

Jacquelyn S. Fetrow
President and Professor of Chemistry and Biochemistry
Albright College

Curriculum Vitae

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Education

Ph.D. Biological Chemistry, December, 1986
Department of Biological Chemistry
The Pennsylvania State University College of Medicine, Hershey, PA
Loops: A Novel Class of Protein Secondary Structure
Thesis Advisor: George D. Rose

B.S. Biochemistry, May, 1982
Albright College, Reading, PA
Graduated *summa cum laude*

Professional Experience

Albright College, Reading PA

President and Professor of Chemistry and Biochemistry

June 2017-present

University of Richmond, Richmond, VA

Provost and Vice President of Academic Affairs

July 2014-December 2016

Professor of Chemistry

July 2014-May 2017

Responsibilities as Provost: Chief academic administrator for all academic matters for the University of Richmond, a university with five schools (Arts and Sciences, Business, Law, Leadership, and Professional and Continuing Studies), ~400 faculty and ~3300 full-time undergraduate and graduate students; manage the ~\$91.8M annual operating budget of the Academic Affairs Division, as well as endowment and gift accounts; oversee Richmond's Bonner Center of Civic Engagement (engage.richmond.edu), Center for International Education (international.richmond.edu), Registrar (registrar.richmond.edu), Office of Institutional Effectiveness (ifx.richmond.edu), as well as other programs and staff; partner with VP of Student Development and units within the Student Development Division to develop activities and events that link student activities and academics; directly manage an office staff of four people.

Accomplishments as Provost: Served as senior leader during a presidential transition; worked with faculty, administrators and trustees to design and implement Faculty Senate as a new form of shared governance structure; worked with the Dean of Arts and Sciences to expand and support the Humanities Initiative and to institutionalize Richmond's programs in interdisciplinary science; serve on the president's Strategic Planning Steering Committee; led presidentially-appointment committee to understand diversity and inclusivity at the University of Richmond, which recommendations were presented to the Strategic Planning Steering Committee; currently leading development of the Quality Enhancement Plan (QEP) for ten-year SACSCOC reaffirmation; through development, implementation, and support of Faculty Learning Communities, Faculty Dialogs, and Faculty Lunch Retreat, provided a foundational input for both the SACSCOC ten-year reaffirmation and the academic components of strategic planning; actively support faculty and staff professional and leadership development by facilitating participation in nationally recognized institutes and programs and developing and supporting internal programs appropriate to University of Richmond faculty and staff; led collaborative search processes leading to successful recruitment of the Dean of International Education, Dean of the School of Professional and Continuing Studies, and Dean of Arts and Sciences.

Wake Forest University, Winston-Salem, NC

Dean, Wake Forest College

January 2009-June 2014

Reynolds Professor of Computational Biophysics

August 2003-June 2014

Director, Graduate Track in Structural and Computational Biophysics

2005-2008

Concurrent appointments:

Affiliated Faculty, Wake Forest School of Medicine Cancer Center

Affiliated Faculty, Wake Forest School of Medicine, Department of Biochemistry

Affiliated Faculty, Wake Forest School of Medicine, Program in Molecular Medicine

Affiliated Faculty, Wake Forest School of Medicine, Program in Molecular Genetics and Genomics

Affiliated Faculty, School of Biomedical Engineering and Science (SBES, joint program between Virginia Tech and Wake Forest University)

Responsibilities as College Dean: Chief administrator for all academic matters for Wake Forest College, the liberal arts college of Wake Forest University, a college of ~4800 undergraduate students, ~400 faculty, 25 academic departments

and multiple interdisciplinary academic programs; manage the ~\$60M annual operating budget of the College, as well as endowment and gift accounts; serve as the chair of the College faculty and its faculty meetings; support department chairs and program directors as they work to strengthen their academic programs; oversee Wake Forest's summer school (college.wfu.edu/summer/), the Office of Academic Advising (advising.wfu.edu/), Wake Forest Scholars (college.wfu.edu/scholars/) and Magnolia Scholars (first generation scholars programs; college.wfu.edu/magnolia/), as well as other programs and staff, as described on the College web site (college.wfu.edu); partner with Student Life to develop activities and events that link student activities and academics; directly manage an office staff of ten people; oversee the work and lead college-wide projects for a team of 13 instructional technologists; direct and facilitate communication with the College Board of Visitors (a volunteer advisory board); lead planning and implementation for a \$350M investment in College faculty support, student scholarships, and facility improvements as part of the University's ongoing capital campaign.

Accomplishments as College Dean: Led faculty, advancement and senior administrators through development of the plan for the College's \$350M capital campaign and ongoing leadership to successfully implement that strategy; envisioned and established the Office of Academic Advising which coordinates and supports the faculty's advising activities; oversaw the early development of the URECA (undergraduate research and creative activities) Center (college.wfu.edu/ureca/), led by an associate dean and team of faculty leaders to promote faculty-student interaction and student-initiated scholarly and creative work; catalyzed the development of the Magnolia Scholars, First in the Forest, and Summer Bridge Programs to support the success of first generation and at-risk students; led initiative to revamp the web presence for the College and all College academic programs to better illustrate the academic quality of the College; redesigned the organization of the College budget, to better understand and strategically allocate funds towards academic and College priorities; realigned the college administrative staff, to better support the College's constituencies.

