow, American Association for Advancement of Science
May 2001	Honorary Doctorate, Universite de Montreal
April 2002	Michelson-Morley Prize, Case Western Reserve University
Oct. 2002	Lorentz Medal, Royal Netherlands Academy of Arts and Science
April 2003	Lilienfeld Prize, American Physical Society
July 2003	High Energy Physics Prize, European Physical Society
July 2003	Faculty of Mathematics and Physics Commemorative Medal, Charles University, Prague
Dec. 2004	Nobel Prize in Physics, Royal Swedish Academy of Sciences, Stockholm, Sweden
Jan. 2005	King Faisal International Prize for Science, King Faisal Foundation
April 2005	Member, American Philosophical Society, Philadelphia
June 2005	Golden Plate Award, Academy of Achievement, New York
April 2007	Honorary Doctorate, Clark University
Aug. 2007	Elected Fellow, Polish Academy of Arts and Sciences
May 2008	Honorary Doctorate, Maria Curie-Sklodowska University
Aug. 2008	Honorary Doctorate, The Ohio State University
Nov. 2008	Julius Wess Award (Inaugural), Karlsruhe Institute of Technology
Dec. 2008	Casimir Funk Award
April 2012	The Kosciuszko Medal, Kosciuszko Foundation
Sept. 2012	Honorary Doctorate, Jagiellonian University, Krakow
Jan. 2013	Honorary Doctorate, Uppsala University
Oct. 2013	Honorary Doctorate, Gustavus Adolphus College

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Dec. 2013	Oskar Klein Medal, Stockholm University
June 2014	First Prize Award from Gravity Research Foundation “From B-modes to quantum gravity and unification of forces,” (with Lawrence Krauss)
Oct. 2015	Doctor Honoris Causa, Rzeszow University, Podkarpacie region, Poland
Sept. 2016	Richard E. Prange Prize, University of Maryland
Nov. 2017	Society for design and process science transformative achievement award, Birmingham, AL
Dec. 2019	Award from the Knut and Alice Wallenberg Foundation founding WINQ (Wallenberg Initiative in Networks and Quantum Information)
May 2020	First Prize Award from Gravity Research Foundation – “The Noise of Gravitons” (with Maulik Parikh, George Zahariade)
Nov. 2021	Elected Foreign Member, Chinese Academy of Sciences
March 2022	First Recipient of Steven Weinberg Medal, U. Texas Austin
May 2022	Templeton Prize
Oct. 2022	Co - Principal Investigator for Knut and Alice Wallenberg Foundation Project: Tuning Into Dark Matter (5 years, 27.5 MSEK)
Jan 2016-Dec.2025	VR Grant from Swedish Research Council
Sept 2017-Aug.2022	ERC Axion Advanced Grant
2025	First Prize Award from Gravity Research Foundation - “Probing Quantum Structure in Gravitational Radiation” (with Manikandan)

## Other Recognition:

Dec. 1984	Selected one of America’s 100 brightest scientists under 40
Dec. 1984	Esquire Register; featured in article p. 62, December 1984 issue
June 1998	Elected to University of Chicago Board of Trustees
April 2003	“The World’s Numerical Recipe” selected to be included in <i>Best American Science Writing 2003</i> ed. O. Sacks (Ecco/HarperCollins)
April 2005	“Whence the Force of $F=ma$ ?” selected to be included in <i>Best American Science Writing 2005</i> ed. A Lightman (Ecco/HarperCollins)
Nov. 2014	Wilczek Quantum Center established at ZJUT, Hangzhou, China
Jan. 2016 -	Monthly column “Wilczek’s Universe” at Wall Street Journal

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??	Awarded VR Grant from Swedish Research Council
Sept.2016	West Lake Friendship Award – City of Hangzhou
March 2017	Awarded ERC Advanced Grant “Axion”
April 2017	Lee Kong Chian Distinguished Professor under the IAS’s Lee Kong Chian Endowment Fund.
Jan 2022-	Adjunct Researcher - CECs, Centro de Estudios Científicos (Center for Scientific Studies)
Nov. 2017	Featured Interview: The Hunt for the Real Time Crystal - DN.SE ( <a href="https://www.dn.se/nyheter/vetenskap/jakten-pa-den-verkliga-tidskristallen/">https://www.dn.se/nyheter/vetenskap/jakten-pa-den-verkliga-tidskristallen/</a> )
Feb. 2018	Frank Wilczek prize endowed, Jagiellonian University, Krakow, Poland
March 2018	Founding of SciHub at Arizona State University, Tempe, AZ (with Nathan Newman)
Dec.2019	Grant from the Knut and Alice Wallenberg Foundation to found WINQ (Wallenberg Initiative on Networks and Quantum Information)
Sept. 2021	Shanghai Silver Magnolia Award 2021- City of Shanghai

