July 2022

GEORGE C. SCHATZ

ADDRESS: Department of Chemistry
Northwestern University
Evanston, Illinois 60208-3113
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PERSONAL DATA: Born, April 14, 1949 (Watertown, New York)
Married, three sons.

EMPLOYMENT HISTORY:

Northwestern University, Assistant Professor (1976-1980)
Associate Professor (1980-1982)
Professor of Chemistry (1982-present)
Dow Professor (1994-6)
Morrison Professor(2002-present)
Professor of Chemical and Biological Engineering (2009-present)
Professor of Applied Physics (2012-present)

EDUCATION:

Clarkson University (Potsdam, NY) B.S. in Chemistry (June, 1971)
California Institute of Technology (Pasadena, CA) Ph.D. in Chemistry (1976)
Advisor—Aron Kuppermann (deceased)
Massachusetts Institute of Technology (Cambridge,MA)
Research Associate (10/75 to 8/76) with John Ross (deceased)

AWARDS, FELLOWSHIPS:

National Science Foundation Fellowship -- Caltech, 1971-1974
Herbert Newby McCoy Award--Caltech, 1975
Northwestern Faculty Honor Roll, 1978-1979
Alfred P. Sloan Research Fellow, 1980-1982
Camille and Henry Dreyfus Teacher-Scholar, 1981-1986
Fresenius Award (of Phi Lambda Upsilon) - 1983
Japan Society for Promotion of Science Fellowship - 1986
Fellow, American Physical Society - 1987
Visiting Fellow, Joint Institute for Laboratory Astrophysics, University of Colorado -- 1988-89
Welch Foundation Lecturer -- 1989
Max Planck Research Award -- 1993

Summer Lecturer, University of Colorado -- 1995
Fellow, AAAS - 1999
Elected to the International Academy of Quantum Molecular Sciences - 2001
Elected to the American Academy of Arts and Sciences – 2002
Elected to the National Academy of Sciences – 2005
Professeur 'invite classe exceptionnelle' – University Pierre et Marie Curie, Paris, 2007
Bourke Lecturer and Medal of the Faraday Division of the Royal Society of Chemistry – 2007
Ver Steeg Distinguished Research Fellow, Northwestern University, 2008-2013
Feynman Prize of the Foresight Institute – 2008
Fellow of the American Chemical Society – 2009
Special Issue (George C. Schatz Festschrift) of the Journal of Physical Chemistry A, Vol 113, 2009.
Peter Debye Award of the American Chemical Society – 2010
Herschbach Medal of the Conference on the Dynamics of Molecular Collisions-2011
Times Higher Education list of Top 100 Chemists of the Past Decade – 2011
Honorary Degree (Doctor Honoris Causa) University of Córdoba, Argentina – 2011
Honorary Doctorate, Clarkson University – 2012
S F Boys-A Rahman Award of the Royal Society of Chemistry – 2013
Fellow of the Royal Society of Chemistry (FRSC) – 2013
Hirschfelder Prize, University of Wisconsin – 2014
Thompson-Reuters, 2002-2012 citations: Highly Cited Researchers 2014-2016
Mulliken Medal, University of Chicago, 2014
John Stauffer Lecturer, USC, 2015
Edgar Fahs Smith Lecturer, University of Pennsylvania, 2016
Irving Langmuir Award in Chemical Physics, American Chemical Society, 2016
Condon Lecturer, University of Colorado, Boulder, 2016
Distinguished Lecturer, Materials Science and Engineering, RPI, 2016
Joe L. Franklin Memorial Lecturer, Rice University, 2017
Andreas C. Albrecht Lectureship, Cornell, 2017
Xingda Lecture, Peking University, 2017
Plenary Lecture, XXXVI Biannual Meeting of the Royal Society of Chemistry of Spain, 2017
2017-21 Highly Cited Researcher, Clarivate Analytics
Honorary Fellow of the Chemical Research Society of India (CRSI), 2017
Honorary Fellow of the Chinese Chemical Society, 2017
Honorary Professor, Indian Institute of Science Education and Research Kolkata, India 2018
Sackets Harbor (High School) Hall of Fame – 2018, Distinguished Alumni Award - 2019
Ahmed Zewail Prize – 2019
Paul Cross Lecture, University of Washington, 2019
Noyes Lecture, University of Rochester, 2019
Nanqiang Lecture, Xiamen University, 2019
Harvard, MIT, BU theoretical chemistry lecture, 2020
Top influential chemist 2010-2020 (ranked 8th worldwide), academicinfluence.com
Forum of Great Minds Seminar, USTC, 2020
Golden Knight Award 2021, Clarkson University
Max T. Rogers Lecture, 2021, Michigan State University
Harrison Shull Lecture, 2022, Indiana University

Ranked 59th in the US in Materials Science, and 51st in Chemistry, based on h-index, by Research.com 2022

PROFESSIONAL POSITIONS:

