

## *Curriculum Vitae*

### **Gary J. Pielak**

Department of Chemistry  
University of North Carolina at Chapel Hill  
Chapel Hill, NC 27599-3290  
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### ***Research Interests:***

Protein chemistry and biophysics, especially in living cells.

### ***Employment:***

#### **July 2015-**

Kenan Distinguished Professor of Chemistry

#### **August 2013-**

Vice Chair of Facilities in Chemistry

#### **July 2013-July 2015**

Glen H. Elder, Jr. Distinguished Term Professor of Research & Undergraduate Education

#### **January 2013-December 2014**

Program Director, Molecular Biophysics Cluster, Division of Molecular and Cellular Sciences, Directorate for Biological Sciences, the National Science Foundation, Arlington, NC

#### **January 2000-**

Professor of Chemistry, UNC  
Professor of Biochemistry & Biophysics, UNC  
Member, UNC Lineberger Comprehensive Cancer Center

#### **July 2000 - June 2005 & July 2007 - June 2008**

Vice Chair of Undergraduate Studies in Chemistry

#### **January 2000-June 2006**

Faculty Director, UNC Macromolecular Interactions Facility

#### **July 1998 - July 1999**

Sabbatical Visitor: Professor Christopher M. Dobson, F.R.S.  
Oxford Centre for Molecular Sciences  
University of Oxford, England

#### **January 1995-December 1999**

Associate Professor of Chemistry, UNC

#### **January 1989-June 2016**

Co-director UNC Biomolecular NMR Facility

#### **January 1989 - December 1994**

Assistant Professor, UNC  
Member UNC Integrative Program for Biological & Genome Sciences (previously Program in Molecular Biology and Biotechnology)

#### **June 1986 - January 1989**

N.I.H. Postdoctoral Fellow: R.J.P. Williams, F.R.S., M.B.E, deceased  
Inorganic Chemistry Laboratory, University of Oxford, England

#### **March 1983 - June 1986**

N.I.H., Postdoctoral Fellow: Professor M. Smith, F.R.S., deceased  
Department of Biochemistry University of British Columbia  
Vancouver, B.C. Canada

**Education:**

**January 1983**

Ph.D. in Biochemistry  
Laboratory of Professor J. Ivan Legg, deceased  
Department of Chemistry  
Washington State University, Pullman, Washington  
Dissertation: Characterization of Arsanilazo & Sulfanilazo Proteins

**June 1977**

B.A. in Chemistry, *Magna cum Laude*  
Bradley University, Peoria, Illinois

**Teaching/Mentoring:**

**Past Postdocs and Their Current Employer**

Dr. Guifang Wang (Pennsylvania State University)  
Dr. Conggang Li (Chinese Academy of Sciences, Wuhan)  
Dr. Austin Smith (KBI)  
Dr. Thomas Boothby (U. Wyoming)

**Current Postdocs**

None

**Current Graduate Students**

Mr. Oskar Hutcheson  
Ms. Julia Brom  
Ms. I-Te Chu  
Ms. Claire Stewart  
Ms. Jordyn Markle

**Past Graduate Students and Their Current Employer**

Dr. Jonathan (Jack) Eicher  
Dr. Joseph 'Joey' Thole (NIH)  
Ms. Sasiprapa Jeab Sasiprapa (visiting from Thailand)  
Dr. Candice Crilly  
Dr. Shannon Speer (Pfizer)  
Dr. Samantha (Sam) Stadmiller (Lindy Biosciences)  
Dr. Samantha (Pixie) Piszkiwicz (UC Berkeley)  
Dr. Alex Guseman (Pitt)  
Dr. Annelise Gorensek (Colorado College)  
Dr. Rachel Cohen (Pfizer)  
Dr. Austin Smith (Jaguar Gene Therapy)  
Dr. Michael Senske (visitor from Germany, FC Bayern München)  
Ms. Torii Sutherland (US Coast Guard)  
Dr. William Monteith (Alector)  
Dr. Mohona Sarkar (KBI)  
Dr. Jillian Tyrrell (Biocare Medical)  
Dr. Yaqiang Wang (Arrakis Therapeutics)  
Ms. Laura Benton (Holy Orders)  
Dr. Imola-Gabriela Zigoneanu (Biomedical Engineering, UNC)  
Dr. Alex Schlesinger (AgBiome)  
Dr. Andrew Miklos (NIH)  
Mr. Christopher Barnes, M.A. (Stanford)

### **Past Graduate Students and Their Current Employer, cont'd**

Dr. Rebecca Ruf  
Mr. Matthew Hrabak, M.S. (Naval Surface Warfare Center)  
Dr. Kristin Slade (Hobart and William Smith Colleges)  
Dr. Lisa Charlton (ERT)  
Dr. Brian McNulty (Athenix)  
Dr. Julie Bryant (Merck)  
Dr. Alina Olteanu (Private practice, Houston)  
Dr. Dana Albon (Moses Cone Mem. Hosp.)  
Dr. Fang Yi (Centocor)  
Dr. Chetan Patel (Lilly)  
Dr. Artemiza Morar (GlaxoSmithKline)  
Mr. Xuming Wang, M.A. (Intel)  
Dr. Gresham Weatherly (AbbVie)  
Dr. Paula Davis-Searles (Diosynth)  
Dr. Jennifer Waldner  
Ms. Devon Allen, M.S. (Diosynth)  
Dr. David Cohen (Advanced Liquid Logic)  
Dr. Aleister Saunders (Drexel)  
Dr. Jennifer Marmorino  
Dr. Donald Doyle (Georgia Tech.)  
Dr. James Beasley, (Venenum)  
Dr. Lixin Chen (New Engl. Biolabs)  
Dr. Zoey Fredericks (Amgen)  
Dr. Douglas S. Auld (Novartis)  
Dr. Stephen F. Betz (Crinetics)  
Dr. Sharon Hilgen-Willis (Integral Molecular)  
Ms. Xuhong Wang, M.A. (Synermore Biologics)