Responsibilities and accomplishments as faculty member: Developed and taught courses in bioinformatics, computational systems biology, molecular biophysics, and introductory physics; won interdisciplinary teaching award (with colleague in computer science) for development of innovative teaching of multidisciplinary bioinformatics course; led interdisciplinary research teams funded by the National Institutes of Health and National Science Foundation; involve undergraduate and graduate students in independent research projects and mentor them through this work; founded and continue to participate in an interdisciplinary, weekly research meeting, including faculty, research staff and graduate and undergraduate students from multiple departments of both the College and the Medical School; led the College's 2009 strategic planning committee, ultimately producing the comprehensive strategic plan for the College.

GeneFormatics, Inc., San Diego, CA

Co-founder, Chief Scientific Officer and Director

May 1999-January, 2003

Responsibilities: Oversaw all scientific research and development operations of Company, including approximately 25 people working in both laboratory and computational facilities; together with intellectual property attorneys, developed Company IP strategy, prepared patent applications, and responded to US PTO office actions; developed and managed budgets of over \$5 million per year for scientific departments; as member of executive management team, developed Company's scientific and business strategy and implemented the operational details of that strategy; presented at and contributed to quarterly Board of Directors meetings; coordinated with Chief Business Officer on business development activities, including proposal development, budget planning, contract approval, partner meetings and presentations, and contract fulfillment; managed Company's Scientific Advisory Board and planned and directed semi-annual meetings; directly reported to CEO.

Accomplishments: Developed initial business plan for Company and recruited CEO and CFO; as part of the executive management team, initiated Company in October, 1998, and played key role in building to 65-person organization with two US locations, a field office in Europe and distributor in Asia; together with CEO and CFO successfully raised three funding rounds totaling \$50 million; oversaw installation of Company's initial 200-processor Linux cluster; proposed and participated in implementation of Company's acquisition of Structure Function Genomics LLC in 2000; planned and oversaw build-out of experimental facility for molecular biology, protein biochemistry, and NMR spectroscopy applications for lead discovery; actively involved in re-structuring and merger and acquisition process in 2002 to transform Company business model from a bioinformatics platform to lead discovery.

The Scripps Research Institute, La Jolla, CA

Associate Professor, Department of Molecular Biology

April 1998-May 1999

Visiting Scientist, Department of Molecular Biology (laboratory of Jeffrey Skolnick)

January-December 1997

Accomplishments: Co-developed novel computational method for structure-based function analysis of proteins, the technology on which GeneFormatics was founded; received a patent for this invention.

The University at Albany, SUNY, Albany, NY

Associate Professor (with tenure), Department of Biological Sciences

September 1995-April 1998

Assistant Professor, Department of Biological Sciences

January 1990-August 1995

Concurrent/joint appointments:

Associate Professor, Department of Chemistry	September 1996-April 1998
Associate Professor, Department of Biomedical Sciences, School of Public Health	December 1996-April 1998
Assistant Professor, Department of Biomedical Science, School of Public Health	July 1994-December 1996

Research accomplishments: Received research grants from the National Institutes of Health, National Science Foundation, American Chemical Society, and SUNY Research Foundation; oversaw active research program in structure and function analysis of yeast iso-1-cytochrome *c*, including both computational and experimental components; collaborated with professor in computer science department on funded research program aimed at computational analysis of protein secondary structure; oversaw MS or PhD research of three students (details on grants and publications provided on subsequent pages).

Teaching accomplishments: Developed and taught undergraduate courses in Biochemistry, section on structural biology in Introductory Biology; co-developed and co-taught one-semester graduate course in Structural Biology for Computer Scientists and freshman seminar course on Biology and Society; developed and taught graduate course and laboratory in Protein Structure and Function; co-developed and co-taught graduate course in Biophysical Techniques; oversaw research of approximately twenty undergraduate students, including three who won top research honors as seniors (Glenn Bumpus Award); received both SUNY-wide and campus-wide Excellence in Teaching Awards and Golden Key honorary membership (student nomination) for accomplishments in teaching (details on teaching assignments provided on subsequent pages).

University service accomplishments: Developed Interdisciplinary Program in Biochemistry and Molecular Biology and oversaw successful administrative approval and implementation of this new major; served as Director of this program from December 1990 to April 1998, during which 5-20 students annually graduated in this major; served on numerous department and university committees, including three search committees (other professional service details provided on subsequent pages).

The Whitehead Institute for Biomedical Research, MIT, Cambridge, MA

Postdoctoral Fellow (Advisor: Peter S. Kim)	January 1988-January 1990
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Accomplishments: Continued NIH NRSA Postdoctoral Fellowship; used techniques of protein purification, peptide synthesis and purification, and CD spectroscopy to analyze the structural conformations of loop peptides in solution.

The University of Rochester, Rochester, NY

Postdoctoral Fellow, Department of Biochemistry (Advisor: Fred Sherman)	December 1986-December 1987
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Accomplishments: Applied for and received NIH NRSA Postdoctoral Fellowship; utilized techniques of yeast genetics and general molecular biology to study the *in vivo* and *in vitro* structure and function of the protein cytochrome *c* following mutations of amino acid residues in its protein loops

Awards and Honors

Alumni Fellow, Pennsylvania State University College of Medicine, 2015
 Distinguished Alumnus/a Award, Albright College, October 2010
 Honorary member, Phi Beta Kappa, Wake Forest University, April 2009
 Teaching Innovation Award (for Bioinformatics course, developed with David John), Center for Teaching and Learning, Wake Forest University, February 2006
 Young Alumnus/a Achievement Award, Albright College, May 1997
 Chancellor's Award for Excellence in Teaching, University at Albany, Spring, 1995 (A SUNY-wide award)
 President's Award for Excellence in Teaching, University at Albany, Spring, 1995
 Honorary member of Golden Key Honor Society: Nominated in Spring, 1994 by undergraduate students at the University at Albany in recognition of commitment to undergraduate teaching and mentoring
 Member, Jacob Albright Society of Scholars (for high academic achievement), Albright College, May 1982