## Honorific Appointments:

Sept. 1984-1990	Chancellor Robert Huttenback Professor of Physics, UCSB
June 1986-Sept.1988	Regent’s Fellow, Smithsonian Astrophysical Observatory
Sept. 1994-June 1997	Leland Haworth Distinguished Scientist, Brookhaven National Laboratory
Oct. 1997-Aug. 2000	J . Robert Oppenheimer Professor, Institute for Advanced Study
April-June 1998	Lorentz Professor, Leiden University
Sept. 2000-	Herman Feshbach Professor, Massachusetts Institute of Technology
Jan. 2002 - June 2002	Adjunct Professor, Centros Estudios Científicos Visiting Schrödinger- Professor 2002, City of Vienna, Austria
Jan. 2008	Rudof Peierls Visiting Professor of Physics, Oxford University
Jan. 2008	Associate Member and Fellow, All Soul’s College
Jan. 2010-	Distinguished Visiting Professor, Arizona State University
Oct. 2014	Honorary Professor, Zhejiang University of

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	Technology, Hangzhou, China
Oct. 2014	Chief Scientist, Wilczek Quantum Center, SJTU, China
Dec. 2014	Honorary Member, Polish Physical Society
Jan. 2015-	Chief Organizer, Quantum Connections Workshops and Summer Schools
Sept. 2017-	Founding Director, T.D. Lee Institute, China
Dec. 2017-	Member of The Royal Swedish Academy of Sciences (Kungl.Vetenskaps Akad.)
Feb. 2018-	Partner Investigator, Discovery Project, Australian Research Council
Nov 2020-	Honorary Trustee of the Kosciuszko Foundation
Aug 2022	Honorary member- John Templeton Foundation
Aug 2022	Honorary member of Templeton World Charity Foundation
Aug 2022	Honorary member – Board of Advisors for Templeton Religion Trust
Nov 2016	Chief scientist, WQC
Nov 2021	Chief scientist, TDLI
Nov 2023	Honorary Professor, USTC - 11/23 - 11/26
Nov 2023	Chief Chair Professor of Zhiyuan College (honors college) SJTU
Dec 2023	Project Scientist ALPHA Institutional Board

## Honorific Lectures:

April 1982	Morris Loeb Lecturer in Physics, Harvard University
April 1986	Flint Lecturer, Yale University
April 1988	Hamilton Lecturer, Princeton University
Jan. 1992	Scott Hawkins Lecturer, Southern Methodist University
Oct. 1992	Bethe Lecturer, Cornell University
April 1993	Anna McPherson Lecturer, McGill University
Dec. 1994	Rowland Lecturer, University of Kentucky
April 1995	Michelson Lecturer, Case Western Reserve University
Jan. 1999	Dashen Lecturer, (inaugural) University of California, San Diego
April 2001	H. Primakoff Lecturer, American Physical Society
April 2001	Potts Lecturer, John Hopkins

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	University
April 2001	A.O. Williams Lecturer, Brown University
April 2001	Pappalardo Lecturer, Massachusetts Institute of Technology
Oct. 2003	Feenberg Memorial Lecturer, University of Washington, St. Louis
Jan. 2004	Heilborn Lecturer, Northwestern University
Feb. 2004	IFT Lecturer, University of Florida
April 2004	Marker Lecturer, Pennsylvania State University
July 2004	J. Robert Oppenheimer Memorial Lecturer, Santa Fe
July 2004	Director's Colloquium, Los Alamos National Laboratory
Oct. 2004	Enrico Fermi Lecturer, Argonne National Laboratory
Nov. 2004	Green College Lecturer, University of British Columbia
Feb. 2005	Dean Edmonds Lecture, Boston University
March 2005	MIT/Ford Lecture, Massachusetts Institute of Technology
March 2005	Intel Science Talent Search Distinguished Alumni Speaker, Washington, DC
March 2005	Raytheon Public Lecture, University of Arizona, Tucson
April 2005	Smith Lecture, The Ohio State University, Columbus
April 2005	Hamilton Lecture, Princeton University
May 2005	Simon Cherwell Lecture, Oxford University, UK
June 2005	Lecture at Lindau, Germany meeting of Nobel Laureates
Sept. 2005	Heinrich Hertz Lecture, Hamburg, Germany
Sept. 2005	Miller-Breit Lecture, Yale University
Sept. 2005	Katzenstein Lecture, University of Connecticut
Sept. 2005	Wright Lecture, Boston Museum of Science
Oct. 2005	Einstein Memorial Lecture, Princeton Chamber of Commerce
Nov. 2005	Kaczmarczik Lecture, Drexel University
Nov. 2005	Dean's Lectureship, University of Kentucky
Jan. 2006	Barkla Lecture, (inaugural) University of

