

CURRICULUM VITAE

Brian F. Volkman PhD

**Professor
Department of Biochemistry**

OFFICE ADDRESS:

8701 Watertown Plank Road

Milwaukee, WI 53226

EDUCATION:

1989 B.S., Butler University, Indianapolis, IN

1989 Chemistry, 1 semester, University of New South Wales, Sydney, Australia

1994 PhD, University of California at Berkeley, Berkeley, CA

POSTGRADUATE TRAINING AND FELLOWSHIP APPOINTMENTS:

1995 - 1997 Postdoctoral Fellow, Biochemistry, University of Wisconsin Madison, Madison, WI

1997 - 2000 Assistant Scientist, Biochemistry, National Magnetic Resonance Facility, University of Wisconsin Madison, Madison, WI

2000 Associate Scientist, Biochemistry, National Magnetic Resonance Facility, University of Wisconsin Madison, Madison, WI

FACULTY APPOINTMENTS:

2000 - 2005 Assistant Professor, Biochemistry, Medical College of Wisconsin, Milwaukee, WI

2005 - 2010 Associate Professor (tenured), Biochemistry, Medical College of Wisconsin, Milwaukee, WI

2010 - Present Professor, Biochemistry, Medical College of Wisconsin, Milwaukee, WI

RESEARCH ADMINISTRATIVE APPOINTMENTS:

2001 - Present Director, Biomolecular NMR Facility, Medical College of Wisconsin

2010 - Present Member, Cancer Center, Medical College of Wisconsin

2017 - Present Member, Center for Infectious Disease Research, Medical College of Wisconsin

2017 - Present Director, Program in Chemical Biology, Medical College of Wisconsin

2019 - Present Member, Center for Immunology, Medical College of Wisconsin

2020 - Present Co-leader, Cancer Biology Program, Cancer Center, Medical College of Wisconsin

2020 - Present Director, Structural Genomics Unit, Genomic Sciences and Precision Medicine Center, Medical College of Wisconsin

2020 - Present Chair, Idea Award Review Committee, Cancer Center, Medical College of Wisconsin

AWARDS AND HONORS:

1985 National Merit Scholarship Winner

1985 - 1989 Presidential Scholar, Butler University

1985 - 1989 Cislak Fellow, Butler University

1986 Outstanding Student in Freshman Chemistry, Butler University

1986 Butler Student Academic Grant, Holcomb Research Institute

1987 Butler Student Academic Grant, Holcomb Research Institute

1989 Sigma Xi, Butler University Chapter

1989 - 1992 Graduate Research Fellowship, U.S. Department of Education

2014 Excellence Award, Advancing a Healthier Wisconsin (AHW)

2015 Community of Innovators Award, Medical College of Wisconsin

2019 Director's Award for Promising Research, MCW Cancer Center

2020 MERIT Award, NIH/NIAID

MEMBERSHIPS IN HONORARY AND PROFESSIONAL SOCIETIES:

Biophysical Society
American Chemical Society
Protein Society

EDITORSHIPS/EDITORIAL BOARDS/JOURNAL REVIEWS:

Editorship
2011 - Present PLoS Computational Biology
2018 - Present International Journal of Molecular Sciences
Editorial Board
2001 - 2016 Protein Expression and Purification
Journal Review
Antimicrobial Agents and Chemotherapy
FEBS Letters
FEBS Journal/ European Journal of Biochemistry
Journal of Biological Chemistry
Journal of Biomolecular NMR
Journal of the American Chemical Society
Journal of Inorganic Biochemistry
Journal of Magnetic Resonance
Journal of Molecular Biology
Journal of Virology
Nature Methods
PNAS
Science
Science Signaling
Structure
Chemistry and Biology
Biopolymers
Analytical Chemistry
Nature Communications
Chembiochem
Journal of Medicinal Chemistry
ACS Chemical Biology
Biochemistry
Arthritis and Rheumatism
Frontiers in Immunology
Archives of Biochemistry and Biophysics

LOCAL/REGIONAL APPOINTED LEADERSHIP AND COMMITTEE POSITIONS:

1996 - 2006 Consulting, Spectrum Research, L.L.C., Madison, WI
2005 - 2011 Oversight Committee, Chemical Proteomics Facility at Marquette (CPFM), Department of Chemistry, Marquette University, Milwaukee, WI
2006 Session Chair, Protein Structure and Function, Great Lakes Regional American Chemical Society Meeting, Milwaukee, WI
2014 - Present Steering Committee, SE WI BIONet; A quarterly biotech networking event for southeast Wisconsin
2014 - Present President and co-founder, Protein Foundry, LLC, Milwaukee, WI
2015 - Present Scientific Advisory Board, CyteGen Corp, Shorewood, WI
2016 Local Host, 47th annual Chicago Area NMR Discussion Group, Medical College of Wisconsin, Milwaukee, WI
2019 Session Chair, Chicago Area NMR Discussion Group, UW-Madison, Madison, WI
2019 - 2020 Member, Organizing Committee, Chicago Area NMR Discussion Group
2020 - Present Chief Science Officer and co-founder, XLock Biosciences, LLC, Milwaukee, WI

NATIONAL ELECTED/APPOINTED LEADERSHIP AND COMMITTEE POSITIONS:

2001 Temporary Member, Grant Review Panel, NIH MBC-2 study section
 2003 Grant Review Panel, Wellcome Trust Research Fellowship
 2004 Temporary Member, Grant Review Panel, NIH CMI-A study section
 2005 Temporary Member, Grant Review Panel, NIH AMCB study section
 2005 Grant Review Panel, NIH NCF special study section
 2006 Temporary Member, Grant Review Panel, NIH CMI-A study section
 2006 Temporary Member, Grant Review Panel, NIH MSF-B study section
 2007 Temporary Member, Grant Review Panel, NIH AMCB study section
 2008 Temporary Member, Grant Review Panel, NIH CMI-A study section
 2008 Temporary Member, Grant Review Panel, NIH MSF-B study section
 2008 Temporary Member, Grant Review Panel, NIH AMCB study section
 2009 Temporary Member, Grant Review Panel, NIH AMCB study section
 2009 Grant Review Panel, NIH Challenge Grants
 2010 Temporary Member, Grant Review Panel, NIH AMCB study section
 2010 Grant Review Panel, NIH ZRG1 BDA-P special study section
 2010 Grant Review Panel, NIH ZRG1 BCMB-B special study section
 2011 Grant Review Panel, NIH ZRG1 BCMB-R special study section
 2011 Grant Review Panel, NIH ZRG1 IMM-N special study section
 2013 Grant Review Panel, NIH ZRG1 BCMV-H special study section
 2013 Grant Review Panel, NIH MSF-C study section
 2014 - 2018 Full Member, Grant Review Panel, NIH MSF-C study section
 2015 Chair, Grant Review Panel, NIH ZRG1 BCMB-S (40) P41 site visit review panel
 2016 Grant Review Panel, NIH ZRG1 AARR-K (92) special study section
 2020 Grant Review Panel, NIH ZRG1 F04B-T (20) special study section

RESEARCH GRANTS/AWARDS/CONTRACTS/PROJECTS:**Active****Peer Review**

Title:	Structural Basis for Chemokine Signaling
Source:	NIH Research Project Grant R01 AI058072-06
Role & Effort:	Principal Investigator
Dates:	12/01/2003 - 05/31/2025
Direct Funds:	\$805,000
Title:	Structural Analysis of the Mannose 6-Phosphate Receptors
Source:	NIH Research Project Grant R01 DK042667-13
Role & Effort:	Co-Investigator
PI:	Nancy M. Dahms, MCW Department of Biochemistry
Dates:	2005 - 2024
Direct Funds:	\$1,250,000
Title:	Sulfotyrosine-guided discovery of small molecule chemokine inhibitors
Source:	NIH Research Project Grant R01 GM097381
Role & Effort:	Principal Investigator
Dates:	03/01/2011 - 02/28/2022
Direct Funds:	\$1,250,000
Title:	Structural basis of chemokine receptor