Professional Service and Activities

Board of Directors of the Association of Independent Colleges and Universities in PA	July 2020-present
Committee on Accountability, National Association of Independent Colleges and Universities	July 2020-present
Board of Directors, Partners for Campus-Community Engagement (formerly NY PA Campus Compact)	August 2019 – present

- Board of Directors and member of Quality Committee, Reading Hospital** July 2019 - present
- Penn State College of Medicine, Center for Medical Innovation External Advisory Board** January 2018 - present
- Board of Directors, Quantum Bio, Inc., State College, PA** August 2003-present
Responsibilities: Participate in monthly Board meetings with management and other Board members
- Associate Editor for Professional Journal, PLoS Computational Biology** 2013-present
Responsibilities: Serve as editorial manager for submitted manuscripts; serve as reviewer when requested
- Editorial Board Service for Professional Journal, Proteins: Structure Function and Genetics** 1997-present
Responsibilities: Serve as editorial manager for submitted manuscripts; serve as reviewer when requested
- Conrad Weiser Science Research Institute Advisory Board Member** January 2018-February 2020
- Albright College Board of Trustees, Albright College, Reading PA** January 2015-July 2016
Responsibilities: Vice Chair, Academic Committee; Vice Chair, Honorary Degree Committee; Provost Search Committee (2015)
- Executive Council, elected Secretary and Treasurer (two terms), The Protein Society** July 2011-July 2017
- Executive Council (Awards Committee Chair), The Protein Society** July 2008-July 2011
- NSF BIO Directorate Advisory Council** 2009-2012
- Alumni Board of Directors, Pennsylvania State University College of Medicine** September 2008-2009
- Scientific Advisory Board, Bent Creek Institute, University of North Carolina, Asheville** September 2008-2010
- Scientific Advisory Board, UCSF/Wisconsin Program Project on Enzyme Function and Mechanism** August 2004-2009
- Pennsylvania State University Alumni Board Nominating Committee, Grad School At-large Rep** 2005-2006
- Board of Advisors, Aqualutions, Winston-Salem, NC** January 2006-2008
- President's National Advisory Council, Albright College, Reading, PA** October 2002
Responsibilities: Participate in periodic meetings with president of Albright College regarding strategy and future of Albright College, a small, liberal arts college in Pennsylvania
- Board of Directors and Executive Committee, Central PA Life Sciences Greenhouse** February 2002-August 2003
Responsibilities: Participate in quarterly Board of Director meetings and more frequent Executive Committee meetings; participate in strategic and operational decisions of Greenhouse; interview and participate in decisions on key executive hires
- Scientific Advisory Board, InforMax, Inc.** April 1998-April 2000
- Scientific Reviewer for Textbook Revision, Biochemistry, Voet and Voet, Wiley and Sons** 1993-1994; 1996

Conference Review and Organization

- Proteins Gordon Research Conference, Co-chair 2009
- Proteins Gordon Research Conference, Co-vice-chair 2007
- Intelligent Systems for Molecular Biology/European Conf Comput. Biology International Conf Program committee 2007-2008
- Highlights program reviewer 2008
- Association for Computing Machinery Southeast (ACM-SE) Conference Special session on Bioinformatics, chair (with E. Allen) 2007
- Intelligent Systems for Molecular Biology Annual Conferences. Program committee 1995-2000
- Albany Conferences on Computational Biology. Organization and program committees 1992, 1994, 1996

Peer-review Service for Professional Journals

- Biochemistry*
- Journal of Molecular Biology*
- Protein Science*
- Journal of Biological Chemistry*
- Biophysical Journal*
- IEEE Transactions in Biomedical Engineering*
- Archives of Biochemistry and Biophysics*
- Biochemistry Journal*

Grant Study Section Service

- National Institutes of Health** Protein Structure Initiative (PSI:Biological), Midterm review and site visits March-June 2013
- ZRG1 BCMB-S (40) P - PAR10-225: Program Project: Center for Macromolecular Modeling and Bioinformatics Study Section March 2012
- Charter Member, NIH MSF-D Study Section 2007-2011

	IMST-14 NIH Study Panel, Chair	2010-2011
	ZGM1 GDB-7 (EU) 1 NIH Eureka Round 1 Study Panel	March 2008
	ZGM1 CBB-3 (HM) High Resolution Protein Modeling Special Emphasis Panel	April 20, 2007
	ZRG1 F04B-N (20) (L) NIH Postdoctoral Fellowship Special emphasis Panel	November 13-14, 2006
	ZRG1 BCMB-Q (40) High Performance Computing	Dec 5-7, 2005
	BCMB-Q Computational Biophysics Special Emphasis Panel	February 28 and June 9, 2005; Feb 13, 2006
	BCMB-P Program Project Special Emphasis Panel	Feb. 4 and Dec 5, 2005
	BPC-Q (01 and 02) Computational Biophysics Special Emphasis Panel and Special Study Section	October 25, 2002; December 2, 2004
	BDMA Biodata Management and Analysis Study Section	June 28-29 2004
	Computational Biology Special Study Section	March 15-16 2003
	Computational Biology Special Study Section	November 3-4 2003
	Structural Genomics Program Project Study Section	January 2003
	Molecular and Cellular Biophysics Study Section	October 17-19 2001
	Structural Genomics Study Section	June 27-28 2001
	Structural Genomics Special Study Panel	June 27-29 2000
	SBIR-Chemistry and Related Sciences Special Emphasis Panel	Nov. 19-20 1998
	Multidisciplinary Special Emphasis Panel on Special Instrumentation	Nov. 11 1995
NASA	Cell and Molecular Biology Special Review	November 2004
	Cell and Molecular Biology Panel	September 17-18 2003
	Cell and Molecular Biology Panel	April 5-6 2001
	Cell and Molecular Biology Flight and Ground Panel	February 15-18 2000
	Cell and Molecular Biology Ground Panel	February 16-19 1999
National Science Foundation	NSF Merit Review Process Advisory Council	2011-2012
	NSF Graduate Research Fellowship Panel	Feb 6-8, 2006
	Molecular and Cellular Biophysics ad hoc reviewer	2005, 2006
	IGERT Panel Research Training	Oct. 6-7 1997