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	Liverpool
Jan. 2006	Zachariasen Lecture, University of Chicago
Jan. 2006	Konopinski Memorial Lecture, Indiana University
Feb. 2006	Scott Lectures, Cambridge University, Cavendish Lab, UK
March 2006	Fritz London Lecture, Duke University
April 2006	Crawford Lecture, University Pittsburgh
April 2006	Simons Lecture, SUNY, Stony Brook
April 2006	BSA Distinguished Lecture, Brookhaven National Lab
Oct. 2006	Fine Lecture, (inaugural) University of Minnesota
Oct. 2006	Venkateswarlu Memorial Lecture, Alabama A&M
Nov. 2006	Nobel Laureate Public Lecture Series, Old Dominion University
March 2007	Houston Lecture, Rice University
March 2007	Nobel Laureate Lecture, McMurry University
April 2007	President's Lecture, Clark University
Oct. 2007	Hamilton Lecture, Royal Irish Academy, Dublin
Dec. 2007	Sir Neil Waters Lecture, Massey University, New Zealand
March 2008	Grandes Conférences, Ecole Normale Supérieure
May 2008	Dirac Lecture, Cambridge University
Oct. 2008	de Sitter Lectures, Groningen (Inaugural)
Oct. 2008	Distinguished Lecture Series, University of Wisconsin La Crosse
Oct. 2008	Ta-You Wu Lecture, University of Michigan
Feb. 2009	Siemens Foundation Lecture/Seminar, (Munich)
Oct. 2009	Einstein Lectures, (Inaugural) Bern
Jan. 2010	Origins Lecture, Arizona State University
March 2010	Oppenheimer Lecture, Berkeley
Nov. 2010	Louis Clark Vanuxem Lecture Series, Princeton
Feb. 2011	Darwin College Lecture Series, Cambridge University, UK
April 2011	George Gamow Memorial Lecture, University of Colorado,



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	Boulder
April 2011	Lightner-Sams Lecture, Southern Methodist University, Dallas
Nov. 2011	Boltzmann Lecture, University Wien, Vienna
Sept. 2012	Royal Academy Nobel Laureate Lecture, Copenhagen
Oct. 2012	Hubert James Lecture, Purdue University
April 2013	Frontiers of Physics Lecture, University of California, Davis
May 2013	Arnold Sommerfeld Lectures Series, ASC, Munich, GR
July 2013	Majorana Lecture, Erice, Italy
Oct. 2013	Nobel Conference Lecture, Gustavus Adolphus College
Dec. 2013	Oskar Klein Memorial Lecture, Stockholm, Sweden
March 2014	Della Pietra Lectures, Simons Center, Stony Brook
March 2014	Presidential Lecture Series, University of Tulsa
April 2014	Littleton-Franklin Lecture, Auburn University
Oct. 2014	Huang Changfeng Distinguished Lecture, Tsinghua University, Beijing, China
Oct. 2014	Centennial Lecture, Beijing University China
Feb. 2015	Frederick Reines Memorial Lecture (Inaugural) University of California, Irvine
March 2015	Andrew Chamberlain Memorial Lecture, Cambridge University, UK
May 2015	Address at Brown University “Imagining 250 Years in Physics”
Nov. 2015	Address at Royal Society Symposium “150 Years of the Maxwell Equations”
Sept. 2016	Richard E. Prange Lecture, University of Maryland “Some intersections of Art and Science”
Sept. 2016	MIT Joint Quantum Institute seminar, “Anyons”
Sept. 2016	Hooft Lecture
Jan. 2017	Public lecture, Arizona State University, “Materiality of Vacuum”
Feb. 2017	Bhaumik lecture, UCLA “Augmenting Reality: Axions, Anyons, and Entangled Histories”
Nov. 2017	Nobel Public Lecture, Science Centre, Singapore, “Dark matter”
Feb. 2018	2018 Lawrence Symposium “14 Questions about time”
May. 2018	Public Lecture, University of Helsinki, “The strange,