Consultant at Argonne National Laboratory (1978-1982)
Staff Scientist Appointee at Argonne National Laboratory (1983-86)
Consultant at Battelle Columbus Laboratories (1979-1980)
Consultant at Chemical Dynamics Corporation (1981-82)
Panel Review Member for the Department of Energy (1981)
Organizer, 16th Midwest Theoretical Chemistry Conference, Evanston, May 20-21, 1983
Organizer, Workshop on Future Directions for Supercomputer Use in Chemistry, Evanston, Oct. 15-17, 1984
Consultant at Signal UOP Corporation (1985)
Co-Organizer, Gordon Conference on Molecular Energy Transfer, 1989
Panel Review Member, AFOSR (1989)
Panel Review Member, Canadian Centre of Excellence Program (1989)
DOE Review Panel for Combustion Dynamics Facility (1989)
Panel Review Member, Sandia Combustion Research Facility (1991)
NORCUS Faculty Appointment, Pacific Northwest Lab (1991-95)
Vice Chairman, Chair-Elect, Chair Division of Chemical Physics, APS (1992-5)
Vice Chairman, Chair-Elect, Chair Subdivision of Theoretical Chemistry, Physical Division (1992-5)
AFOSR Chemical Sciences Review Panel (1992, 1995-7)
Member, Committee on Mathematical Challenges from Computational Chemistry, National Academy of Sciences, 1994
Organizer, Symposium on Electronically Nonadiabatic Dynamics, ACS Meeting, Washington, D. C., August, 1994
Organizer, 28th Midwest Theoretical Chemistry Conference, Evanston, May 11-13, 1995
Coorganizer, Bodenstein Centennial Meeting, Heidelberg, Germany, July, 1995.
Coorganizer, Symposium on Highly Excited States in Chemistry, ACS Meeting, Orlando, Florida, August, 1996
Organizer, Dynamics of Molecular Collisions Meeting, Gull Lake, MN, July 21-25, 1997
External Committee Member, Theoretical Chemistry Professorship, Gothenburg University, December, 1996
Review Panel, Journal of Chemical Physics, University of Chicago, March 25-26, 1997
Vice Chair, Chair-Elect, Chair - Physical Division, American Chemical Society, 1997-2000
External Review Panel, Department of Chemistry, University of Minnesota, April 20-22, 1997
External Review Panel, Chemistry Division, Brookhaven National Laboratory, October 19-22, 1997
Physics Coordinating Group, Army Research Office, West Point,NY November 17-18, 1997
MURI Review Meeting (Organizer) Northwestern, May 27-28, 1998
NSF Workshop on Future Trends in Chemistry Research, Keystone,CO Sept. 18-20 (panel organizer)
ARO Physics Research Program Panel, Georgia Tech, October 14-16, 1998

MURI Review Meeting (Coorganizer) Aberdeen Proving Ground, June 10-11, 1999
LBL Review of Chemical Dynamics, Feb. 23, 2000
MURI Review Meeting (Organizer) Northwestern, June 1-2, 2000
Panel Review Member, Sandia Combustion Research Facility (2001)
MURI Review Meeting (Organizer) Northwestern, Dec. 12, 2001
External review committee, Institute for Atomic and Molecular Science, Academia Sinica, Taiwan, August 28-29 (2003)
Panel Review Member, CSAFE University of Utah, Oct. 7-8, 2003
Panel Review Member, Brookhaven National Laboratory, Oct. 20-22, 2003
Panel for Selection of Editor of Nano Letters, American Chemical Society, 2004
Visiting Scientist, Argonne National Laboratory (1986-2004)
Advisory Board, Institute for Atomic and Molecular Sciences, Taiwan, 2004-2012
LBL Review of Chemical Dynamics, 2006
National Research Council Postdoctoral Associate Selection Committee 2006-10
External Advisory Board, Center for Nanoscale Materials, Argonne National Laboratory 2007-2012
External Advisory Board, National Center for Design of Biomimetic Nanoconductors, University of Illinois, 2007-2008
Advisory Board, Northwestern Nanoscience and Engineering Research Center, 2005-2010
Advisory Board, Northwestern Materials Research Center, 2006-present
Advisory Board, Network for Computational Nanotechnology, 2006-8
Panel Review Member, Sandia National Laboratory, 2008
Jury Member, Institute Universitaire de France, 2008
Panel Review Member, NSF, 2009
External Advisory Committee, Dept of Chemistry, University of Kansas, 2009
National Research Council, Panel on Armor and Armaments, 2009-2012
Steering Committee of the EPSRC Programme Grant centered in Oxford and Bristol, UK, 2009-2013
Expert Advisor for the BiopSys: Network for Bioplasmonic Systems at the University of Toronto, 2010-2013
Advisory Board, CaSTL Center, Irvine, 2010-2014
Class membership committee, National Academy of Science, 2010-11
External Advisory Committee, School of Chemistry and Biochemistry, Georgia Institute of Technology, 2012
2013 Scientific and Academic Advisory Committee Reviewers for Nanoscience at the Weizmann Institute, Israel
2013 External Advisory Committee, University of Texas, EFRC EFRC on “Understanding Charge Separation and Transfer at Interfaces in Energy Materials” (EFRC:CST)
WTEC (World Technologies and Services) Advisory Committee for Nanomodular Materials and Systems by Design (NMSD), 2015
Review of the School of Chemical Sciences, University of Illinois, June, 2015
NAS Army Panel on Ballistics Science and Engineering, National Research Council, 2015-16
DOE Council on Chemical and Biochemical Sciences, 2015-8
ACS on Campus, Mumbai, Bangalore, Hyderabad India 2016
ACS on Campus, Argonne National Lab, Northwestern University, 2016
ACS on Campus, Hyderabad India 2017

2017 Beckman Institute Research Theme Review Committee for Molecular and Electronic Nanostructures, UIUC, Oct. 18-20, 2017 (committee chair)
Review of School of Chemistry and Biochemistry, Georgia Institute of Technology, Atlanta GA, Feb.6-8, 2018 (committee chair)
External Opponent, PhD thesis of Heikki Rekola, Aalto University, Finland May 25, 2018
Advisory Board: CENT EFRC (MIT) 2019-present
Advisory Board, Institute for Atomic and Molecular Sciences, Taiwan, 2020-present
Review of Chemistry Department, Washington University, St. Louis, Dec.6-9, 2020
External review panel (chair): Academia Sinica, Taiwan, August 30,31 2021

EDITORIAL POSITIONS:

Editorial Board, Journal of Chemical Physics (1990-92)
Specialist Editor, Computer Physics Communications (1991-2008)
Advisory Board, Journal of Physical Chemistry (1992-93)
Editor-in-Chief, Journal of Physical Chemistry (2005-2019)
Senior Editor, Journal of Physical Chemistry (1993-2004)
Editorial Board, Chemical Physics Letters (1994-2008)
Editorial Board, Theoretica Chimica Acta, Theoretical Chemistry Accounts (1995-2008)
Editorial Board, Annual Reviews of Physical Chemistry (2002-5)
Editorial Board, Accounts of Chemical Research (2005-8)
Editorial Board, Advances in Chemical Physics, 2008-18
International Advisory Board, Bulletin of the Korean Chemical Society, 2009-15
Editorial Advisory Board, Chemical Reviews, 2017-19