Department, College and University Service

University of Richmond

Partner with adviser of Women in Math and Science Living Learning Community 2015-2016

Wake Forest University

Faculty Fellow for Babcock First Year Residence Hall 2013-2014

IT Executive Committee (ITEC), chair 2011-2014

Search Committee, Vice President Student Life, member Fall 2012

Physics Department Website Committee, chair 2006-2008

Search Committee, Business Schools Dean, member 2007-2008

Structural and Computational Biophysics Graduate Certificate Program, Director 2004-2008

Physics Department Graduate Programs Committee, member 2004-2008

Computer Science Department Graduate Programs Committee, member 2004-2008

DEAC Linux Cluster RepCom committee, group leader 2004-2008

Computer Science Department Program Review Committee, member 2007

College Strategic Planning Committee, member Fall 2006 and chair Spring 2007 2006-2007

South Africa Service Trip, faculty advisor 2006-Jan 2007

Reynolds/Carswell Scholarship Committee, member 2006-2007

Outward Bound Pre-Orientation Trip, faculty participant August 2006

Pro Humanitate Service Learning Project, co-advisor with Kim Shapiro (Tanzania Africa)	2006
Interdisciplinary Science Building Planning Committee, member	2005-2006
Physics Department Career Advising Committee, member	2004-2005
Major Advising (Computer Science Department)	2005
Biophysics Faculty Search Committee (Physics Department)	2004

Other Professional and Community Service

Wake Forest University

Engineers Week Speaker, Hanes Magnet School	February 2009
Walkertown Elementary Science Fair Judge	Jan 2008
SCB Discussion Group: Organized the Structural and Computational Biophysics Discussion Group; over 30 attendees from Physics, Computer Science, Chemistry, and Biochemistry departments; generally organized three meetings per semester	2004-2006
SCIMAX Career Speaker: NSF-funded event for local school students (Angela King, Director)	June 2005, 2006
Triad Biosummer program for middle school students, speaker, Atkins Biotechnology School	June 2006
Science Behind the Technology Speaker: workshop for middle school teachers (R. Alexander, Director)	July 2006, 2008
Career Day 2005 Speaker at Bishop McGuinness High School	November 30, 2005
Awards committee chairperson, Upstate New York Junior Science and Humanities Research Symposium	April 1994
Presentation on computers and biology to high school students, Upstate New York Junior Science and Humanities Research Symposium	April 1992, 1993, 1995, 1996
Educator and counselor, Camp Tegawitha Outdoor Educational Program for sixth graders (Camp Hill School District)	each June 1985-1994

Professional Memberships

American Association for the Advancement of Science	The Protein Society
The Biophysical Society	International Society of Computational Biology

Patents and Patent Applications

- Method for detecting compounds containing sulfenic acid using a 1,3-cyclohexanedione-based probe. Patent #8,841,132. Issued September 23, 2014. Inventors: Poole, L.B., King, S.B., and Fetrow, J.S.
- Method of synthesizing 1,3-cyclohexanedione derived reagents useful for detection or isolation of sulfenic acid-containing compounds. Patent# 8,486,642. Issued July 16, 2013. Inventors: Poole, L.B., King, S.B., and Fetrow, J.S.
- Method for Detecting Target Compounds Containing Sulfenic Acids Using New Reagents. Patent # 7,803,630, issued September 28, 2007. Inventors: Poole, L.B., King, S.B., and Fetrow, J.S.
- Sulfenic Acid-Reactive Compounds And Their Methods Of Synthesis. Patent # 7,294,748, issued November 13, 2007. Inventors: Poole, L.B., King, S.B., and Fetrow, J.S.
- Methods and Systems for Predicting Protein Function. Patent #6,631,332, issued October 7, 2003. Inventors: Skolnick, J. and Fetrow, J.S.
- Functional Site Profiles for Proteins and Methods of Making and Using Same. Patent application #US027/23166 *submitted, but not pursued*. Inventors: Fetrow, J.S., Baxter, S.M., Hoffman, B.T., and Cammer, S.A.

Grant Awards Funded

- WFU CPG Application (J.S. Fetrow, K. Nelson, P. Babbitt, T. Ferrin)* Automated pipeline for prediction and curation of enzyme molecular function. \$18,500 total costs. July 1, 2013 to June 30, 2014.
- NIH 1 R01 CA136810 (C. Furdui, PI; J. Fetrow, co-I)* "Analysis of Redox Modulated Signaling Networks in Response to Ionizing Radiation" \$289,617 (total WFU costs) 7/1/09 – 06/30/13
- NSF Arabidopsis 2010 Grant (Gloria Muday, PI; J. Fetrow, B. Winkel (Va Tech), R. Helm (Va Tech), Co-Is)* "Collaborative Research: Modeling Biological Networks in Arabidopsis through Integration of Genomic, Proteomic, and Metabolomic Data" \$1,109,991 (total WFU 4 year budget) 05/01/2009 to 04/31/2013