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May. 2020	unfinished story of time reversal" Shanghai Jiao Tong University 150th Master Distinguished Lecture, "Quanta of the third kind: Anyons"
June.2021	Herzberg Memorial Public Lecture (Brandeis) "Quanta of the third kind: Anyons"
March 2022	Weinberg Memorial Public Lecture (Inaugural) "Quasiparticles and Quasiworlds"
June 2022	Keynote Address, Royal Swedish Academy of Sciences, "Quantum Theory Meets Quantum Technology"
June 2022	Quantum connections summer school "Quantum Adventures"
June 2022	Royal Academy of Denmark Nobel Laureate Lecture, Copenhagen, "QCD: The Glory and the Power"
Sept 2022	William C. Ferguson and Compton Centennial Lecture "Photons and Vision" Washington University, St. Louis
Oct 2022	Gerard 'tHooft colloquium "Time Reversal, Dark Matter and Axions", Utrecht
Spring 2024	Presidential Lecture, Purdue "Our Strange Universe: What Is It? What Does It Mean?"
Nov 2023	Pudong pearl forum "The Real Fifth Force: Quantum Statistics" (short version)
Nov 2023	Forum of great minds USTC (Haifei). The Real Fifth Force: Quantum Statistics" (long version)
Nov 2023	T. D. Lee Colloquium "Quasiparticles and Quasiworlds"
April 2024	Eugene P. Wigner Lecture at the Oak Ridge National Laboratory "Symmetries of Time"
April 2024	Lee Historical Lecture in Physics, Harvard University "My Life With QCD: A Fifty-Year Love Affair That's Still Going Strong"
April 2024	Inaugural Schwinger Lecture at Columbia "Symmetries of Time"

## Editorial and Advisory Boards:

1978-1982	High Energy Advisory Committee, Brookhaven National Lab.
Nov. 1981-1997	Editorial Board, Zeitschrift für Physik C
July 1985-Sept. 1989	Editorial Committee, Annual Reviews of Nuclear & Particle Science
1986-1988	D.O.E. High Energy Physics Advisory Panel (HEPAP)

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Jan. 1987-2003	Oversight Committee, Theoretical Physics Institute (University of Minnesota)
Jan. 1988-May 1991	Monthly “Article Alert” Column for <i>The Scientist</i>
Sept. 1989-1992	ITP Advisory Board (Santa Barbara)
March 1993-1998	Sloan Foundation Research Fellowship Committee
March 1999-2000	International Review Committee for Presidential Science Chairs, Santiago, Chile
Sept. 2001-2012	Editor in Chief, <i>Annals of Physics</i>
Jan. 2002-2008	Science Policy Committee, (CERN)
Jan. 2002-	Editorial Advisor, <i>Daedalus</i>
Jan. 2003-June 2007	Scientific Advisory Committee, Perimeter ITP, (Waterloo, Canada)
Sept. 2006-	Board of Governors, New York Academy of Sciences
Oct. 2008-Oct 2017	Board of Trustees, Society for Science and the Public
July 2019- 1967	Member of the Society for Science Honorary Board Alumnus – Society for Science Talent search
Aug 2022	Honorary member- John Templeton Foundation
Aug 2022	Honorary member of Templeton World Charity Foundation
Aug 2022	Honorary member – Board of Advisors for Templeton Religion Trust
Sept. 2012-	Scientific Advisory Board, Niels Bohr International Academy, Copenhagen
Nov 2016	Chief scientist, WQC
Nov 2021	Chief scientist, TDLI
Nov 2023	Honorary Professor, USTC - 11/23 - 11/26
Nov 2023	Chief Chair Professor of Zhiyuan College (honors college) SJTU

## Patents:

U.S. Patent Number: 10,089,900

(Serial No.: 15/314,810)

Title: Systems and methods for expanding human perception

Grant Date: October 2, 2018

Inventors: Frank Wilczek et al.

Owner: WOLFCUB VISION, INC.

L&A Reference: W2050-7000US

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U.S. Patent Number: 10,049,535  
(Serial No.: 15/487,725)  
Title: UV Gap-Spotter  
Grant Date: August 14, 2018  
Inventors: Frank Wilczek et al.  
Owner: WOLFCUB VISION, INC.  
L&A Reference: W2050-700110

U.S. Patent Number: 5023833  
Title: Feed forward neural network for unary associative memory  
Grant Date: June 11, 1991  
Inventors: Eric B. Baum, John E. Moody, Frank A. Wilczek  
Assignee: California Institute of Technology

## Pending Patents:

Serial no. 62/912,465  
File date: October 8, 2019  
Title: Color Mapping of Displays for Improved Color Recognition  
Inventors: Nathan Newman, Chandana Srinivasa, Frank Wilczek

Serial no. 62/912,471  
File date: October 8, 2019  
Title: Color Matching Anomalscope with Improved Precision in the Determination of Color Acuity in Subjects  
Inventors: Walter Herbst, Deana McDonagh, Nathan Newman, Saraansh Saxena, Frank Wilczek

Serial no. 62/912,466  
File date: October 8, 2019  
Title: Portable Spectrometer System  
Inventors: Walter Herbst, Max Linnander, Deana McDonagh, Nathan Newman, Frank Wilczek

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