RESEARCH SUPPORT:

Petroleum Research Fund-ACS (1977-1980)
"Studies of the Dynamics of Reactions Between Small Molecules Using Classical Stochastic Collision Theory," total amount - $9,000

Research Corporation (1977-1978)
"Theoretical Studies of the Reactions Between Small Molecules Using Stochastic Reduction Collision Dynamics," total amount - $6,000

National Resource for Computation in Chemistry (1978-1979)
"Classical Trajectory Studies of State to State Energy Transfer in Triatomic Molecules," total amount - $2,000

National Science Foundation (1979-1981)
"Theoretical Studies of Chemical Reactions and Collisional Energy Transfer Between Small Molecules," total amount - $120,000

National Resource for Computation in Chemistry (1979-1980)
"Classical Trajectory Studies of State to State Collisional Energy

Transfer and Chemical Reactions Involving Triatomic Molecules," - total amount - $6,000

Office of Naval Research (1979-82)
"The Development of Laser Analytical Methods for the Characterization of Solid Liquid and Solid/High Pressure Gas Interfaces" (joint with J. W. Chung, P. C. Stair, R. P. Van Duyne and E. Weitz), $1,256,671

Alfred P. Sloan Foundation Fellowship (1980-1982), total amount $20,000

National Science Foundation (1982-1985)
"Theoretical Studies of Small Molecule Chemical Dynamics", total amount $197,707 supplement in 1984, and a $60,000 supercomputer grant in 1984

Camille and Henry Dreyfus Teacher-Scholar Award (1981-1986), total amount $40,000

Air Force Office of Scientific Research (1983-84)
"Microstructural Fabrication and Characterization by Surface Enhanced Optical Processes", $187,986

National Science Foundation (1984-5)
"Workshop on Future Directions for Supercomputer Use in Chemistry," total amount $39,375

National Science Foundation (1985-88)
"Theoretical Studies of State to State Chemistry," total amount - $240,000 plus a $45,000 supercomputer grant in 1985, $50,000 in 1986, $150,000 in 1987

National Science Foundation (1985-88)
"Ultrahigh Vacuum Surface Optical Spectroscopy" (joint with R. P. Van Duyne), total amount - $257,000

National Science Foundation (1988-91)
"Theoretical Studies of State-to-State Chemistry," total amount $248,700

National Science Foundation (1988-91)
"Ultrahigh Vacuum Surface Optical Spectroscopy," (joint with R. P. Van Duyne) total amount $293,500

NASA Ames (1990-91)
"HN2 Potential Energy Surface and Unimolecular Reaction Dynamics," $19,833

NSF (1991-95)
"Theoretical Studies of State to State Chemistry," $478,000 plus $56,700 supplement for equipment, and
$10,725 for Eastern European collaboration

PRF (1991-93)
"Theoretical Studies of Photodissociation on Surfaces," $40,000

Materials Research Center (1991), Northwestern University, $3600
Seed Funding for Diamond Film Thrust Group

NASA Ames (1992-95)
"Theoretical Studies of Rate Coefficients for Gas Phase Reactions," $46,145 (1992-93); $64,283 (1993-94), $65,003 (1994-95)

PRF(1995-7)
"Theoretical Studies of Surface Enhanced Spectroscopy", $50,000

NSF (1996-8)
ATheoretical Studies of State to State Chemistry@, $370,000

AFOSR (1996-7)
ADynamics of Molecular Collisions Conference@, $10,000

ARO (1997-2002) (G. Schatz, PI, joint with 8 people)
ACenter for Advanced Cluster-derived Materials@, $5,000,000
My share: $150K/yr

Alumnae of Northwestern University (1997)

ADynamics of Molecular Collisions Conference@ $2,000

NSF(1998-2000) (Joint with Chad Mirkin)
ADNA Directed Formation of Inorganic Nanostructures@,$500,000

NSF(1999-2002)
ATheoretical Studies of State of State Chemistry@, $414,962
Annual budget: $130/yr

AFOSR (2000-2005) (Chad Mirkin PI, joint with 8 people)
ASurface-Templated Bio-Inspired Synthesis and Fabrication of Functional Materials@, $5,000,000 My share: $90K/yr

MRSEC/NSF (2000-2010)
Thrust Group: Nanostructured Materials for Chemical and Biological Sensing
$22,000,000 My share: $69K/year

AFOSR (2001-2006) (Steve Sibener PI, joint with 7 people)
AMaterials Chemistry in the Space Environment) $3,000,000
My share: $110 K/yr

DURINT/DARPA (2001-2007) (Chad Mirkin PI, joint with 7 people)
AUltrasensitive and selective chip-based DNA detection) $3,000,000
My share: $73K/yr

NSEC (2001-2011) NSF Nanotechnology Science and Engineering Research Center
Chad Mirkin, PI $22,000,000
My share: $80K/yr

NSF (2002-5)
ATheoretical Studies of State to State Chemistry@, $367,000

AFOSR (2002-7) (Richard Van Duyne, PI, joint with 9 people)
AMultidimensional Surface Enhanced Sensing and Spectroscopy@$3,000,000
My share: 100K/yr

NASA (2002-7) (Rod Ruoff, PI, joint with 5 people at NU; primary location is Princeton)
ABioinspired Design and Processing of Multifunctional Nanocomposites@
My share: 100K/yr

NSF(2002-12) (GCS is NU PI, primary location is at Purdue, Mark Lundstrom is PI)
ANetwork for Computational Nanotechnology@ $12,000,000
My share: $60K/yr

DOE (2003-8) (GCS is PI)
AComputational Nanophotonics: Modeling Optical Interactions and Transport in Tailored Nanosystem Architectures@ 170,000/yr

NSF (2003-6) (Horatio Espinosa is PI, joint with 5 people)
@Science and Technology of Ultrananocrystalline Diamond Films For Multifunctional MEMS/NEMS Devices@
My share: 30K/yr

NASA (2003-4) (Mel Ulmer is PI, joint with GCS)
ASelf Assembly of Optical Structures in Space@ $64,000