- *NIH IR21 AI082474 (J.S. Fetrow, E.M. Hiltbold, multi-investigator)* “Computational Modeling of Dendritic Cell Maturation”, \$397,545 (requested total costs) 06/01/2009 to 05/31/2011
- *Arthritis Foundation Research Grant (PI: R. Loeser, co-Is: J. Fetrow, C. Ferguson, M. Callahan, C. Carlson (Univ Minn))* “Systems Biology Approach to the Discovery of Novel Pathways in Osteoarthritis” \$180,000 (total budget) 09/01/2008 to 08/30/2010
- *Translational Sciences Institute Team Development Award (PI: R. Loeser, co-Is: J. Fetrow, I. Leng C. Ferguson, M. Callahan, C. Carlson (Univ Minn))* “Systems Biology Approach to the Discovery of Novel Pathways in Osteoarthritis” \$50,000 (total budget) 09/01/2008 to 08/30/2010
- *NIH/NIAP30 AG021332 Kritchevsky (PI)* “WFU Older Americans Independence Center, Molecular Sciences Resource Center” Molecular Sciences Core \$38,327 (total budget to JSF) 08/01/2008-07/30/2010
- *NIH/NIAMS, RO1 AR049003 (PI: R. Loeser, PI; Poole & Furdui, Co-Is; Collaborators: J. Fetrow)* “Integrin function in cartilage”; \$41,360 total budget to JSF; 08/01/2007-07/31/2012.
- *WFU Cross-campus Award (PIs: J. Fetrow and B. Hiltbold; WFU Reynolda Campus and School of Medicine).* “Modeling Networks of Dendritic Cell Maturation Induced by Bacteria”, \$20,000 total costs, May 15, 2006-May 15, 2007.
- *NSF Award MCB-0517343 (PI: J. Fetrow, Co-PIs, F. Salsbury and, L. Poole; WFU Reynolda Campus and School of Medicine).* “Integrated Process for Functional Site Feature Analysis”, \$120,000 annual direct costs, August 1, 2005-July 31, 2008.
- *NIH NIGMS RO1 GM075304 (PI: J. Fetrow, Co-PIs, D. John, S. Thomas, E. Allen, L. Poole, and L. Daniel; WFU Reynolda Campus and School of Medicine).* “Algebraic and Statistical Models of Redox Signaling”, \$220,000 annual direct costs, April 1, 2005-March 30, 2009.
- *NIH NCI R21 CA112145 (PI:L. Poole, Co-PIs, J. Fetrow, B. King, :L. Daniel; WFU Reynolda Campus and School of Medicine).* “Profiling of Redox-Sensitive Signaling Proteins”, \$100,000 annual direct costs, May 1, 2005-April 30, 2007.
- *WFU Cross-campus Award (PIs: J. Fetrow and J. Grayson; WFU Reynolda Campus and School of Medicine).* “Computational Modeling of Reactive Oxygen Intermediate Signaling in CD8+ T-cells”, \$15,000 total costs, May 15, 2005-May 15, 2006.
- *NSF Award MCB-9817598 (PI: C. Scholes, SUNY Albany).* “Site Specific Probing of Folding and Unfolding of Yeast Iso-1-Cytochrome *c* by Dielectric Resonator-Based Flow and Stopped-Flow EPR”, \$34,836, March 1, 1999-February 28, 2002.
- *American Chemical Society PRF Award.* “Application of Stopped Flow EPR,” \$49,938 total direct costs. June 1, 1995–August 31, 1998.
- *NIH FIRST Award.* “Structural Modularity and Protein Function in Cytochrome *c*,” five years, \$350,000 total direct costs. April 1, 1991–March 31, 1996.
- *NIH FIRST Award, Supplement for Undergraduate Students.* Summer, 1993.
- *Faculty Research Award, University at Albany, SUNY.* “A Preliminary Test of the Use of Electron Paramagnetic Resonance Spectroscopy to Probe Loops Structure in Proteins” \$9000, April, 1994–April, 1995.
- *NSF Award.* “Advanced Computational Methods for Protein Secondary and Tertiary Structure Prediction,” two years, \$60,000 total costs. January 1, 1993–December 31, 1994.
- *New Faculty Development Award, NYS-UUP.* Travel money to present paper at Protein Society meeting, San Diego, CA, \$650, August, 1993.
- *Peptide Synthesis and Conformational Analysis Facility.* Award from the Vice President for Research and Graduate Education to purchase a peptide synthesizer and circular dichroism spectrometer for use by faculty in the Department of Biological Sciences and other departments at the University at Albany. June, 1993.
- *Faculty Research Award, University at Albany, SUNY.* “A Test of the Role that Loops and Turns Play in the Protein Folding Process” \$3000, April, 1992–April, 1993.
- *Research Foundation Conference Support and Development.* “Albany Conference on Computational Biology: Patterns of Biological Organization,” \$2500, awarded May 1992.

- *Faculty Research Award*, University at Albany, SUNY. “Expression, Purification, and Mutagenesis of a Small Subdomain of Pancreatic Trypsin Inhibitor,” \$3500, April, 1991–April, 1992.
- *New Faculty Development Award*, NYS-UUP. “Protein Structural Modularity in Yeast Cytochrome *c*,” \$750, January, 1991–August, 1991.
- *Faculty Research Award*, University at Albany, SUNY. “Development of Directed Random Mutagenesis in Yeast Iso-1-cytochrome *c*,” \$3500, April, 1990–April, 1991.
- *NRSA Postdoctoral Fellowship* (NIH). “A Modular Exchange Experiment for the Cytochromes *c*,” January, 1987–January, 1990.