Source: signaling in tumor progression
NCI F30CA196040 (predoctoral NRSA)
Role & Effort: Mentor
PI: AB Kleist
Dates: 2016 - 2021

Title: Mechanism behind
CCL21/CCR7-mediated pancreatic
cancer progression
Source: NCI F30CA210587 (predoctoral NRSA)
Role & Effort: Co-Mentor
PI: NA Moussouras
Dates: 2016 - 2021

Title: Novel chaperones and
neurodegeneration
Source: NIH/NINDS R01
Role & Effort: Co-Investigator
PI: K. Matthew Scaglione, Duke University
Dates: 07/01/2019 - 06/30/2024

Title: CXCR4 as a Target for Colon Cancer
Chemoprevention
Source: NIH/NCI R01 CA240710
Role & Effort: Co-Investigator
PI: Marc Bissonnette, University of Chicago
Dates: 07/01/2019 - 06/30/2024

Title: Structure-Function Investigation of
Chemokine-GPCR Signaling in Tumor
Progression and Metastasis
Source: NCI F30CA236182 (predoctoral NRSA)
Role & Effort: Mentor
PI: A Dishman
Dates: 2019 - 2023

Title: Development of an engineered CCL20
protein as a lead therapeutic molecule for
psoriasis
Source: NIAMS SBIR Phase II R44
AR074363-01
Role & Effort: Co-PI, Chief Science Officer, XLock
Biosciences LLC
Dates: 08/01/2020 - 07/31/2022

Prior

Peer Review

Title: Structure of the Human Chemokine
Lymphotoxin
Source: NIH Research Project Grant R01/R21
AI45843
Role & Effort: Principal Investigator
Dates: 1999 - 2005
Direct Funds: \$1,050,000

Title: Center for Eukaryotic Structural

Source:	Genomics NIH Pilot Project Grant P50 GM64598 (John L. Markley, PI, University of Wisconsin-Madison)
Role & Effort:	Co-Investigator
Dates:	2001 - 2005
Direct Funds:	\$650,000
Title:	Novel Signaling Interactions that Regulate Apoptosis: Structure of the Bax:Ku70 Complex
Source:	MCW Cancer Center Interdisciplinary Research Grant
Role & Effort:	Principal Investigator
Dates:	2002 - 2003
Direct Funds:	\$25,000
Title:	Equipment supplement to "Center for Eukaryotic Structural Genomics" P50 GM64598-03
Source:	NIH Pilot Project Grant funds for 600 MHz NMR spectrometer
Role & Effort:	Principal Investigator
Dates:	2003 - 2004
Direct Funds:	\$600,000
Title:	Coexpression of the T cell chemoattractant Lymphotactin and costimulatory molecules CD80 and CD86 in a neuroblastoma tumor vaccine
Source:	MCW Cancer Center Interdisciplinary Research Grant
Role & Effort:	Principal Investigator
Dates:	2004 - 2006
Direct Funds:	\$25,000
Title:	Specialized Center for Eukaryotic Structural Genomics
Source:	NIH Cooperative Agreement
Role & Effort:	Co-Investigator
PI:	John L. Markley, University of Wisconsin-Madison
Dates:	2005 - 2011
Direct Funds:	\$525,653
Title:	Conformational duality in the human chemokine Ltn/XCL1
Source:	NIH Research Project Grant R01 AI063325
Role & Effort:	Principal Investigator
Dates:	2005 - 2010
Direct Funds:	\$1,000,000 (no-cost extension in 2010-2011)
Title:	Structural basis of selective activation of the anthrax-killing enzyme PlyG"
Source:	Great Lakes Regional Center of