### **Past STEM Teacher-researcher Fellows**

Ms. Candice Jackson, Thomasville High School (2011)  
Mr. Oryan Lowry, South Robeson High School (2012)

### **Current Undergraduate Students**

Ms. Ruta Petrikis  
Mr. Thomas Redvanly  
Mr. Owen Young  
Mr. Hudson Malsch  
Mr. Joshua Bourque

### **Past Undergraduates and Where They Went Next**

Ms. Ashlee Propst (UNC)  
Ms. Penelope Mewborn (UNC Nutrition)  
Ms. Shikun 'Rinco' Wang (Yale)  
Ms. Sophia Hazlett (University College London)  
Mr. Francis Lauzier (Wayne State)  
Mr. Octavio Origel (Northwestern)  
Mr. Owen Warmuth (Wisconsin)  
Ms. Shreya Nakkala (UNC)  
Mr. Jhoan Aguilar (Postbac UNC)  
Mr. Gustavo Panduro (UNC)  
Mr. Gerardo Perez (MIT)  
Mr. Cody Weyhrich (Virginia Tech)  
Mr. Aakash Mehta (NIEHS)  
Mr. Anthony Arrington (UNC Pembroke)

**Past Undergraduates and Where They Went Next, cont'd**

Mr. Kenny Nguyen (GSK)  
Mr. Luis Acosta (Actuarial School)  
Mr. Thomas Lanier (UNC)  
Mr. Larry Zhou (NIH)  
Mr. Eduardo Guizan (Pharmacy School, UNC)  
Mr. Emilio Guzman (Med. School, UNC)  
Mr. Joe Lu (Actuary School)  
Ms. Beth Willard (Disney World)  
Mr. Vishavpreet 'Ricky' Singh (Med. School, UNC)  
Mr. Alexander Krois (Grad. School, Scripps)  
Ms. Yuri Yang (Technician, U. Toronto)  
Ms. Amanda Rosett (SURE, back to Susquehanna U.)  
Ms. Kristen Black (Colegio Bilingüe New Horizons, Dominican Republic)  
Mr. Emmanuel Chan (Technician, UNC)  
Ms. Heidi Scronce (Technician, Duke)  
Ms. Niama Sharaf (Grad. School, Pitt)  
Mr. Christopher Barnes (Grad. School, Chemistry, UNC)  
Mr. Evan Lutz (Med. School, ECU)  
Ms. Sandy An (MD/PhD program, Wake Forest, U.)  
Mr. Hao Wu  
Ms. Hayley Fischer (Med. School, ECU)  
Ms. Michelle Mian (Dental School, Harvard)  
Ms. Essraa Bayoumi  
Mr. Michael Minder (Med. School, Duke)  
Mr. Chris Kragel (Med. School, ECU)  
Mr. Devin Barrett (Grad. School, Chemistry, UNC)  
Mr. Joseph Batchelor (University of California, Berkeley)  
Mr. Matthew Dedmon (Grad. School, University of Cambridge, UK)  
Mr. Scott Kennedy (Grad. School, UNC)  
Ms. Maria Lind (Grad. School, UGA)  
Mr. Ikey Kakouras (Duke)  
Ms. Kimberly Clay (Med. School, UNC)  
Ms. Amret Thompson (Med. School, Wake Forest)  
Mr. Daniel Hostetter (Grad. School, Stanford)  
Ms. Melisa Lehti (Grad. School, Botany, Wisconsin)  
Mr. Phil Hardwidge (Grad. School, Immunology, Mayo Clinic)  
Mr. Sherif Ghobrial (Grad. School, Env. Sci. & Eng., UNC)  
Mr. Chetan Patel (Grad. School, Chemistry, UNC)  
Ms. Sonja Trojak (Med. School, UNC)  
Mr. Bryan Fine (Med. School, U South Florida)  
Ms. Xecerla Littles (Med. School, Tulane)  
Ms. Shelly Finger (Vet. School, Texas A&M)  
Mr. Luiz Alcazar-Roman (Grad. School, Chemistry)  
Mr. Harvey Chui (Med. School, UNC)  
Ms. Kara Bortone (Grad. School, Chemistry, U. Texas)  
Mr. Sudip Parikh (Grad. School, Biochem., Scripps)  
Mr. Richard Bruick (Grad. School, Biochem., Scripps)  
Ms. Andrea Lee (Grad. School, Biochemistry, Scripps)  
Mr. Mark Dransfield (Med. School, UNC)  
Ms. Jennifer Fencl (Grad. School, Chemistry, UNC)  
Ms. Tori Williams (Grad. School, Yale)

Ms. Malika Rauf (back to North Chapel Hill High)  
Ms. Melanie Wiley (U. Maryland, then MD/PhD program, U. South Carolina)  
Ms. Ashlee Propst (NC State)

**Past High School Students and Where They Went Next, cont'd**

Ms. Hanna Qu (back to Research Triangle High)