DARPA (2002-5) (Mike Wasielewski is PI, joint with GCS, CAM)
"Design, Self-Assembly, and Characterization of Controllable Gradient Index Optics"
$599,525(my share: 80K/year)

DARPA (2005-7) (GCS is PI)
"Computational Electrodynamics Studies of Advanced Lens Structures"
$45,000 + $95,000

AFOSR (DTRA) (2006-8) (R. P. Van Duyne is PI)
"New directions in surface enhanced Raman spectroscopy for chemical and biological sensing"

$180,000

NSF-CHE (2006-9) (GCS is PI) CHE-0843832
"Theory and Computation for Templated Self Assembly in Soft Matter"
$120K per year

NSF-CHE Collaborative Research Program (2006-11) (F. Lewis is PI) CHE-0628130
"DNA Photonics"
$85K per year

AFOSR (2007-10) (G. Schatz is PI) FA9550-07-1-0095
"Theoretical Studies of Ion-molecule and Ion-surface collisions"
$120K per year

DARPA (2008-11) (R. P. Van Duyne is the PI) FA9550-08-1-0221
"Ultrahigh performance nanoantennas for surface enhanced Raman spectroscopy"
$266,000 (first year)

NSF-CMMI (2009-12) (Dean Ho is the PI) CMMI-0856492
"Integrative Modeling/Simulation and Experimental Validation of Therapeutic Nanodiamond Materials"
$1,131,220 (3 years, 4 PIs)

ARO MURI (9/09-8/14) (Horacio Espinosa is PI) #W911NF-09-1-0541
"Multiscale design and manufacturing of hybrid DWNT-polymer fibers"
$85K/yr

DOE-NERC (9/09-6/14) (Bartosz Grzybowski is PI) DE-SC0000989
Center for integrated training in far-from-equilibrium and adaptive materials
$200K/yr

DOE-ANSER (9/09-6/18) (Mike Wasielewski is PI) DE-SC0001059
Argonne-Northwestern Solar Energy Research Center
$130K/yr

NSF-CCI (9/09-6/14) Steven Sibener is PI CHE-0943639
Center for energetic non-equilibrium chemistry at interfaces
$75K/yr

DOE-SISGR (9/09-8/15) Mark Hersam is PI DE-SC0001785
Single molelcule chemical imaging at femtosecond time scales
$70K/yr

NIH/NCI-PSOC (9/09-8/14) Jon Widom in PI 1U54CA143869-01
Physical sciences and oncology center
$100K/yr

DOE-BES (6/10-5/19) DE-SC0004752 DE-FG02-10ER16153
Surface plasmon enhanced chemistry
$570K/3 yrs

NSF DMR- 1006380 (6/10-5/13) Teri Odom is the PI
Broadband, Quasi-Crystalline, and Low-Symmetry Plasmonics
$125K/yr

NSF CHE- 1041812 (9/10-8/13) Richard Van Duyne is PI
Surface-enhanced Raman Spectroscopy for Art Research, with Theory and Education
$90K/yr

AFOSR FA9550-10-1-0205 (5/10-5/13)
Theoretical studies of gas-surface and gas-phase dynamical processes
140K/yr

AFOSR MURI FA9550-11-1-0275 (9/15/11-9/14/14) Chad Mirkin in PI
Bioprogrammable One-, Two-, and Three Dimensional Materials
140K/yr

DARPA-DLT N66001-1165-5536O (10/1/11-9/30/13) Richard Van Duyne is PI
Dialysis-like Therapeutics
~120K/yr

CEMRI DMR-1121262 (9/15/11-8/31/17) Monica Olvera is PI
Northwestern Materials Research Center
$65K/yr

NSF CHE-1147335 Theory and Computation for Self-Assembly in Soft Matter (6/12-5/15)
$432,318

ONR N00014-13-1-0172 (1/13-12/15) Teri Odom is PI
Dynamically textured polymer surfaces
~120K/yr

NSF DMR-1306514 (9/1/13-8/31/22)
Coherence and Energy Transfer Processes in Lattice Plasmon Lasers
$479,865 (80K/yr)
Symmetry Breaking in Non-Hermitian Plasmonic Lattices
$279,000

DOE-BES (6/13-8/23) DE-FG02-10ER16153
Surface plasmon enhanced chemistry
~$150K/yr

Center for Bioinspired Energy Science (CBES) (8/1/14-7/31/22)DE-SC0000989
$12,000,000 $200K/yr

AFOSR FA9550-14-1-0053 (3/1/14-2/28/17) subcontract from Princeton
Fundamental studies of reactive processes at plasma-surface interfaces
$750K/3yrs, 250K/yr

NSF CHE-1414466 (09/01/14 – 08/31/19) subcontract from UC Irvine
The Center for Chemistry at the Space-Time Limit (CaSTL)
20M total budget 195K/yr

Department of Energy (08/01/14 - 07/31/22) DE-AC02-06CH11357
Understanding Roles of Ultrafast and Coherent Electronic and Atomic Motions in Photochemical Reactions
729K/3years, then 82K/yr, then 107K/yr , then 84K/yr

NSF CHE-1465045 (6/15-5/18)
Structures and excited state dynamics of self-assembled photonic structures
$433,304

Air Force Research Laboratory, C-ABN (Center for Advanced Bioprogrammable Nanomaterials) Center of Excellence (6/15-20)

AFOSR MURI: Electrochemical Imaging & Mechanistic Studies on the Nanoscale (1/16-1/20)
$599,726 (total) FA9550-14-1-0003

ICEP (Institute for Catalysis in Energy Processes) 9/16-8/23 DOE DE-FG02-03ER15457
~$50,000 (per year)

NSF CHE-1760537 (6/1/18-5/31/21) -Donor-Acceptor Energy Transfer in the Presence of Photonic and Plasmonic Structures $433,001 (three years)

DOE Advanced Materials for Energy Water Systems (AMEWS) subcontract from Argonne, ~$200K (four years) 2018-2022

Center for Light Energy Activated Redox Processes (LEAP), DE-SC0001059, 9/18-7/20, $160,000