Role & Effort:	Excellence Developmental Project (Olaf Schneewind, PI, University of Chicago Co-Investigator
Dates:	2006 - 2008
Direct Funds:	\$100,000
Title:	Structure of the SCAN domain from tumor suppressor protein MZF-1/ZNF42 and its complexes with other zinc-finger transcription factors
Source:	MCW Cancer Center Interdisciplinary Research Grant
Role & Effort:	Principal Investigator
Dates:	2006 - 2007
Direct Funds:	\$25,000
Title:	Inhibition of Breast and Prostate Cancer Cell Metastasis with an Engineered Chemokine
Source:	State of Wisconsin's Tax Check-Off Program for Breast Cancer Research
Role & Effort:	Principal Investigator
Dates:	2008 - 2010
Direct Funds:	\$144,000
Title:	Structural basis for selective lysis of anthrax and drug-resistant <i>S. aureus</i>
Source:	Great Lakes Regional Center of Excellence Developmental Project (Olaf Schneewind, PI, University of Chicago)
PI:	Principal Investigator
Dates:	2009 - 2011
Title:	500 MHz NMR Spectrometer at the Medical College of Wisconsin
Source:	NIH Shared Instrumentation Grant 1S10RR024665-01
Role & Effort:	Principal Investigator
Dates:	2009 - 2010
Direct Funds:	\$500,000
Title:	Medical Scientist Training Program Institutional National Research Service Award
Source:	NIGMS T32 GM080202
Role & Effort:	Mentor/Investigator
PI:	JT Barbieri
Dates:	2010 - 2020
Title:	Conformational duality in the human chemokine Ltn/XCL1
Source:	NIH Research Project Grant R56 AI063325
Role & Effort:	Principal Investigator
Dates:	2011 - 2012
Title:	Sulfotyrosine-guided discovery of small

Source:	molecule chemokine inhibitors- Equipment supplement NIH Research Project Grant R01 GM097381-01S1
Role & Effort:	Principal Investigator
Dates:	2011 - 2012
Direct Funds:	\$84,950
Title:	Sulfotyrosine-guided discovery of small molecule chemokine inhibitors- Collaborative supplement
Source:	NIH Research Project Grant 3R01 GM097381-01S2
Role & Effort:	Principal Investigator
Dates:	2011 - 2013
Direct Funds:	\$76,020
Title:	Regulated Spindle Orientation During Asymmetric Cell Division
Source:	NIH Research Project Grant 3R01 GM087457-02S1
Role & Effort:	Co-Investigator
PI:	Ken Prehoda, University of Oregon
Dates:	2011 - 2013
Direct Funds:	\$53,334
Title:	CXCL12 Treatment as a Novel Therapeutic Paradigm for Breast Cancer
Source:	WBCS Breast & Prostate Cancer Research Grant
Role & Effort:	Co-Investigator
PI:	Michael B. Dwinell
Dates:	2011 - 2013
Direct Funds:	\$0
Title:	Abscisic acid (ABA) signal transduction in plants
Source:	University of California-Riverside- Syngenta-Prime Sponsor
Role & Effort:	Co-Investigator
PI:	Francis Peterson, MCW Department of Biochemistry
Dates:	12/01/2012 - 12/31/2015
Direct Funds:	\$84,000
Title:	In Silico Screening of Molecules for Inhibition of CCR6 /CCL20 in Psoriasis
Source:	National Psoriasis Foundation Lutto Translational Research Grant
Role & Effort:	Co-Investigator
PI:	Sam Hwang, MCW Department of Dermatology
Dates:	2012 - 2013
Direct Funds:	\$100,000
Title:	Targeting the CXCL12 CXCR4 Axis towards the Therapy of Metastatic