**Courses:**

**UNC**

Advances in Macromolecular Structure  
Macromolecular Structure and Metabolism  
Macromolecular Interactions  
Practical Protein NMR  
First Semester General Chemistry  
First Year Seminar: You don't have to be a rocket scientist.  
General Biochemistry  
Protein Chemistry  
Enzyme Mechanisms  
Molecular Biology Laboratory  
Practical Oligonucleotide-Directed Mutagenesis

**Oxford**

Biophysics Tutor. New College, 1988

**Cold Spring Harbor**

Advanced Cloning Course, 1984, 1987  
Advanced Techniques in Molecular Biology

**University of British Columbia**

Site-specific Mutagenesis Directed by Oligodeoxyribonucleotides, 1985

**Service:**

**Current Committee Assignments in Chemistry**

Personnel Committee  
Teaching Assistant Professor Search Committee  
Staff Awards/Recognition  
Approximately 10 Ph.D. Committees  
Approximately 5 Undergraduate Honors Committees

**Past Committee Assignments in Biochemistry & Biophysics**

Biophysics Search Committees; Campbell, Lee, and Kuhlman  
Biomolecular NMR core director search, 2018  
Assistant Professor search, UNC Biochemistry & Biophysics, 2019

**Past Committee Assignments in Chemistry**

Personnel Committee  
Teaching Assistant Professor Search Committee 2019  
Executive Committee, 2015-2020  
CHEM 550L Efficacy Committee, 2019-2019  
X-Ray Core Director Search, 2018  
NMR Core Search, 2018, 2019  
Mass Spec Core Search, 2018  
Vice Chair of Chemical Research Instrumentation Teaching & Core Laboratories,  
2014-2018  
Lecturer Search, 2016-2017  
Mass Spectroscopy Core Director Search, 2014  
Post Tenure Review Committee, 2011-2012, 2020-  
Graduate Studies Committee, 2010-2011  
Graduate Recruiting Committee, 2010-2011

### **Past Committee Assignments in Chemistry, continued**

Strategic Planning Committee, 2009 - 2010  
2010 Departmental Program Review Committee  
NMR Committee  
Undergraduate Studies Committee, 1992-2008, 2012-2013  
Inorganic Search Committee, 2009  
Vice Chair of Undergraduate Studies, 2000-2005, 2007- 2008  
Chair Selection Committee, 2007  
Ad hoc member Parking Committee  
Search Committees; Forbes, Thorp, Erie, Morken, and Weeks  
Genomics Search Committee, 2001  
Several Promotion/Tenure Committees

### **Current/Past University Service**

University Teaching Awards Committee, 2018, 2019, 2020, 2023  
University Distinguished Professorship Committee, 2017  
Distinguished Dissertation Faculty Review, 2014, 2015  
COI Monitoring Committee (Redinbo), 2014  
Cross-listed Courses Task Force, 2012  
Independent Studies Task Force, 2011  
Chair, Curriculum Review Committee, Miscellaneous Subcommittee, 2010  
University Research Day Judge, 2010  
Chair, Admissions Committee, Biological & Biomedical Sciences Program, 2008  
Administrative Boards of the General College, 2003-2013  
Mock interviews for the Gates-Cambridge and Churchill Fellowships through the Office of Distinguished Scholarships, 2007  
Reviewer, Smallwood Undergraduate Summer Research Grants, 2006  
Summer Undergraduate Research Fellowship Committee, 2007-2010, 2015, ...2018, 2023  
Mock interviews for the Gates-Cambridge and Churchill Fellowships through the Office of Distinguished Scholarships, 2007  
Undergraduate Orientation (CTOPS) Professor's Perspective sessions, 2006, 2007, 2008, 2015, 2016, 2017  
Financial Exigency and Program Change Committee, 2006-2008  
Reviewer, Postdoctoral Awards for Research Excellence, Office of Postdoctoral Services, 2005  
Division of Natural Sciences Curriculum Committee  
General Education Implementation Committee for the New Undergraduate Curriculum, 2002 - 2003  
UNC Curriculum Review, Committee N  
Faculty Council  
Rhodes Scholarship Mock Interview Committee  
Churchill Scholarship Selection Committee  
Admissions Committee, Program in Molecular & Cellular Biophysics  
Advisory Committee, Curriculum in Applied Sciences  
Biomolecular NMR Facility Committee  
Macromolecular Interactions Facility Committee  
Summer Undergraduate Research Program Selection Committee  
Graduate Student Committees:  
Environmental Sciences  
Engineering, Biochemistry & Biophysics,  
Immunology/Microbiology  
Cell & Developmental Biology  
Presenter, Project Uplift  
Presenter, NC Renaissance Program

**Regional/National/International Service**

- 2019 Judge Annual Biomedical Research Conference for Minority Students (ABRCMS)
- 2016 Outside Honors Examiner, Hobart and William Smith Colleges
- 2016 Chair, Biophysics *in vivo* subgroup of the Biophysical Society
- 2015 Chair-elect, Biophysics *in vivo* subgroup of the Biophysical Society

**Regional/National/International Service, continued**

- 2011-2015, Member at Large, Biophysics *in vivo* subgroup of the Biophysical Society
- 2013-2014 Program Director, Molecular Biophysics Cluster, Division of Molecular and Cellular Sciences, Directorate for Biological Sciences, the National Science Foundation
- Faculty Search Committee Biochemistry, Washington State University, 2003
- One or more tenure/promotion letters per year

