Jianhan Chen, Ph.D.

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Education

2002	Ph.D. in Chemical and Material Physics, University of California at Irvine
2000	M.S. in Chemistry, University of California at Irvine
1998	B.Sc. in Chemistry, University of Science & Technology of China

Academic Appointments

2017 –	Professor, Departments of Chemistry, University of Massachusetts, Amherst
2017 – 22	Professor, Department of Biochemistry & Molecular Biology, UMass Amherst
2007 – 16	Assistant, Associate and Full Professor, Department of Biochemistry and Molecular Biophysics, Kansas State University
2002 – 07	Research Associate, Department of Molecular Biology, The Scripps Research Institute

Research Interests

Computational biochemistry and biophysics: implicit solvent; coarse-grained models; enhanced sampling; physics-informed machine learning; protein folding; intrinsically disordered proteins; protein self-assembly and aggregation; biomolecular condensates; synthetic ion channels; self-assembly peptide vesicles; nanopore tweezer; BK and TRPV channels; TMEM16 channels and lipid scramblases; protein-ligand interactions

NMR spectroscopy: structure determination and refinement; NMR relaxation analysis and protein dynamics; structural interpretation of disordered protein states; high-resolution spectral analysis;

Teaching Experience

At UMass: CHEM 475: Physical Chemistry; CHEM 585: Advanced Physical Chemistry; CHEM 627: Biomolecular Structures; CHEM 891G: Graduate Core I;

At KSU: BIOCH 110: Biochemistry and Society; BIOCH 265: Introduction to Organic & Biochemistry; BIOCH 590: Physical Studies of Biomacromolecules; BIOCH 755: Biochemistry I; BIOCH 765: Biochemistry II; BIOCH 775: Molecular Biophysics; BIOCH 806: Graduate Student Seminars; BIOCH 915: Biomolecular Modeling

Mentoring Experience

Fellows/Visitors/Postdocs (13): Jian Huang (2025-), Shanlong Li (2022-), Zhiguang Jia (2014-18; Senior Research Fellow, 19-24; Research Fellow, Mass General Hospital), Xiaorong Liu (2019-20; Assistant Professor, University of New Mexico), Azar Farjamnia (2018; Industry), Mara Chiricotto (2017-18; industry, UK), Kuohao Lee (2014-18; Staff Scientist at NIH), Charles English (2017-18, w/ Gierasch; Data Scientist in industry), Weihong Zhang (2015-16, Entrepreneur), Debabani Ganguly (2007-13; Associate Professor, Bengal Engineering and Science University, India), Jian Gao (2009-12; Professor, Qinzhou University, China), Timothy H. Click (2010-11; Visiting Faculty, Tabor College), Ahlam Al-Rawi (2007-09, Instructor at U of Central Florida)

Graduate Students (17): Clarice Stumpf (Chemistry, 2026-), Jessica F. Ng (MCB, 2024-, PhD), Harsha Chilukuri S (ChemE, 2024-, PhD), David DoCoeur (2022-, PhD), Kairong Dong (2022-, PhD), Shrishti Barethiya (2022-, PhD), Jian Huang (2020-25, PhD; postdoc at UMass), Samatha Schultz (2022-23; MCB MS, Sanofi), Yumeng Zhang (2019-23, PhD; postdoc at MIT), Erik Nordquist (2018-23, PhD; postdoc at U Maryland), Xiping Gong (2018-23, PhD; Postdoc at U Georgia), Qianlan Jia (2019-21; CIS MS; athenahealth); Mahdieh Yazdani (2017-20, PhD; Senior Scientist at Merck), Xiaorong Liu (2014-19, PhD; Postdoc at UMich), Alex Beugelsdijk (2012-14, Master; medical doctor), Weihong Zhang (2009-14, PhD; Entrepreneur), Chester D. McDowell (2009-12, Master; Veterinary Doctor), Praveen K. Lakkimsetti (2010 Summer Intern; Master in CIS; Epic)

Undergraduate Students (22): Lilian Zhang (2025-, BMB), Hanna Georgiev (2024-, Chem); Devanshee Sanghvi (2024-25, BMB/Chem); Aron Korsunsky (2022-24, ChemE), Anik Dey (2022 summer, Amherst College), Jack Madden (2022-, CS/Pure Math), Ryan Pham (2021-22; Chemistry), Samatha Schultz (2021-22; BMB), Thomas Scudder (2021; BMB), Callie Jillson (2019-20, Chemistry), Minh Ho (2018-19, BMB), Justin Camphell (2017-18; Chemistry/Physics), Katrina Nguyen (2017-18; Chemistry), Samantha Gameros (Summer 2015, Biochemistry), Arianna Vessal (Summer 2014; Virginia Tech), Michael Mohan (2013-2015, Biochemistry), Steven Stimac (Spring 2014, Biochemistry), Tyler Dubek (Spring 2010, Biochemistry), Melissa Veldman (2009; Biochemistry), Miguel Aldrete (2008-09, *Bridges*/DSP scholar), Asma Al-Rawi (2007-08, physics)