Source:	Cancers NIH Research Project Grant 1R01 CA173056-01A1
Role & Effort:	Co-Investigator
PI:	Rongshi Li, University of Nebraska
Dates:	04/01/2013 - 03/31/2016
Direct Funds:	\$49,800
Title:	Function and targeting of CCR6/CCL20 in autoimmune psoriasiform skin disease
Source:	NIH Research Project Grant R01
Role & Effort:	Co-Investigator
PI:	Sam Hwang
Dates:	09/01/2013 - 08/31/2020
Direct Funds:	\$212,500
Title:	Structural and energetic origins of metamorphic protein folding
Source:	NIH Research Project Grant R56 AI013225
Role & Effort:	Principal Investigator
Dates:	2013 - 2015
Direct Funds:	\$235,000
Title:	Targeting CCL28 as therapy for obstructive lung disease
Source:	NIH Research Project Grant R56 AI112519
Role & Effort:	Co-PI
PI:	Mitchell Grayson
Dates:	2014 - 2015
Direct Funds:	\$250,000
Title:	High Performance Digital Console and Sample Jet
Source:	NIH Shared Instrumentation Grant S10 OD020000-01
Role & Effort:	Principal Investigator
Dates:	03/01/2015 - 02/29/2017
Direct Funds:	\$600,000
Title:	Targeting CCL28 as therapy for obstructive lung disease
Source:	NIH Research Project Grant R01AI120655
Role & Effort:	Principal Investigator
Dates:	06/15/2015 - 07/31/2020
Direct Funds:	\$250,000
Title:	A Structure-Based Drug Discovery Resource for Clinical and Basic Scientists
Source:	AHW-Research and Education Program
Role & Effort:	Co-Investigator
PI:	R. Blake Hill, MCW Department of Biochemistry
Dates:	07/01/2015 - 06/30/2017

Direct Funds:	\$100,000
Title:	Selective uptake and hydrolysis of cholesteryl esters by SR-BI
Source:	NIH Research Project Grant R01 HL058012
Role & Effort:	Co-Investigator
PI:	Daisy Sahoo, MCW Department of Medicine
Dates:	08/18/2015 - 06/30/2020
Direct Funds:	\$250,000
Title:	Therapeutic delivery of ADP-ribosylarginine hydrolase, SBIR Topic 91, Phase I
Source:	NHLBI SBIR Contract 268201500005C-0-0-1
Role & Effort:	President, Protein Foundry, LLC
PI:	Chen Chen
Dates:	09/15/2015 - 03/14/2017
Title:	Targeting RPA-XPA interactions towards combinatorial cancer therapeutics
Source:	MCW Cancer Center Multi-PI MU-MCW Collaboration Award
Role & Effort:	Principal Investigator
Dates:	03/01/2018 - 02/28/2019
Direct Funds:	\$40,000
Title:	Translational Investigation of a novel, engineered variant of CCL20 as a therapeutic agent for psoriasis
Source:	National Psoriasis Foundation Translational Research Grant
Role & Effort:	Principal Investigator
Dates:	08/01/2018 - 12/31/2020
Title:	Development of an engineered CCL20 protein as a lead therapeutic molecule for psoriasis
Source:	NIAMS SBIR Phase I R43 AR074363-01
Role & Effort:	Co-PI, President, Protein Foundry, LLC
Dates:	09/11/2018 - 12/31/2019
Title:	Sulfotyrosine-guided discovery of small molecule chemokine inhibitors – equipment supplement
Source:	NIH Research Project Grant 3R01 GM097381-06S1
Role & Effort:	Principal Investigator
Dates:	03/01/2019 - 02/28/2020
Direct Funds:	\$200,000
Title:	800 MHz NMR Spectrometer for Southeast Wisconsin

Source: NIH S10 OD025000-01A1
Role & Effort: Principal Investigator
Dates: 05/01/2019 - 04/30/2020

Non-Peer Review

Title: POC Study – SDF1 dimer as an inhibitor of inflammatory bowel diseases
Source: MCW Office of Technology Development
Role & Effort: Principal Investigator
Dates: 2009 - 2010
Direct Funds: \$10,000

Title: POC Study – SDF1 dimer as an inhibitor of EAE, a model for multiple sclerosis
Source: MCW Office of Technology Development
Role & Effort: Principal Investigator
Dates: 2009 - 2010
Direct Funds: \$11,710

INVITED LECTURES/WORKSHOPS/PRESENTATIONS:

International

18th International Conference on Magnetic Resonance in Biological Systems, Tokyo, Japan, 1998
19th International Conference on Magnetic Resonance in Biological Systems, Florence, Italy, ., 2000
Plenary Lecture, 2nd Portuguese-Brazilian NMR Conference, Sintra, Portugal, 2003
Invited Lecture, 2nd Asia-Pacific NMR Conference, Kenting, Taiwan, 2007
Invited speaker, Gordon Research Conference on Chemotactic Cytokines, Aussois, France, 2008
Seminar, University of Montreal, Montreal, Quebec, Canada, 2009
Invited speaker, 34th Lorne Conference on Protein Structure and Function, Lorne, VIC, Australia, 2009
Invited speaker, “Structure-based inhibition of CXCL12 activity”, Gordon Research Conference on Chemotactic Cytokines, Ciocco, Italy, 2010