**Ph.D. Committees**

- Duke, Georgia Tech., University of Barcelona, Yale

**Manuscript Referee**

- ACS Chemical Biology
- Angewandte Chemie
- Archives of Biochemistry and Biophysics
- Biochemistry
- Biochimica et Biophysica Acta
- Accounts of Chemical Research
- Biochimie
- Biomacromolecules
- Biophysical Chemistry
- Biophysical Journal
- Biopolymers
- BioTechniques
- Biotechnology
- BMC Biology
- ChemBioChem
- Chemical Neuroscience
- Chemical Physics Letters
- Coordination Chemistry Reviews
- Crystal Growth & Design
- FEBS Letters
- Folding and Design
- Frontiers of Molecular Biosciences
- Inorganica Chimica Acta*
- Inorganic Biochemistry
- International Journal of Biological Macromolecules
- Journal of the American Chemical Society
- Journal of Biological Chemistry
- Journal of Biological Inorganic Chemistry
- Journal of Biomolecular NMR
- Journal of Chromatography
- Journal of Inorganic Biochemistry
- Journal of Chromatography
- Journal of Magnetic Resonance



### **Manuscript Referee, continued**

Journal of Molecular Biology  
Journal of Physical Chemistry  
Journal of Physical Chemistry Letters  
Journal of Proteome Research  
Macromolecules  
Molecular Pharmaceutics  
Nature  
Nature Methods  
Nature Structural Biology  
Nucleic Acids Research  
Physical Chemistry Chemical Physics  
Protein Science  
Proteins: Structure, Function, Genetics/Bioinformatics  
Proceedings of the National Academy of Sciences, U.S.A.  
Scientific Reports  
Softmatter

### **Editorial Duties**

1998-1999	Paper Alerts contributor, <i>Current Opinions in Structural Biology</i>
2011-	Editorial Advisor, <i>BMC Biophysics</i>
2017-	Editorial Advisory Board, <i>Protein Science</i>
2021-	Editorial Board, <i>Magnetic Resonance Letters</i>

### **Proposal Review**

#### **Panels**

Graduate Women in Science Scholarships  
Internal Review for Lockheed Martin 2010 University Research Initiative  
University Cancer Research Fund, 2009  
NIH New Innovators Award, 2008, 2009  
NSF Molecular Biochemistry Review Panel. Many times.  
NIH Special Emphasis Panel to review proposals in response to RFQ NIH  
ES2007006, entitled "Scientific Research Analysis," 2007  
NIH NIH-NIDDK, Kidney, Urologic and Hematologic Diseases D  
Sub Committee, 2007  
Gordon Research Foundation, 2005  
NIH Physical Biochemistry Study Section, Ad hoc, 1996  
NIH Metallobiochemistry Study Section, Ad hoc, 2001  
NIH Special Emphasis Panel: Technology Development for Biomedical  
Applications, 2001  
NIH Macromolecular Structure & Function A Study Section, Ad hoc, 2011

### **Ad Hoc, Mail/Email Reviews**

Stanford Synchrotron Radiation Lightsource  
Czech Science Foundation  
Danish Council for Independent Research  
Experimental Program to Stimulate Competitive Research,  
French National Research Agency (ANR)  
Israel Science Foundation  
National Science Centre Poland  
Netherlands Organisation for Scientific Research  
NSERC Canada  
Petroleum Research Fund  
Research Corporation

***Ad Hoc, Mail/Email Reviews, continued***

Switzerland: ETH Zurich Research Commission  
UK: BBSRC, MRC, Wellcome  
U.S.: AAAS Research Competitiveness Program, Cottrell NSF, Nebraska  
Wellcome trust/DBT India Alliance

***Meetings Organized/Convened***

8<sup>th</sup> International Symposium on the Higher Order Structure of Protein  
Therapeutics (HOS), San Mateo, 2019  
Program Committee, Protein Society Symposium, Barcelona, 2015  
Program Committee Chair, 26<sup>th</sup> Annual Protein Society Symposium, 2012

***Meetings Organized/Convened***

Biophysics Society Subgroup, Biopolymers in vivo, 2012  
Chemistry Spectrum: recruiting high school students interested in science to  
UNC, 2008  
Co-chair Proteins Gordon Research Conference, 2007  
Vice Co-chair Proteins Gordon Research Conference, 2005  
Triangle Biophysics Symposium, 1998  
Glaxo-Wellcome UNC Symposium, 1989, 1998  
Protein Structure Minisymposium, 1993  
Southeastern Magnetic Resonance Conference, 1993  
Second Carolina Conference on Protein Engineering, 1989

**Research:**

**Current Grants**

- Protein stabilizers from tardigrades  
Source: National Institutes of Health 1 R01 GM127291-01A1  
Total award amount: \$1,172,000  
Total period covered: 12/01/2018 - 11/30/2021
- MRI: Purchase of a 600 MHz Spectrometer for high-sensitivity NMR  
Source: NSF CHE 1828183  
Total award amount: \$444750  
Total period covered: 08/01/18 - 07/31/2020
- Impact of cosolutes on protein folding  
Source: United States - Israel Binational Science Foundation  
Total award amount: \$216,000  
Total period covered: 08/01/18-07/31/22
- Protein stabilizers from tardigrades  
Integrative Program for Biological and Genome Sciences  
Total award amount: \$30,000  
Total period covered: 09/01/2018-08/31/2019
- Tardigrade proteins as Novel Pharmaceutical Excipients  
Source: North Carolina Biotechnology Center  
Total award amount: \$75,000  
Total period covered: 07/01/18-06/30/19
- MRI: Acquisition of a Mass Spectrometer (Co-PI)  
Source: NSF 1726291  
Total award amount: \$1,157,551  
Total period covered: 08/15/2017 - 07/31/2020
- Macromolecular Crowding and Protein Stability In Vitro and in Cells  
Source: NSF MCB 1410854  
Total award amount: \$ 990,000  
Total period covered: 09/01/14-08/31/19
- Encapsulation and Protein Stability  
Source: NSF CHE 1607359  
Total award amount: \$ 353927  
Total period covered: 07/01/2016-06/30/2018