NSF CHE-1836392 EAGER: Collaborative Research: Developing Experiment and Theory for Entangled Photon Spectroscopy, 8/18-7/20 ($150,000)

NSF CMMI-1848613 RAISE: Auto-regulatory scaffolds for directed evolution of non-living functional materials, $333,000 (three years) 9/18-8/21

NASA Air-Carbon Boundary Layer Chemistry for Hypersonic Ablation 80NSSC19K0220 2/19-1/22. $165,000 (three years)

CSSM: Center for the Sustainable Separations of Metals, NSF 2019-2022 $410K (two PIs)

AFOSR: FA9550-18-1-0252 Electronic Structure Theory for Spin-Forbidden Reaction Dynamics
$48564 2019-2020

AFOSR: FA9550-19-1-0410 Fundamental Study of p-Type Doping in MOCVD-Grown Ga2O3 (joint with M. Razeghi) $50K 2019-2020

DOE: Center for Molecular Quantum Transduction (2020-24)
$539,216

ARO MURI: W911NF-20-1-0105 Plasma-driven solution electrochemistry (2020-2025)
$968,822

NSF: DMR-2002891 Collaborative Research: Optical transitions in metallic nanoclusters at high pressure (2020-2024)
$124,999

NSF: CHE-2055565 Donor-acceptor energy transfer involving classical and quantum light in the presence of photonic and plasmonic structures (2021-2024)
$449,425

DOE-BER Biological imaging using entangled photons (2021-4)
$541,000 (joint with Ted Goodson)

DOE-BES Tailoring the selective transport pathway of rare earth elements in solid ionic channels guided by *in situ* characterization and predictive modeling (2021-2024)
$450,000 (joint with Chong Liu)

DEPARTMENTAL COMMITTEES:
Graduate Admissions Committee, 1977-1986 (Chairman, 1980-1986), 1997-2004, 2006-present
Graduate Affairs Committee, 1976-1977, 1983-1986 (Chairman, 1983-1986), 1997-8,2001-4, 2010-2012
Computer Committee, 1977-present
Chairman, Physical-Analytical Division, 1983-84, 1989-1992
Planning Committee, Chair 1992-1995 Vision Committee 2004-6
Facilities Committee, 1994-5
General Chemistry Program (2004-present), Chair 2001-4
Space Committee: Chair 2006-7, 2011-2014, 2017-8
Executive Committee: 2018-present
Search Committee Chair, Chemistry, 2020
Chair of Reappointment Committee: 2021-2
Junior Search Committee Chair, 2021-2
Strategic Hiring Committee, 2021-22

ADVISING:

Freshman Advisor, 1977-1981, 1991; Upperclassmen 1995-present

COURSES TAUGHT:

General Chemistry A72-172 (Winter, 1999,2000, 2001,2009),
171 (Fall 2001-21)
Physical Chemistry C40-1 1980 (Spring), 1984 (Fall)
C40-2 1977 (Spring)
C40-3 1978 (Spring), 1980 (Fall), 1987 (Spring) 342-2 2004 (winter)
C48 1984 (Fall)
C61-1 1980 (Winter), 1982 (Winter)
342-2 2004-10 (Winter)
Junior Tutorial C85 1990 (Spring), 1991 (Spring), 1992 (Spring)
Quantum Chemistry D42-1 1977, 1978 (Fall), 1985-87 (Fall), 1989 (Fall), 1990 (Fall),
1991 (Fall), 1992 (Fall), 1995(Fall), 1996(Fall), 1997 (Fall)
D42-2 1977-1984 (Winter), 1988 (Winter), 1989 (Spring),
1990 (Winter), 1992 (Winter), 1993 (Winter), 1995(Winter)
1996 (Winter), 1997 (Winter), 1998 (Winter), 1999(Winter)
442-2 2011-22
Advanced Topics D45-445 1978 (Fall), 1980 (Fall),2000(Spring)
D46 1988 (Spring), 1991 (Spring)
448 2001 (Spring), 2002(Spring),2003 (Spring)
Seminar Courses D61 1977 (Fall), 1981 (Spring), 1984 (Winter), 1986 (Fall), 1989 (Fall),
1993(Winter), 1996 (Spring), 1998 (Fall), Winter(2009),Winter(2010)

UNDERGRADUATE RESEARCH C99 STUDENTS:

Cassandra Vaughn	1977 B.S.(1977)	presently at IBM
Robert Altkorn	1978 B.S.(1979)	presently at Northwestern Technical Staff
Gregg Wells	1980-1981 B.S.(1981)	Asst Prof, Texas A&M Medical School
Kim A. White	1982-1983 B.S.(1983)	Exxon
Jay Badenhoop	1985-1987 B.S. (1987)	Faculty, Potomac State College, WVU
Bill Bender	1987-1988 B.S.(1988)	presently at ZS Associates
Jeff Dyck	1990	Carnegie-Mellon University (grad student)
Scott Florance	1991-2	
Sapan Shah	1991	
Morfia Komotos	1992-4	DePaul Law School
Stephanie Halstead	1994	
Joe McMahon	1994	
Chris Maierle	1995	Grad School, Berkeley
Mike Mesleh	1995-6	Grad School, Penn
Anatasios Papaioannou	1996	Grad School (physics) at Wisconsin
Brent Fischer	1998	Grad School, MIT
Ken Kumayama	1999	Medical School
Will Grande	2000	Medical School
Julianne Kuk	2003-4	Grad School, Northwestern
Nicolas Janel	2003	Ecole Superieur d=Optique, Orsay, France
Norman Mangeret	2004	Ecole Superieur d=Optique, Orsay, France