National

37th Experimental Nuclear Magnetic Resonance Conference, Pacific Grove, CA, 1996 - Present
Frontiers of NMR in Molecular Biology, Keystone Symposium, Breckenridge, CO, 1997 - Present
39th Experimental Nuclear Magnetic Resonance Conference, Pacific Grove, CA, 1998 - Present
Berea College, Department of Chemistry, Berea, KY, 1998 - Present
Columbia University, Department of Biochemistry and Biophysics, New York, NY, 1998 - Present
41st Experimental Nuclear Magnetic Resonance Conference, Pacific Grove, CA, 2000 - Present
16th Symposium of the Protein Society, San Diego, CA, 2002 - Present
University of Utah, Department of Biochemistry, Salt Lake City, UT, 2002 - Present
University of Oregon, Institute for Molecular Biology, Eugene, OR, 2002 - Present
University of North Carolina, Department of Biochemistry and Biophysics, Chapel Hill, NC, 2004 - Present
Rockefeller University, Laboratory of Molecular Biophysics, New York, NY, 2004 - Present
3rd International Conference on Structural Genomics, Washington D.C., 2004 - Present
Southeast Regional Meeting of the American Chemical Society, Research Triangle Park, NC, 2004 - Present
LSU Health Sciences Center, Department of Biochemistry and Molecular Biology, New Orleans, LA, 2005 - Present
University of Oregon, Department of Chemistry, Eugene, OR, 2006 - Present
2nd annual Computational Biology Conference, National Institute of Environmental Health Sciences, Research Triangle Park, NC, 2006 - Present
4th Annual Meeting, Great Lakes Regional Center for Excellence in Biodefense and Emerging Infectious Diseases, Hilton Head, SC, 2006 - Present
21st Annual Symposium of The Protein Society, Boston, MA, 2007 - Present
Chemokines and Chemokine Receptors, Keystone Symposium, Keystone, CO, 2008 - Present

6th Annual Meeting, Great Lakes Regional Center for Excellence in Biodefense and Emerging Infectious Diseases, Hilton Head, SC, 2008 - Present
Plenary lecture, Keystone Symposium - Frontiers of NMR in Biology, Santa Fe, NM, 2009 - Present
University of Maryland Biotechnology Institute, Rockville, MD, 2009 - Present
University of California-Riverside, Riverside, CA, 01/13/2010 - Present
University of South Florida, Tampa, FL, "Controlling cell migration with chemokine gymnastics", 03/12/2010 - Present
University of Missouri, "Controlling cell migration with chemokine gymnastics", Columbia MO, 04/09/2010 - Present
6th Annual National RCE Meeting, Las Vegas, NV, "Structural basis for selective lysis of anthrax by phage lysins", 04/13/2010 - Present
Johnson & Johnson Pharmaceutical R&D, Exton, PA, 09/06/2010 - Present