**Recent Grants**

- Intergovernmental Mobility Award  
Source: NSF 1410854  
Total award amount: \$171,167  
Total period covered: 12/31/12 – 06/31/13
- Macromolecular Crowding and Protein Stability In Vitro and in Cells  
Source: NSF MCB 1051819  
Total award amount: \$ 792,597.00  
Total period covered: 02/01/11-01/31/14
- E.T.S. Walton Visitor Award: Protein Chemistry in Living Cells

Source Science Foundation of Ireland  
Total award amount: \$57,484  
Total period covered: 01/01/12-12/30/12

In-Cell NMR of Disease-Related Proteins  
NIH Pioneer Award 5DP1OD783  
Total award amount: \$3,750,000  
Total period covered: 10/01/2006 – 09/31/2011

Protein Biophysics in Cells,  
Source: NSF MCB 0516547  
Total award amount: \$592,931  
Total period covered: 03/01/2006 – 02/28/2009

Electron Transfer Proteins  
Source: NIH R01GM020488 (Francis Millett, PI)  
Total award amount: \$87,300 (to my laboratory)  
Total period covered: 08/01/03 – 07/31/08  
This was a subcontract to Professor Francis Millett's NIH grant. Prof. Millett is at the University of Arkansas. Our laboratories have collaborated on protein electron transfer for over 10 years. The funds support our work to produce cytochrome c variant proteins.

Perturbation Calorimetry & Protein Surface Area  
Source: PRF 42748-AC4  
Total award amount: \$80,000  
Total period covered: 05/01/05-08/31/07

Protein Biophysics in Cells  
Source: NSF MCB 0212939  
Total award amount: \$446,735  
Total period covered: 09/01/02 – 08/31/05

Patterned Library Analysis  
Source: NIH R01GM058665 (Marshall Edgell, PI)  
Total award amount: \$ 873,000  
Total period covered: 07/01/00 – 06/30/04  
co-PI with Marshall Edgell on this grant.

Free Radicals, Proteins Aggregates & Parkinson's Disease  
Source: NIH R21 ES 10774  
Total award amount: \$290,000  
Total period covered: 10/01/00 – 9/30/02

Cytochrome c & Apoptosis  
Source: NSF MCB0109366  
Total award amount: \$145,000  
Total period covered: 9/01/01-8/31/02

Expansion of the UNC Macromolecular Interactions Facility  
Source: North Carolina Biotechnology Center  
Total award amount: \$88,895  
Total period covered: 7/01/2001-6/30/2003

Protein Hydrogen Bonding and NMR Redox Shifts of Cytochrome c  
Source: PRF

Total award amount: \$60,000  
Total period covered: 6/01/00-5/31/02

Replacement of a Failed Centrifuge Rotor  
Source: University Research Council  
Total award amount: \$4,000  
Total period covered: 6/01/00-5/31/02

Bringing State-of-the-art NMR to UNC  
Source: University Research Council  
Total award amount: \$2,500  
Total period covered: 1/01/00-12/31/01

### **Honors:**

DuPont Young Faculty Award  
Morrow Young Faculty Award  
Folding & Binding Paper Alert selector for *Current Opinions in Structural Biology*, 1997-1998  
Underwood Fund Award (BBSRC, U.K.)  
Invited Speaker, Proteins Gordon Conference, 2001  
Invited Speaker, Biopolymers Gordon Conference, 2002, 2010  
Invited Speaker, RASMB Gordon Conference, 2002  
Invited Speaker FASEB Meeting: Protein Folding in the Cell, 2002  
Invited Speaker, Toronto Chemical Biophysics Symposium, 2003, 2011  
Invited Speaker 13th Conversation in Biomol. Stereodynamics, 2003  
Invited Speaker, 18th Annual Gibbs Conference on Biothermodynamics, 2004  
Invited Speaker, Eighth Johns Hopkins Folding Meeting, 2005  
Invited Speaker, Colorado Protein Stability Conference, 2005  
Invited Speaker, Cellular Osmoregulation: Sensors, Transducers & Regulators GRC, 2005  
Invited Speaker Trends in Microcalorimetry 2005  
Session Chair, Proteins GRC, 2005  
Vice co-chair Proteins Gordon Research Conference, 2005  
NIH Pioneer Award, 2006  
Co-chair Proteins Gordon Research Conference, 2007  
Invited Speaker, Southeast Magnetic Resonance Conference, 2007  
Invited Speaker, Ions & Osmolytes Symposium, Salt Lake City ACS Meeting, 2008  
Plenary Speaker, Beijing Conference & Exhibition on Instrumental Analysis, 2011  
Program Committee Chair, 26<sup>th</sup> Annual Protein Society Symposium, 2012  
Science Foundation of Ireland, E.T.S. Walton Visitor Award  
Invited Speaker, Molecular Crowding: Chemistry & Physics Meet Biology (Switzerland), 2012  
Invited Speaker, 12th Chianti/INSTRUCT Workshop on BioNMR (Italy) 2012  
Invited Speaker, EUROMAR (Dublin, Ireland), 2012  
Glen H. Elder, Jr. Distinguished Term Professor of Research and Undergraduate Education, 2013-  
Invited Speaker, Annual Protein Society Symposium, 2013  
Invited Speaker, American Chemical Society National Meeting, New Orleans, April 7-11, 2013  
Invited Speaker Graduate School Solvation Science Summer School, Bochum Germany, June 10-13, 2014  
Invited Speaker Annual Meeting of the Biophysical Society of Japan. September 25-27, 2014