Elodie Tartas	2004	Ecole Superieur d=Optique, Orsay, France
Greg Cvetanovic	2004	
Anne-Sophie Louis	2005	Ecole Superieur d=Optique, Orsay, France
Eduard Moreaux	2005	Ecole Superieur d=Optique, Orsay, France
Jack Flinterman	2005	
Gene Rayford	2005	Southern Illinois University
Joshua Banks	2005	University of Chicago
Brian Radak	2006-8	Northwestern University
Ben Faber	2007	Caltech
Tyler Takashita	2007	University of Northern Colorado
Brett Margolis	2008	Northwestern University
Elizabeth Brezinski	2008-9	Northwestern University
Wasut Pornpatcharapong	2009-2010	Northwestern University
Yamei Liu	2009-2010	Northwestern University
Jason Hucheson	2009-2013	Northwestern University
Jenna Franck	2011-2012	Northwestern University
Victoria Vaccarezza	2013-5	Northwestern University
John Coukos	2013-5	Northwestern University
Samson Fong	2013-5	Northwestern University
Colin Egan	2014-5	Northwestern University
Brandon Ko	2015-6	Northwestern University
Leighton Zhao	2017-9	Northwestern University
Joshua Kim	2017-8	Northwestern University
Kyle Rocha	2017	UCSC
Faraz Khan	2018-9	
Sam Kielar	2019-2021	grad school Cornell
Max Wirtz	2021	UW Platteville

GRADUATE STUDENTS:

Mark Moser	1977-1981	Ph.D.(1982)	UOP
Thomas Mulloney	1977-1980	M.S. (1980)	
Henry Elgersma	1978-1981	M.S. (1980)	
Dean DeCrease	1979-1981	M.S. (1981)	Dir. Tech. Services, Weyerhauser Co.
Lynn Geiger	1981-1984	Ph.D.(1984)	Northern Colorado Univ., faculty
Mitch Colton	1983-1985	Ph.D.(1985)	Cerac Chemicals Co.
Ellen Zeman	1983-1987	Ph.D.(1987)	Journal Editor, Univ. of Vermont
Joseph Khoury	1984-1985	M.S. (1984)	
Lester Gibson	1984-1986	Ph.D.(1986)	Center for Naval Analysis
Michael FitzCharles	1985-1987	M.S. (1986)	
Peggy Bruehl	1986-1990	Ph.D.(1990)	UCAR (Boulder, CO)
Hiroyasu Koizumi	1987-1991	Ph.D.(1991)	Asso. Prof., Tsukuba Univ.
Kathy Kudla	1988-1993	Ph.D. (1993)	Searle
Michelle Brown	1989-1990	M.S. (1990)	
Wen-hui Yang	1990-1995	Ph.D. (1995)	Planck Engineering

Renee Guadagnini	1991-1998	Ph. D. (1998) Center for Naval Analysis
Andrew Pipino	1991-1995	Ph.D. (1995) NIST (staff), Tanner Research
Kimberly Bradley	1993-1998	Ph.D. (1998) Forensics Lab, State of Illinois
Traci Jensen	1994-1999	Ph.D. (1999) Omega Optical
Lance Kelly	1997-2002	Ph.D. (2002) Five stones research (Huntsville AL)
Guosheng Wu	1997-2001	Ph. D. (2002) Pharmoron
Jiang-tien Li	1998-2000	M. S. (2000)
Newt Miller	1999-2001	M. S. (2001)
Hai Long	2000-2006	Ph. D. (2006) NREL staff
Linlin Zhao	2001-2006	Ph. D. (2006) lecturer Penn State
Les Kismartoni	2001-2002	M.S. (2002)
Wenfang Hu	2002-2007	Ph. D. (2007) Central Florida postdoc
Leif Sherry	2002-2007	Ph. D. (2007) Center for Naval Analysis (deceased)
Jing Zhao	2003-2008	Ph. D. (2008) faculty U. Conn.
Joshua Middendorf	2004-2006	MS. (2006)
Stacey Standridge	2005-2010	Ph. D. (2010) AAAS Fellow
Martin McCullagh	2005-2010	Ph. D. (2010) faculty Colorado State, Oklahoma St NIH Fellowship 2012
Jeffrey McMahon	2005-2010	Ph. D. (2010) faculty Washington State
Logan Ausman	2006-2010	Ph. D. (2010) IDA
Jennifer Roden	2006-2008	MS (2008) Chicago Public Schools
Ari Atkinson	2007-2009	MS (2009)
Nicholas Valley	2007-2012	Ph. D. (2012) PD Oregon, fac. Calif. Northstate U
Vince Cho	2008-2016	Ph. D. (2016)
Eric Smoll	2009-2013	Montana St., postdoc at NASA Ames
Patrick Shively	2009-2011	
Dan Hannah	2010-2015	Ph. D. (2015)NSF Fellowship 2012-5, PD Berkeley GRC Young Investigator award (2014) Insight Data Science (Boston)
Lindsey Madison	2010-2015	Ph. D. (2015) NSF Fellowship 2012-5, PD Washington, faculty Colby College
Natalie Gruenke	2010-2015	Ph. D. (2015) NSF Fellowship, PD Berkeley, Exponent, Inc.
Daniel Park	2010-2015	Ph. D. (2015) Protiviti
Michael Ross	2011-2016	Ph. D. (2016) NDSEG Fellowship 2012-5, PD Berkeley, faculty Univ. Mass Lowell
Lam-Kiu Fong	2012-2018	Ph. D. (2018)NSF Fellowship 2013-6, PD UCSF
Adam Ashwell	2012-2017	Ph. D. (2017)IDA
Michael McAnally	2012-2017	Ph. D. (2017) NSF Fellowship 2014-7, Scipher
Weijia Wang	2012-2018	Ph. D. (2018)Lam Research, Apple
Danqing Wang	2013-2019	PD Berkeley (Miller Fellow)
Matthew Kelley	2014-2018	NDSEG Fellowship 2015-8
Mohamad Kodaimati	2014-2019	PD Harvard (Whitesides)
Claire Miller	2014-2016	M.S. 2017
Aysenur Iscen	2014-2019	PD Max Planck Mainz
Marc Bourgeois	2015-2019	PD U Washington (Masiello)