Public Engagement and Higher Education Administration-related Publications and Presentations

- Women in Leadership in Higher Education, Panel member (with Jamelle Wilson, Dee Hardy, LaRee Sugg). February 2017.
- Challenges and Opportunities in the Development and Commercialization of Medical Innovations. A panel discussion at the 2016 Penn State Hershey College of Medicine Innovation Awards Dinner. Panel member (with Nishit Trivedi, Andrea Lauber, Anthony P. Bihl). October 2016.
- Liberal education in a global society. Address to Roadmap students. University of Richmond. August 2016.
- “Storytelling and the art of communication in biomedical science.” Convocation address. Penn State College of Medicine, Hershey PA. Sept. 2015.
- “Plugging the Leaky Pipeline – From Problem to Solutions.” Panel discussant with Julie Elberfeld (Divisional CIO, Commercial Banking at Capital One) and Dr. Ellen Stofan (NASA Chief Scientist). 2015 NCGS Conference "From STEM to STEAM: Girls' Schools Leading the Way" St. Catherine's School in Richmond, Virginia. June 24, 2015.
- “The Brand of You” Panel Discussion, Women and Leadership Program, Westhampton College Centennial Celebration November 2014
- Browne, Carole and Fetrow, Jacquelyn. Online and face-to-face education. In “Higher Ed Beta: MOOCS and Beyond”, Inside Higher Ed. March 17, 2014.
- Chan, Andrew and Fetrow, JS. Six tips for liberal arts colleges to produce employable grads. Op-Ed in The Washington Post. April 1, 2012.

Professional Publications

Invited Articles, Reviews, and other non-peer-reviewed publications

1. Fetrow JS, Babbitt PC. New computational approaches to understanding molecular protein function. *PLoS Comput Biol*. 2018 Apr 5;14(4):e1005756. doi: 10.1371/journal.pcbi.1005756. eCollection 2018 Apr. No abstract available. PMID: 29621256
2. Fetrow J.S. Protein Function Annotation: The next frontier in molecular biology. *Protein Science*. (Virtual Issue) Feb 2012 (Edited and composed introduction for Virtual Issue).
3. Baxter S.M., Day S.W., Fetrow J.S., Reisinger S.J. Scientific software development is not an oxymoron. *PLoS Comput Biol*. 2006 Sep 8;2(9):e87.
4. Fetrow, J. S. Active site profiling to identify protein functional sites in sequences and structures. *Current Protocols in Bioinformatics*. (A.D. Baxevanis (chief editor); G.A. Petsko; L.D. Stein; G.D. Stormo; J.R. Yates III (guest editor); D.B. Davison (advisory editor); John Wiley and Sons, Inc. Unit 8.10, June 2006.
5. Creamer, T.P. and Fetrow, J.S. Rose is a Rose is a Rose. Especially if you're a George. A Perspectives article in *Proteins Struct. Funct. Bioinformatics*. 2006 May 1;63(2):268-72.
6. Baxter, S., Knutson, S. and Fetrow, J.S. The importance of structure-based function annotation to drug discovery. *Protein Structure Determination, Analysis and Modeling for Drug Discovery*. D. I. Chasman, Ed., Dekker Publishing. 2003. p. 369-387.
7. Fetrow, J., Giammona, D.A., Kolinski, A., Skolnick, J. The protein folding problem, a biophysical enigma. *Curr Pharma Biotech*. 2002;3(4):329-47.
8. Betz, S., Baxter, S., Fetrow, J.S. Function first: a powerful approach to post-genomic drug discovery. *Drug Discov Today*. 2002;7(16):865-871.

9. Baxter, S.M., Fetrow, J.S. Sequence- and structure-based protein function prediction from genomic information. *Curr Opin Drug Discov Devel.* 2001 May;4(3):291-295.
10. Skolnick, J., Fetrow, J.S., Kolinski, A. Structural genomics and its importance for gene function analysis. *Nature Biotechnology.* 2000 Mar;18(3):283-287.
11. Skolnick, J. and Fetrow, J.S. From genes to structure: novel applications of computational approaches in the genomic era. *Trends in Biotech.* 2000 Jan;18(1):34-39.
12. Rudd, P.M., Wormald, M.R., Stanfield, R. Huang, M., Mattson, N., Speir, J.A., Di Gennaro, J.A., Fetrow, J.S., Dwek, R.A., and Wilson, I.A. Roles for glycosylation of cell surface receptors involved in cellular immune recognition. *J. Mol. Biol.* 1999 Oct 22;293(2):351-366.
13. Fetrow, J.S. Omega Loops: Nonregular secondary structures significant in protein function and stability. *FASEB J.* 1995 Jun;9(9):708-717.
14. Zhang, X., Fetrow, J.S., and Berg, G. Design of an Auto-associative Neural Network with Hidden Layer Activations that were used to Reclassify Local Protein Structures. (1994) *Advances in Protein Chemistry V.* J. Crabb, ed. p. 397-404.
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Peer-Reviewed Publications