***Honors, continued***

TC Wang Lecturer, Wuhan Institute of Physics and Mathematics, Chinese Academy of Sciences, March 18, 2015

Kenan Distinguished Professorship 2015-2016 Chair, Biophysics *In Vivo* subgroup of the Biophysical Society

Invited Speaker, EMBO Conference on The Biochemistry and Chemistry of Biocatalysis: From Understanding to Design, Oulu, Finland, June 2016

Carl Brändén Award from the Protein Society, 2016

Invited Speaker, Intrinsically Disordered Proteins: Structure, Function & Interactions, Philadelphia, August 23

Invited Speaker, Nobel Symposium on Protein Folding: From Mechanisms to Impact on Cells, Stockholm, Sweden, June 11-14, 2017

University Mentor Award for Lifetime Achievement from UNC-CH. 2017

Invited Speaker, First International Symposium on Chemistry for Multimolecular Crowding Biosystems, Kobe, Japan, December 12-13, 2017

Invited Speaker, Physical and Quantitative Understanding of Cells at Molecular Level, Chemical Society of Japan, Kyoto, December 14-16, 2017

Invited Speaker, Mini-workshop on Protein Biophysics: Interplay Between Experiments and Theories, Kyoto University, December 18, 2017

Invited Speaker, EMBO Workshop, *In situ* methods in Cell Biology and Cellular Biophysics, Berlin, July 26-28, 2018

Invited Speaker, Gibbs Conference on Biothermodynamics, Carbondale, IL, October 6-9, 2018

Invited Speaker, 11<sup>th</sup> Biennial Carolina Biophysics Symposium, October 25, 2018

Invited Speaker, Intrinsically Disordered Protein Subgroup Symposium, Biophysical Society Meeting, Baltimore, March 2, 2019

Bradley University 2018 College of Liberal Arts and Sciences Distinguished Alumnus Award

UNC-CH 2019 Excellence in Basic Science Mentoring Award

Invited Speaker, 20th Conversation in Biomolecular Structure and Dynamics, Albany, June 13 & 14, 2019 (2 talks)

Invited Speaker, Workshop on Macromolecular Crowding, Telluride, CO, July 16-20, 2019

Invited Speaker, Workshop on Intrinsically-Disordered Proteins, Telluride, CO, July 16-20, 2019

Invited Speaker, ACS Fall National Meeting, San Diego, August 25-29

Invited Speaker, The Dr. and Mrs. Satti Paddi and Parvarti Reddy Public Lecture, Understanding Protein Behaviour in Living Cells, Memorial University, St. John's, Newfoundland, Canada, October 17

Invited Speaker, Protein Folding Dynamics Gordon Research Conference, Galveston, TX, January 5-9, 2020

Plenary Lecture, EUROMAR, Portorož, Slovenia, remote, July 2021

Invited Speaker, German Biophysical Society (DGfB) Meeting Konstanz, Germany, September 2022

Invited speaker, Specificity Determinants of Biomolecular Interactions, commemorating the late professor Aharon Katzir, Rehovot Israel, November 29, 2022

UNC 2023 Johnston Teaching Excellence Award

McElvian Lecture, Department of Chemistry, University of Wisconsin, Madison, February 21, 2023

**Research Seminars:**

**May 1, 2022-April 30, 2023**

ACS Fall National Meeting, August 21  
German Biophysical Society (DGfB) Meeting Konstanz, Germany,  
September 20-23  
Specificity Determinants of Biomolecular Interactions, commemorating the late  
professor Aharon Katzir, Rehovot Israel, November 29  
McElvian Lecture, Department of Chemistry, University of Wisconsin, Madison,  
February 21

**May 1, 2021-April 30, 2022**

Plenary lecture, EUROMAR, Portorož, Slovenia (remote), July 4-8  
Tulane, February 14  
Institute of Pharmacology and Structural Biology, Toulouse (remote), March 15

**May 1, 2020-April 30, 2021**

ACS Fall National Meeting (virtual), August 17  
BASF (virtual), September 23

**May 1, 2019-April 30, 2020**

20<sup>th</sup> Conversation in Biomolecular Structure and Dynamics, Albany,  
June 13 & 14 (2 talks)  
Workshop on Macromolecular Crowding, Telluride, CO, July 16-20  
Workshop on Intrinsically-Disordered Proteins, Telluride, CO, July 16-20  
ACS Fall National Meeting, San Diego, August 25-29  
The Dr. and Mrs. Satti Paddi and Parvarti Reddy Public Lecture, Understanding  
Protein Behaviour in Living Cells, Memorial University, St. John's,  
Newfoundland, Canada, October 17  
Department of Chemistry, Memorial University, St. John's, Newfoundland,  
Canada, October 18  
Protein Folding Dynamics Gordon Conference, Galveston, TX, January 5-9  
University of Colorado, Denver, CO, March 6.