Service Activities

Editorial Boards: Journal of Biological Chemistry (EBM, 2026-), PLoS Comp Biol (Academic Editor, 2025-), PNAS (Guest Editor, 2023); Biophysical Journal (EBM; 2020-); Frontiers in Molecular Neurosciences (Associate Editor, 2019-), Journal of Molecular Biology (SI Guest Editor, 2017-18), Scientific Reports (EBM, 2011-)

Membership on Panels/Study Sections: NIH ZRG1 MBBC-J (2025); NSF CLP (2024); NIH MFSA (2024); NIH NIDA Board of Scientific Counselor (2024); NSF GRFP Chemistry 2 (2024); NSF CLP CAREER (2023); NIH MBBC-W(02) Study Section (2023); NIH ZRG1 MBBC-J Study Section (MIRA) (2022); NSF CTMC CAREER BIO/MD/ML Panel (2022); NSF CTMC Biomolecular Simulations (2015, 2017, 2022), NSF CNS MRI Panel (2022); National Academy of Sciences, Committee on Proposal Evaluation for Allocation of Supercomputing Time for the Study of Molecular Dynamics (2015, 17, 22, 25), NIH NIDA Board of Scientific Counselors (Ad Hoc member, 2020), NIH BCMB P01 Special Review Panel (2015), NIH Biophysics of Neural Systems (BPNS) Study Section (2013; Ad hoc), NSF Research Infrastructure for Biological Research & Resources (2009)

Service on Regional/National Committees: Co-Chair, FASEB Conference on Biological Phase Transitions in Cellular Signaling and Disease (2026), Co-Chair, Symposium on Data Science, Machine Learning for Biomolecules, the 21st IUPAB Congress 2024, Kyoto, Japan (2024); Organizing Committee, Molecular Biophysics Meeting in Northeast (2019; 2024/Chair); Organizing Committee, HPC Day (Northeastern, 2019); Council Member, Intrinsically Disordered Proteins Subgroup, Biophysical Society (2014-17); Secretary/Treasurer, Intrinsically Disordered Proteins Subgroup, Biophysical Society (2011-12)

Honors and Awards

2026	Chancellor's Medal and Distinguished Faculty Lecture, UMass Amherst
2022	CNS Outstanding Award in Research (Senior), UMass - Amherst
2011	ACS HP Outstanding Junior Faculty Award
2010	K-INBRE Faculty Scholar Award
2010	NSF CAREER Award
2009	K-State Wakonse Fellow
2008, 10, 14	Innovative Research Awards, Johnson Center for Basic Cancer Research
2007	Faculty Development Award, KSU NIH-COBRE on Epithelial Function

As a Postdoctoral Fellow and Student:

2002 – 05	Burroughs Wellcome Fund Postdoctoral Fellowship/La Jolla Interfaces in Sciences
2002	E. K. Lee Award, University of California at Irvine
2002	Regents' Dissertation Fellowship, University of California at Irvine
2001	Physical Sciences Faculty Endowed Fellowship, University of California at Irvine
1998	Lian Xiang Scholarship (联想奖学金), University of Science & Technology of China
1993	Xu A'Qiong Scholarship (许阿琼奖学金), Putian, P. R. China

Research Support

09/01/25 – 08/31/29, NIH R01GM159415 (PI: Min Chen), "Developing a Nanopore Tweezer Toolkit for Analyzing Kinase Structural Dynamics and Screening Allosteric Inhibitors", $1,587,416 (total cost) (Role: Co-I with ~$40K budget)

06/01/25 – 05/31/28, NSF CHE 2516941 (PI: Chen), "Accurate Coarse-Grained Modeling of Dynamic RNA Structure and Phase Separation", $536,802 (total cost)

04/01/24 – 03/31/2029, NIH R01 NS133820 (PI: Siemer), "Intrinsically disordered domains of α-synuclein: effect of fibril formation and fibril polymorphs", $3,466,707 (total cost) (Role: Co-I, UMass portion: $240K)

03/01/22 – 2/28/27, NIH R35 GM144045 (PI: Chen), "Disordered Proteins and Dynamic Interactions in Biology and Diseases", $1,899,000 (total cost) (Instrument Supplement, $125,000, 2024-25)

06/01/21 – 5/31/26, NIH R01 AI156187 (PI: Min Chen), "Probing Functional States and Inhibition of Flaviviral Proteases Using Nanopore Tweezers", $2,190,088 (total cost) (Role: Co-I with ~25% budget)

Previous supports: ~$10.2M since 2007 (both as PI and co-PI) ($4.9M to the Chen lab)

Peer-Reviewed Publications: ~120 journal articles published or in press; *H*-index = 43 (Google Scholar)