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Invited Conference Talks

- Midsouth Computational Biology and Bioinformatics Society (MCBIOS) Annual Meeting, Mar 2015, Little Rock, AR
- American Chemical Society National Meeting, Aug 2008, Philadelphia PA
- Translational Science Institute, Synergy Symposium on Inflammation and immunity, speaker and break-out session mediator, May 2008
- Thiol-based Redox Regulation Gordon Research Conference, speaker and session chair, Jun 18-23 2006, Biddeford ME
- 21st Annual Perspectives in Biology Symposium, Nov 11-12, 2005, Wake Forest University
- The Protein Society 19th Symposium. Systems Biology Workshop for Educators. July 30-August 3, 2005, Boston MA.
- Symposium on Computational Methods as Aids in Drug Design, April 3-6, 2005, Virginia Tech European Study Center, Riva san Vitale, Switzerland.
- National Capital Region Biomedical Engineering and Science Research (Virginia Tech), March 3-4, 2005, Bethesda, MD.
- Triangle Biophysics Symposium, Nov 3-4, 2004, *The interplay of structure, electrostatics, and conformation at peroxiredoxin functional sites*, Chapel Hill, NC.
- Institute for Pure and Applied Mathematics, Structural Proteomics Workshop, *Structure-based Analysis of Protein Function: PTPs and serine hydrolases*. May 10-14, 2004, Los Angeles, CA.
- Gordon Research Conference on Enzymes, Co-enzymes, and Metabolic Pathways, July, 2003. Kimball Union Academy, NH.
- 5th Annual San Diego Combinatorial Chemistry Symposium, *Drug Discovery in the Post-genomic Era: Integration of Structural and Chemical Proteomics*, August 23, 2002. San Diego, CA.
- AAPS National Biotechnology Conference, *Drug Discovery in the Post-Genomic Era: Proteins Functions, Functional Site Structure and Lead Identification*, June 26, 2002. San Diego, CA.
- The Proteomics Congress 2002, Creating Proteomics Business, *Function First: In Silico Proteomics and Drug Discovery*, May 15, 2002. London, England.
- ACS 222nd National Meeting and Exposition, *Which Sequence Should I Target? The Advantages of an Integrated Platform in Structural Proteomics*, August 27, 2001. Chicago, IL.
- IBC's Drug Discovery Technology 20001, *Which Sequence Should I Target? The Advantages of a Function-First Approach in Structural Proteomics*, August 15, 2001. Boston, MA.
- Gordon Research Conference in Combinatorial Chemistry, *Protein Structures and Structural Motifs: Linking Drug Discovery to Genome Sequences*, July 18, 2001. Tilton, NH.
- 82nd Annual Meeting of the AAAS Pacific Division, *Which Sequence Should I Target? The Advantages of an Integrated Platform in Structural Proteomics*, June 18, 2001. Irvine, CA.

- World Molecular Engineering Network Annual Conference, *What Sequences Should I Target? The Advantages of an Integrated Platform in Structural Proteomics*. May 7, 2001. San Jose de Cabo, Mexico.
- Genome Japan Conference, *Which Sequence Should I Target? Use of Structure to Find the Important Needle in the Haystack of Protein Sequences*, March 27-28, 2001. Tokyo, Japan.
- Genome Triconference 2001, *Which Sequence Should I Target? The Advantages of an Integrated Platform in Structural Proteomics*. March 4, 2001. San Francisco, CA.
- Infotech Pharma 2001, *Which Sequence Should I Target?* February 8, 2001. London, England.
- Computational Drug Design Conference, *Which Sequence Should I Target? Use of Structure to Find the Important Needle in the Haystack of Protein Sequences*. July 19-21, 2000. Washington, DC.
- Functional Genomics Seminar Series, *Use of the Sequence-to-Structure-to-Function Model to Uncover the Important Needles in the Growing Haystack of Protein Sequences*. June 1 2000. Cambridge, MA.
- Charleston Conference, 2000, *Use of Structure to find that One Needle in the Haystack of Protein Sequences*. Feb. 28-Mar 3, 2000. Charleston, SC.
- CHI Conference on Protein Structure, *Use of Structure to find that One Needle in the Haystack of Protein Sequences*. Nov. 15-16, 1999, Washington DC.
- TIGR's Eleventh International Genome Sequencing and Analysis Conference, *Function Prediction Using The Sequence-To-Structure-To-Function Paradigm: Analysis Of Disulfide Oxidoreductase Activity In Eight Genomes*. Sept. 18-21, 1999. Miami Beach, FL.
- Second Annual Conference on Computational Genomics, *Function Prediction Using The Sequence-To-Structure-To-Function Paradigm: Analysis Of Disulfide Oxidoreductase Activity In Eight Genomes*. Nov. 1-3, 1998. Reston VA.
- Science Teachers Association of New York State. Eastern Section Annual Conference, *Molecular Biology and Computers*. Oct. 21, 1996. Siena College, Loudonville, NY.
- Institute for Mathematics and Its Applications, Workshop on Molecular Biology, *Use of an Autoassociative Neural Network to Discover Novel Local Structural Categories in Globular Proteins*. July 18-22, 1994. University of Minnesota, Minneapolis, MN.
- Gordon Research Conference on Biopolymers, *Novel Categories and Patterns of Local Protein Structure Discovered using an Artificial Neural Network*. June 26-July 1, 1994. Salve Regina College, Newport, RI.
- Upstate New York Junior Science and Humanities Research Symposium, *Local Categories of Protein Structure Discovered Using an Artificial Neural Network*. April, 1994. Keynote speaker. Albany, NY.
- The Second Albany Conference on Computational Biology: Patterns of Biological Organization, Session chairperson for session entitled "Macromolecular Function." October 8-12, 1992, Rensselaerville, NY.
- Gordon Research Conference on Proteins, Session chairperson for session entitled, "Sequence Determinants of Secondary Structure." June 17-21, 1991, Colby-Sawyer College, New London, NH.
- BioTech USA Conference, *Deletion and Replacement of Omega Loops in Iso-1-Cytochrome c from the Yeast Saccharomyces cerevisiae*. October 2-4, 1989. San Francisco, CA.
- Gordon Research Conference on Proteins, *Loops in Globular Proteins*. June 20-24, 1988. Salve Regina College, Newport, RI.