**May 1, 2018-April 30, 2019**

Suzhou Institute of Biomedical Engineering, Suzhou, China, May 10  
Soochow University, Suzhou, China, May 11  
Wuhan Institute of Physics and Mathematics, Chinese Academy of Sciences,  
Wuhan, China, May 17  
EMBO Workshop, *In situ* methods in Cell Biology and Cellular Biophysics,  
Berlin, July 26-28  
2018 Gibbs Conference on Biothermodynamics, Carbondale, IL, October 6-9  
Appalachian State University, Boone, NC, October 19  
11<sup>th</sup> Biennial Carolina Biophysics Symposium, October 25  
Bradley University, November 19  
Weizmann Institute, Rehovot, Israel, January 29  
Fritz Haber Lecture, Hebrew University, Jerusalem, January 31  
2019 Intrinsically Disordered Protein Subgroup Symposium, Biophysical Society  
Meeting, Baltimore, March 2, 2019  
Wuhan Institute of Physics and Mathematics, Chinese Academy of Sciences,  
Wuhan, China, March 27

**May 1, 2017-April 30, 2018**

China-Japan Joint Symposium on Functional Supramolecular Systems, Wuhan  
China, May 16  
Wuhan Institute of Physics and Mathematics, Chinese Academy of Sciences,  
Wuhan, China, May 19

Nobel Symposium on Protein Folding: From Mechanisms to Impact on Cells,  
Stockholm, Sweden, June 11-14  
New England Biolabs, December 7  
First International Symposium on Chemistry for Multimolecular Crowding  
Biosystems, Kobe, Japan, December 12-13  
Physical and Quantitative Understanding of Cells at Molecular Level, Chemical  
Society of Japan, Kyoto, December 14-16  
Mini-workshop on Protein Biophysics: Interplay Between  
Experiments and Theories, Kyoto University, December 18  
Penn State University, February 22  
UNC-CH, Department of Biochemistry and Biophysics, April 24

**May 1, 2016-April 30, 2017**

Appalachian State University, April 21  
University of Wisconsin, March 3  
Loyola University New Orleans, February 13  
ACS Fall National Meeting, Philadelphia, August 21-25  
Annual Protein Society Symposium, Baltimore, July 16-19  
Ruhr-University Bochum, Germany, June 23  
Leibniz-Institut für Molekulare Pharmakologie (FMP), Berlin, June 20  
EMBO Conference on The Biochemistry and Chemistry of Biocatalysis: From  
Understanding to Design, Oulu, Finland, June 12-15

**May 1, 2015-April 30, 2016**

Higher Order Structure Conferences, Long Beach, CA, April 11-13  
Hobart and William Smith Colleges, April 28

**May 1, 2014-April 30, 2015**

Workshop on Macromolecular Crowding, Telluride, CO, June 23-27  
Washington Area NMR Group, December 4  
California Separation Science Society, Higher Order Structure (CASSS-HOS)  
April 11-13

**May 1, 2014-April 30, 2015**

Graduate School Solvation Science Summer School, Bochum Germany,  
June 10-13  
Novartis, Emeryville, July 22  
Annual Meeting of the Biophysical Society of Japan, Sapporo, September 26  
Tokyo Metropolitan University, September 30  
University of North Carolina-Chapel Hill, October 8  
University of Virginia, November 7  
School of Life Sciences, U. of Science & Technology of China, Hefei, March 13  
TC Wang Lecturer, Wuhan Institute of Physics and Mathematics, Chinese  
Academy of Sciences, March 18

**May 1, 2013-April 30, 2014**

Workshop on Macromolecular Crowding, Telluride, CO, June 25-29  
Annual Protein Society Symposium, Boston, July 20-24  
National Institute of Environmental Health Science, RTP, NC, September 5  
University of Maryland, November 18  
University of Puerto Rico, Rio Piedras Campus, November 22  
Simon Fraser University, Vancouver, BC Canada, December 6  
University of British Columbia, Vancouver, BC Canada, December 9  
Florida State University, Tallahassee, January 21  
Johns Hopkins, March 10  
UNC Greensboro, March 28



**May 1, 2012-April 30, 2013**

University of Durham (UK), June 1  
National University of Ireland, Galway, May 28  
Molecular Crowding: Chemistry and Physics meet Biology (Switzerland), June 12  
12th Chianti/INSTRUCT Workshop on BioNMR (Italy) June 18  
EUROMAR (Dublin, Ireland), July 1  
University of Tennessee, October 17  
ACS Southeastern Regional Meeting (SERMACS). Raleigh, NC, November 16  
Drexel University, February 18  
University of Pennsylvania, Hershey, March 18  
American Chemical Society National Meeting, New Orleans, April 7-11

**May 1, 2011-April 30, 2012**

Yale, March 19  
King's College London, January 20  
National Institute for Medical Research (UK), January 19  
University of Oxford (UK), January 17  
National Institutes of Health Pioneer Symposium, September 21  
Beijing Conference & Exhibition on Instrumental Analysis, Oct 13  
National Science Foundation, June 8  
University of Minnesota Duluth, May 26

**May 1, 2010-April 30, 2011**

University of Toronto, June 3  
Biopolymers Gordon Conference, June 6-11  
IRB Barcelona, July 2  
Swedish Royal Academy of Sciences, August 26  
James Madison, September 3  
Biological Diffusion & Brownian Dynamics Brainstorm 2 (Heidelberg, Germany)  
October 11  
University of Indiana, October 25  
National Science Foundation, November 10  
University of Wisconsin, Madison, November 23  
Toronto Chemical Biophysics Symposium, April 9