Regional

NMR as a Structural Tool for Macromolecules: Current Status and Future Directions Symposium, Indiana University Purdue University at Indianapolis, Indianapolis, IN, 1994 - Present
Beyond Protein Structure, Pfizer, Inc.-Beckman Institute Symposium, Champagne-Urbana, IL, 1996 - Present
Mayo Clinic, Department of Biochemistry and Molecular Biology, Rochester, MN, 1998 - Present
University of Missouri-Kansas City, School of Biological Sciences, Kansas City, Missouri, 1999 - Present
Chicago Area NMR Discussion Group Meeting, Searle Company, Skokie, IL, 1999 - Present
Butler University, Department of Chemistry, Indianapolis, IN, 2000 - Present
University of Wisconsin, Department of Biochemistry, Madison, WI, 2000 - Present
University of Wisconsin, School of Pharmacy, Madison, WI, 2000 - Present
Bruker Midwest NMR Meeting, Milwaukee, WI, 2001
University of Iowa, Department of Medicinal and Natural Products Chemistry, Iowa City, IA, 2002 - Present
University of Illinois-Chicago, Department of Biochemistry, Chicago, IL, 2002 - Present
Discussion Leader, International Structural Genomics Organization Protein Structure Initiative Workshop on NMR in Structural Genomics, Madison, WI, 2002 - Present
University of Wisconsin-Green Bay, Department of Chemistry, Green Bay, WI, 2003 - Present
Wayne State University, Department of Biochemistry, Detroit, MI, 2003 - Present
Lawrence University, Department of Chemistry, Appleton, WI, 2004 - Present
Mayo Clinic, Department of Biochemistry and Molecular Biology, Rochester, MN, 2004 - Present
Rosalind Franklin University, Department of Biochemistry and Molecular Biology, North Chicago, IL, 2005 - Present
Great Lakes Regional Meeting of the American Chemical Society, Milwaukee, WI, 2006
Mayo Clinic, Department of Immunology, Rochester, MN, 2006 - Present
University of Iowa, Department of Biochemistry, Iowa City, IA, 2007 - Present
Keynote speaker, GRASP-NMR (Great Plains Annual Symposium on Proteins and Biomolecular NMR), Lawrence, KS. "Novel strategies for chemokine inhibition guided by protein NMR", 09/25/2009 - Present
University of Illinois-Chicago, Department of Biochemistry, Chicago, IL, 12/02/2009 - Present
7th Annual Meeting, Great Lakes Regional Center for Excellence in Biodefense and Emerging Infectious Diseases, Chicago, IL, 12/05/2009 - Present
University of Illinois-Chicago, Chicago Biomedical Consortium, Chicago, IL, 02/01/2010 - Present
Lawrence University, Department of Chemistry, Appleton, WI, "Structure-based drug discovery to control cell migration", 03/05/2010 - Present
8th Annual Meeting, Great Lakes Regional Center for Excellence in Biodefense and Emerging Infectious Diseases, Chicago, IL. "A self-unfolding mechanism for autoinhibition of PlyG", 09/29/2010 - Present
Teva Innovative Ventures, MG&E Innovation Center, Madison, WI, "Blocking metastasis with novel chemokine inhibitors", 10/13/2010 - Present
Loyola University Stritch School of Medicine, Department of Pharmacology, Chicago, IL, 12/02/2010 - Present

Local

Medical College of Wisconsin, Department of Biochemistry, Milwaukee, WI, 1999
Marquette University, Department of Chemistry, Milwaukee, WI, 2005
UWM Research Foundation/MCW Office of Technology Development First Look Forum, University Club,

Milwaukee, WI, "Blocking metastasis with novel chemokine inhibitors", 05/10/2010
IUW-Milwaukee Chemistry and Biochemistry Awards Day, Invited Speaker "Extreme protein dynamism: functional unfolding in the native state", 05/10/2011 - Present

COMMITTEE SERVICE:

Medical College of Wisconsin

2002 - 2008 Graduate Studies Council Nominating Committee, MCW
2003 - 2008 Recruiting Committee Chairman, Interdisciplinary Program in Biomedical Sciences, MCW
2003 - 2008 Graduate Studies Council, MCW
2003 - 2004 Information Services Advisory Committee, MCW
2003 - 2008 Recruiting Director, Biochemistry Graduate Program, MCW
2003 - 2008 Chairman, Graduate Studies Council Nominating Committee, MCW
2005 - Present Protein and Nucleic Acid Facility Steering Committee, MCW
2005 MCW Advancing a Healthier Wisconsin Grant Review Panel, MCW
2006 Faculty Council Ad hoc Committee on Information Technology, MCW
2006 - Present MCW Core Facilities Committee
2006 Reviewer, Wisconsin Breast Cancer Showhouse Research Program, MCW
2006 - 2009 Faculty Council Biochemistry Dept representative
2008 - Present Reviewer, Wisconsin Breast Cancer Showhouse Research Program, MCW
2009 Biochemistry Chair Search Committee (Dept. representative), MCW
2009 ACS Pilot Research Grant Review Committee, MCW
2010 - 2011 Chair, Biochemistry Structural Biology Search Committee, MCW
2011 ACS Pilot Research Grant Review Committee, MCW