Students/trainees advised or mentored

- Postdoctoral Fellows: Castonguay, Knaggs
- Ph.D. theses mentored (Albany): Mulligan-Pullyblank, Schaak
- Ph.D. theses mentored (Wake Forest): Leuthaeuser
- M.S. theses mentored (Albany): Fumo, Farid
- M.S. theses mentored (Wake Forest): Huff, Pryor, Tan, Olex, Lopez, Fye, Sajuthi, Westwood
- Ph.D. or M.S. thesis committees (Wake Forest): Reilly, Pecorella, Baruah, Ashcraft, Murray, Paige, Brzoza, Pryor, Yuan, Bender, Liu, Flowers
- Undergraduate student thesis or research advisor (University of Richmond): Biffis, Rosen, Wairegi

- Undergraduate student thesis or research advisor (Wake Forest): Hicks, Yocum, Curry, Lemley, Ahlers, Bender, Mateus, Ward, Gottbrecht, Marcott, Nguyendac, Turner, Madalena, Shea, Kumar, Harper, Hayden (Dickinson College)
- Undergraduate student thesis or research advisor (Albany): West, Blattman, Burton, Tokar, Rais, Anderson, Altman, Edwards, Potes, Donahoe, DiGennaro, Mellender, Horner, Wiland

Courses Developed and Taught

Major Teaching Assignments

University of Richmond (2015)

FYS	First Year Seminar	Fall semester, 2015	“Well-behaved Women (Rarely) Make Scientific History” course in conjunction with Women in Math and Science living-learning community
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Wake Forest University (2003-2014)

Phy 113	Introductory Physics	Fall semester, 2005, 2007	Introductory, calculus-based physics (introduced interactive lecture demonstration method to teaching this course)
Phy 320/620	Physics of Biological Macromolecules	Fall semester, 2004, 2006 (with F. Salsbury)	Junior/senior/intro graduate level course; lectures alternate between basic physical principles and application to protein structure; reading of important papers in the field
Phy 323/623	Computational Biophysics Laboratory	Fall semester, 2004, 2006 (with F. Salsbury)	Junior/senior/intro graduate level course; laboratory accompanying Phy 320/620; students perform specific biophysical calculations on a selected protein, analyze the results and write a research paper
Csc 385/ 685; Phy 327/627; Bio 301; Bicm 715	Bioinformatics	Fall 2004, 2005 (with D. John); Spring 2004 (with J. Burg and T. Miller)	Junior/senior/intro graduate level course; lectures, laboratory and programming exercises; innovative curriculum involves communication between disciplines and project-based learning
Csc 391/691; Bio 301; Bicm 715	Computational Systems Biology	Fall 2006, 2007, 2011, 2013 (with W. Turkett)	Junior/senior/intro graduate level course; lectures, laboratory and programming exercises; innovative curriculum involves communication between disciplines and project-based learning (for Fall 2011, my contribution was limited to three lectures and contributions to development of exercises and exams)
Various departments	Undergraduate Research	Most semesters	Independent study with individual students; requires group meeting presentations, research, and writing

University at Albany (1990-1996)

Bio 365/ Chm 342	Biochemistry	Fall semester, 1990-1996	Junior/senior level course required for biology and biochemistry majors; developed and taught lectures and study sets (200-300 students/semester)
Bio 523 (Bio 610)	Protein Structure and Function	Spring semester, every other year, 1990-1996	Graduate level course; developed and taught lectures, discussion, laboratories (5-10 students/year)
Bio 111	Freshman Biology	Spring semester, 10 lectures, 1990-1996	Freshman course required for biology and biochemistry majors; developed lectures and two laboratory sections (400-500 students/year)
Fsp 100	Biology and Society	Fall semester, 1993-1995	Freshman seminar program; developed and co-taught with Professor of Philosophy (15 freshman/year)
Bio 389Z	Writing Intensive Course in Biology	Most semesters	One credit students could add to any other course; required one-on-one interaction with student and direction of writing of major research paper

Bio 399/ 499	Undergraduate Research	Every semester, every year	Undergraduate students participate in laboratory research under direction of principle investigator; oversaw research of approximately 20 undergraduates, three of whom won the Glenn Bumpus Award (highest honors for undergraduate research) and seven of whom are co-authors on scientific publications
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Minor Teaching Assignments

Wake Forest University

Bicm	Biochemistry II Intracellular Signaling The Business of Science	2005-2008	Graduate level courses; teach 1-3 lectures on computational biology, systems biology, and modeling; and the drug discovery cycle in industry
Bicm	Drug Discovery and Development	Spring 2010, 2011, 2012, 2013 (course led by R. Hantgan)	One lecture contribution to a graduate level course in drug discovery

University at Albany

Bio 610/ Bms 851/ Csi 660	Introduction to Structural Biology for Computer Scientists, Statisticians, and Physicists	1993-1994	Graduate/upper division undergraduate course to introduce structural and molecular biology to math, physics, and computer science students; developed and co-taught with three other professors
Bms 570/ Phy 570/ Chm 544	Theory and Techniques of Biophysics	1992-1995	Graduate/upper division undergraduate course in biophysical methods; developed and taught three case studies to conclude course; co-taught and developed course with other professors
Bio 497/ Bio 613R/ Csi 445/ Csi 660	Computer Applications for Laboratory Scientists	1996	Graduate/upper division undergraduate course in introductory programming and scripting; co-developed and co-taught lectures and laboratories with Professor in Computer Science