**May 1, 2009 – April 30, 2010**

University of Richmond, September 4  
UCLA, March 11  
Davidson, January 29

**May 1, 2008 – April 30, 2009**

Biophysical Society Workshop on Protein Folding, Stability, and Aggregation,  
Boston, March 3  
Symposium on the Influence of Ions & Osmolytes on Aqueous Macromolecules,  
ACS Meeting, Salt Lake City, March 23  
Workshop on Macromolecular Crowding, Telluride, CO, July 6-10  
UNC Wilmington, September 28  
Appalachian State University, November 21

**May 1, 2007– April 30, 2008**

UNC Chemistry, September 12  
NIH Pioneer Symposium, September 19  
University of Kansas, October 5  
Southeastern Magnetic Resonance Conference, U. Alabama November 10  
Honors Chemistry, UNC, November 19

**May 1, 2006– April 30, 2007**

UNC, Chemistry, September 6  
Duke, Biochemistry, October 2  
University of Pennsylvania, Biophysics, October 18  
Drexel University, Bioscience and Biotechnology, October 19  
Virginia Tech, Chemistry, January 26  
Biophysical Society, Intrinsically Disordered Proteins Subgroup, Baltimore,  
March 3  
Seeing is Believing: The Future of Molecular and Biomolecular Imaging Meeting,  
Duke, March 11  
UNC, Biochemistry & Biophysics, April 17

**May 1, 2005 – April 30, 2006**

Colorado Protein Stability Conference, Breckenridge, CO  
Trends in Microcalorimetry, Boston, MA

Cellular Osmoregulation: Sensors,  
Transducers & Regulators GRC, Newport, RI  
UNC Chemistry, Chapel Hill, NC  
UNC Biochemistry & Biophysics, Chapel Hill, NC  
Cold Spring Harbor Meeting on the Intracellular Molecular Environment,  
Cold Spring Harbor, NY  
University of Pittsburgh, Pittsburgh, PA  
University of Denver, Denver, CO  
University of Colorado, Health Sciences, Denver, CO  
U. Massachusetts, Amherst, MA  
NIH, Bethesda, MD

**May 1, 2004 – April 30, 2005**

Northern Illinois University, DeKalb, IL  
Rutgers University, New Jersey  
Johns Hopkins Folding Meeting, St. Michaels, MD  
Duke University, Durham  
University of Richmond, Chemistry

**May 1, 2003 – April 30, 2004**

Gibbs Conference, Carbondale, IL  
Microcalorimetry Conference, Atlanta  
Yale University, Molecular Biophys. & Biochemistry  
Emory University, Chemistry  
University of Kentucky, Biochemistry  
Wake Forest University, Physics  
UNC-Chapel Hill, Chemistry  
13th Conversation in Biomolecular Stereodynamics, SUNY Albany

**May 1, 2002 – April 30, 2003**

Biopolymers Gordon Conference  
FASEB Protein Folding in the Cell Meeting  
Toronto Biophysics Symposium  
Rensselaer Polytechnic, Chemistry  
Penn. State, Chemistry  
Washington University, Biochemistry  
UNC-Chapel Hill, Biochemistry & Biophysics  
NC State University, Biochemistry  
UNC-Chapel Hill, Chemistry

Drexel University, Biology  
University of Pennsylvania, Biophysics

**May 1, 2001 – April 30, 2002**

Proteins Gordon Conference

Reversible Assoc. in Structural Molecular Biology Gordon Conference

Boston ACI Proteomics Symposium

University of Virginia, Biophysics

Washington State University, Chemistry

Sunesis, Inc., South San Francisco

Stanford University, Biochemistry

Georgia Tech., School of Chemistry and Biochemistry.

Georgia State University, Chemistry

**Patents:**

Tardigrade disordered proteins as protein stabilizers  
US provisional patent application 62/375,238, Published March 25, 2022  
Boothby T, Goldstein B, Pielak GJ, Piszkiwicz S, Brozena A

Device for particulate NMR samples in fluid  
US 8,773,130 B2  
Pielak GJ, Barnes C, Sharaf N, Young G, Pinero F, Charlton L, Seagle C

**Publications: [190 total, >11900 citations, H-index (Google Scholar) 62]**

Stewart CJ, Olgenblum GI, Propst A, Harries D, Pielak GJ. 2023. Resolving the enthalpy of protein stabilization by macromolecular crowding. *Protein Science*, in press.

Eicher JE, Brom JA, Wang S, Sheiko SS, Atkin JM, Pielak GJ. 2022. Secondary structure and stability of a gel-forming tardigrade desiccation-tolerance protein. *Protein Science*, in press.

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Brom J, Pielak GJ. 2022. Desiccation-tolerance- and globular- proteins adsorb similar amounts of water. *Protein Sci* 31: e4288.

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Crilly C, Brom JA, Warmuth O, Esterly HJ. 2022. Protection by desiccation-tolerance proteins probed at the residue level. *Protein Science*, 31: 396-406

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- Stadtmiller SS, Aguilar, JS, Waudby C, Pielak GJ. 2020. Rapid quantification of protein-ligand binding via  $^{19}\text{F}$  NMR lineshape analysis. *Biophysical Journal*, 118: 2333-2335.
- Chu I-T, Speer SL, Pielak GJ. 2020. Rheostatic control of protein expression using Tuner cells. *Biochemistry*, 59: 733-735.
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