Gyeongwon (Kevin) Kang	2015-2021	PD Cambridge University (Baumberg)
Laurel Jones	2016-2018	M.S. 2020
Muwen Yang	2016-2021	PD Cornell (Peng Chen)
Yue Wu	2016-2021	Picarro Inc.
Rohit Raghavendra Murthy	2016-2018	M. S. 2018 Wilbraham and Monson Academy, Law School at Vanderbilt
Jun Guan	2016-2021	PD Northwestern
Chelsea Mueller	2017-present	
Cindi Zheng	2017-2021	IPMI Award 2021, Intel
Jiang-Wei Li	2018-2018	
Yeonjun Jeong	2018-2022	PD Argonne (Jasper)
Alanna Felts	2019-present	
Nikhil Chellam	2020-present	(NSF Fellowship 2021)
Tse-Min Chiang	2020-present	
Baxter Fluor	2020-present	
Zach Mast	2021-present	

POSTDOCTORAL STUDENTS:

Frederick W. King	1977-1978	Faculty (Professor) University of Wisconsin, Eau Claire
Charles Gallucci	1980-1981	Ohio Dominican College (Asst. Prof.)
Uri Laor	1980-1981	Nuclear Research Center, Beer Sheva, Israel
Prabhat K.K. Pandey	1980-1983	AT&T Bell Laboratories
Wayne A. Kraus	1982-1983	Singer
Charles W. Eaker	1983-1984	University of Dallas (retired)
Ronald Duchovic	1984-1985	Indiana Univ, Purdue Univ. Ft. Wayne
Grigory Natanson	1985-1988	Computer Science Corp.
Joseph Golab	1986-1988	Amoco
Hua Guo	1988-1990	Faculty (Prof.) University of New Mexico
George Lendvay	1989-1991	Group Leader, Hungarian Academy of Science
Neil Snider	1991-1992	Senior Research Associate, Northwestern
Mark Thachuk	1991-1993	University of British Columbia (faculty)
Patrick McCabe	1992-1993	Oxford University (programming)
Marc ter Horst	1993-1996	University of North Carolina (staff)
Kathy Kudla	1993-1995	Searle
Toshiyuki Takayanagi	1995-1996	Saitama University (faculty)
Toshimasa Ishida	1996-1997	University of Malaya
Lisa Pederson	1997-1998	Holland
Anne Lazarides	1997-2000	Duke University (faculty)
Karen Drukker	1998-2000	University of Chicago (Research Associate Professor, Dept of Radiology)
Mark Hoffmann	1999-2000	University of North Dakota (faculty)
Matt Lakin	2000-2002	EPA scientist
Joonkyung Jang	2000-2003	Pusan University in Korea (faculty)
Eduardo Coronado	2001-2001	University of Cordoba, Argentina (faculty)
Encai Hao	2001-2004	Nanofilm, Inc.
Biswajit Maiti	2001-2005	Banaras Hindu University (faculty)

Stefan Tsonchev	2001-2005	Northeastern Illinois (faculty)
Diego Troya	2002-2004	Virginia Tech (faculty)
Steven Mielke	2002-2008	University of Minnesota (deceased)
Shengli Zou	2003-2006	U. of Central Florida (faculty)
Lipeng Sun	2003-2006	North Carolina State (postdoc)
Kevin Shuford	2003-2006	Baylor University (faculty)
Hyonseok Hwang	2003-2007	Kangwon National University (faculty)
Gilbert(Shih-hui)Chang	2003-2005	National Cheng Kung University, Taiwan (faculty)
Seol Ryu	2003-2006	Chosun University, Seoul, Korea (faculty)
Sung Yong Park	2004-2006	University of Southern California (research faculty)
Zenong Ding	2003-2004	Compsyc
Maodu Chen	2003-2005	Dalian University (faculty)
Jeff Paci	2004-2007	research faculty, Univ of Victoria
Anatoliy Pinchuk	2004-2008	Colorado Springs (faculty)
Lasse Jensen	2004-2007	Penn State University (faculty)
Alexander Kudlay	2004-2006	business school, Berkeley
Sonya Garaschuk	2005-2006	University of South Carolina (faculty)
James Sullivan	2004-2005	Virginia Commonwealth (faculty)
Younjoon Jung	2005-2006	Seoul National University, Korea (faculty)
Christine Aikens	2005-2007	Kansas State (faculty)
Dongwook Kim	2005-2007	Kyonggi University, Suwon, Korea (faculty)
Jon Camden	2005-2008	Notre Dame (faculty)
Shuzhou Li	2006-2010	Nanyang Technical Univ, Singapore (faculty)
Nicolas Winter	2006-2009	Rosary College (faculty)
Stefano Tonzani	2006-2008	Cell Press
David Masiello	2006-2009	Univ. of Washington (faculty)
Tatiana Prytkova	2007-2010	Chapman University;Now at Cloud Pharmaceuticals
Maricris Lodriguito Mayes	2007-2011	U Mass Dartmouth (faculty)
Scott Yockel	2007-2010	Harvard University High Performance Computing
Ignacio Franco	2008-2011	Fritz Haber Institute, Berlin (staff) Fac. Rochester 2013
Ana Gonzalez	2008-2010	Univ. Puebla, Mexico (faculty)
One-Sun Lee	2008-2014 2021-present	Qatar Research Institute
Anne-Isabelle Henry	2008-2013	Northwestern University (administration)
Hanning Chen	2008-2012	American University (faculty)
Nadine Harris	2009-2011	Cambridge University/Nokia/Mentor Graphics
Jonathan Mullin	2009-2011	Army Research Lab
Tomekia Simeon	2009-2014	Dillard University (faculty)
Xiao Zhu	2010-2011	Purdue (research computing)/ Intel
Marty Blaber	2010-2013	Seagate
Marcin Ziolkowski	2010-2013	Clemson University
Biswajit Saha	2010-2013	Tata Steel
Mausumi Ray	2010-2013	Tata Steel
Ilyas Yildirim	2010-2014	Florida Atlantic Univ (faculty)
Wenchun Gan	2010-2011	
Xiaohu Li	2010-2013	Combustion Research Facility

Lakshmi Sankaran	2010-2012	
Montacer Dridi	2010-2014	IFREMER, Brittany, France
Al'ona Furmanchuk	2012-2015	PD Northwestern
Korosh Torabi	2012-2014	Wayne State (faculty)
Yang Yang	2012-2014	BASF
Fredy Aquino	2012-2013	QSimulate
Yong Zhou	2012-2014	Anhui University (faculty)
Sameer Patwardhan	2012-2017	India
Tao Yu	2012-2014	University of North Dakota (faculty) deceased 2021
Britain Willingham	2013-2013	Schlumberger
Craig Tainter	2013-2016	Vanderbilt University (lecturer)
Craig Chapman	2013-2017	Univ. New Hampshire (faculty)
Nicolas Large	2014-2016	UT San Antonio (faculty)
Kelsey Stocker	2014-2016	Suffolk University (faculty)
Adam Gagorik	2014-2017	Continental Corp, Detroit
Andrew Sirjoosingh	2014-2017	National Defence (Canada)
Eric Cheng-Tsung Lai	2014-2018	Incyte Inc.
Jeffrey McMahon	2014-2015	Washington State (faculty)
Clotilde Lethiec	2014-2016	Edmonton, Canada
Yu Zhang	2015-2017	LANL
Wendu Ding	2015-2018	MIT postdoc/Wake Forest Univ.(faculty)
Martin Mosquera	2015-2020	Montana State University (faculty)
Rebecca Gieseking	2015-2018	Brandeis (faculty)
Dhara Trivedi	2015-2018	Clarkson (faculty)
Wei Lin	2015-2018	Fuzhou University (faculty)
Chad Heaps	2016-2018	Afton Chemical
Liang-Yan Hsu	2016-2017	IAMS (faculty)
Micaela Matta	2017-2019	Univ. Liverpool (Newton Fellowship, Marie Curie Fellowship) King's College London (faculty)
Kobra Nasiri	2017-present	
Charles Cherqui	2017-present	
Leighton Jones	2019-present	
Suzanne Neidhart	2019-2020	Henderson State University (faculty)
Kuniyuki Miwa	2019-2020	Institute for Molecular Science
Subhajyoti Chaudhuri	2020-present	
Charles Jason Zeman	2020-present	
Marc Bourgeois	2020-2020	postdoc U. Washington
Qinsi Xiong	2020-present	
Tumpa Sadhukhan	2020-present	
Woo Cheol Jeon	2021-present	
Sajal Giri	2021-present	

Senior Staff

Fred Arnold	2003-2005
Baudilio Tejerina	2005-2011
Marcelo Carignano	2011-2012

Kevin Kohlstedt 2012-present

VISITORS:

Howard Mayne (1992)	University of New Hampshire
Gabriel Balint-Kurti (1996)	Bristol University
Carlo Petrongolo(1998)	University of Siena, Italy
George Lendvay (1999, 2000-12)	Hungarian Academy of Science
Rob van Harrevelt (2000)	University of Leiden
Diego Troya (1999, 2000,2001)	University of La Rioja, Spain
Fabrizio Santoro (2000)	University of Siena, Italy
Ronald Pascual (2000-2002)	Philippines
Jan (Gershom) Martin (2007-8)	Weizmann Institute, Israel
Joonkyun Jang (2009-2010)	Pusan, S. Korea
Per-Olaf Astrand (2009-2010)	Trondheim, Norway
Cecilia Noguez 2010-2011	UNAM, Mexico City, Mexico
Raul Esquivel Sirvent 2010-2011	UNAM, Mexico City, Mexico
Kok-Hwa Lim 2011-2012	NTU, Singapore
Rong Huang 2012-4	Xiamen, China
Yen-Hsun Su 2012	National Cheng Kung University, Taiwan
Xiaoming Liu 2015-6	Tsing-hua University
Igor Tsukerman 2017	University of Akron
Lu Wang 2019-2021	China University of Petroleum-Beijing
Tomekia Simeon 2021	Dillard University
Naciye DURMUS ISLEYEN 2021-22	Istanbul University

General Chemistry Super TA's:
Margaret Welk 2000-1
Geoff Hutchinson 2001-2
Catherine Schmidt 2003
Michael Irwin 2004-5
Mario Apodaca 2006-7
Cecelia Gondek 2008
Felix Amoankona-Diawuo 2008-9
Dan Fowler 2010-1
Lam-kiu Fong 2012-3
Kacper Skakuh 2014-5
Rohit Raghavendra Murthy 2016-7
Haley Palm 2017-8
Mark Taylor 2018-9
Andrew Salij 2019-20
Sangmin Park 2021

UNIVERSITY AND COLLEGE COMMITTEES:

University Grants Committee, 1979-1982
Edunet Committee, 1979-1981
University Appeals Committee, 1980-1983
Computer Advisory Committee, 1980-1983
Computer Policy Advisory Committee, 1983-1984
Ph.D. Examining Committees - 4-6 per year
Northwestern University Network Task Force, 1985-1986
Joint Committee on the Programs in Computer Studies and computing in the Arts and Sciences, 1986
Program Review Committee for Math Department, 1986-87, 1995
Graduate School Fellowship Committee, 1986-89
Curricular Policies Committee, 1989-92
General Faculty Committee, 1991-1994
(1) Subcommittee on Benefits, 1991-1994, Chair 1993-94
(2) Committee on Committees, 1991-1994, Chair 1992-93
Coordinating Council on Instructional Computing, 1993-4
High Performance Computing Committee, 1996
Research Policy Committee of GFC 1995-9
Environmental Science Program CAS, 1995-2000
Search Committee, Vice-President for Research, April-July, 1997
WCAS Committee on Senior Appointments, 2000-2003
Undergraduate Research Grants Committee 2003-2007
Machine and Electronics Shop Advisory Committee 2005-2006
University Academic Dishonesty Committee 2007
Quest allocations committee 2010-2016
Member, Materials Committee of the MRSEC 2005-2016
Member, Honorary Degree Committee, 2015-7
Member, Executive Committee of the Center of Bioinspired Energy Science (CBES) 2014-2018
Member, DOE Council on Chemical Sciences, Geosciences and Biosciences 2015-2018
Member, Executive Committee of the C-ABN Air Force Center 2015-2020
Member, Advisory Board, Center for interdisciplinary exploration and research in astrophysics (Ciera) 2010-2018
Member, Allocations Committee for Quest 2005-2016
Chair, Program Review Council 2015-2017