MCW TEACHING ACTIVITIES:

Medical Student Education

2000 - Present Medical Biochemistry: Case-based discussion preceptor

Graduate Student Education

2000 - 2006 Biochemistry of the Cell (Grad 16201): Lecturer
2002 - Present Protein Chemistry (Biochem 02222): Lecturer and Course Director
2003 - Present Biophysical Techniques in Biochemistry: Lecturer
2007 Structural Basis of Macromolecular Interactions: Lecturer
2007 Research Ethics Discussion Panelist "Experimental Design and Data Collection"
2010 Biomolecular NMR: Structure and Molecular Recognition: Course director and lecturer

EXTRAMURAL TEACHING:

Medical Student Education

2005 University of Aveiro, Aveiro, Portugal, , Department of Chemistry; Course: Advanced Biomolecular Techniques in Biology/Biochemistry

Graduate Student Education

2005 Rosalind Franklin University of Medicine and Science, Graduate program in biochemistry and molecular biology; Course: Physical Biochemistry
2007 Rosalind Franklin University of Medicine and Science, Graduate program in biochemistry and molecular biology; Course: Physical Biochemistry

MCW STUDENTS, FACULTY, RESIDENTS AND CLINICAL/RESEARCH FELLOWS MENTORED:

Medical Students

2004 - 2005 Petar Duvnjak, Summer lab asst, MCW
2007 Richard Lennertz, MSTP, MCW
2008 Katelin Engerer, MSTP, MCW
2009 Michael Larson, MSTP, MCW

Graduate Students

Students Advised

- 2001 Jeremy Nichols, Rotation student, MCW Interdisciplinary Program in Biomedical Sciences, MCW
- 2002 Christopher Veldkamp, Ryan McAndrew, Rotation student, MCW Interdisciplinary Program in Biomedical Sciences, MCW
- 2003 Jason Kowalski, Mariam Hartley, Chris Pawela, John Uselding, Rotation students, MCW Interdisciplinary Program in Biomedical Sciences, MCW
- 2004 Tayyiba Khan, Daisy Deng, Rotation students, MCW Interdisciplinary Program in Biomedical Sciences, MCW
- 2005 Jessica Weber, Todd Wingers, Rotation students, MCW Interdisciplinary Program in Biomedical Sciences, MCW
- 2006 Adam Dubis, Rotation student, MCW Interdisciplinary Program in Biomedical Sciences, MCW
- 2007 Joshua Wiener, Aaron Kittel, Dustin Whitney, Rotation student, MCW Interdisciplinary Program in Biomedical Sciences, MCW
- 2008 Jamie Wieting, Justin Reitsma, Joshua Ziarek, Andrew Karalewitz, Gabriella Papale, Rotation student, MCW Interdisciplinary Program in Biomedical Sciences, MCW
- 2009 Steven Johnson, Rotation student, MCW Interdisciplinary Program in Biomedical Sciences, MCW
- 2010 Anthony Getschman, Maxime Heroux, Rotation students, MCW Interdisciplinary Program in Biomedical Sciences, MCW
- 2011 Alexandra Chadwick, Rotation student, MCW Interdisciplinary Program in Biomedical Sciences, MCW

PhD Students Advised

- 2002 - 2006 Christopher Veldkamp, Structural Studies of the stromal cell-derived factor-alpha/CXCL12 monomer-dimer equilibrium by multidimensional NMR and fluorescence spectroscopy", MCW
- 2006 - Present Dustin Whitney, MCW
- 2007 - Present Joshua Ziarek, MCW
- 2008 - Present Jamie Wieting, MCW
- 2011 - Present Anthony Getschmann, MCW

MS Students Advised

- 2005 Adam Harder, Non-Thesis degree, MCW
- 2007 - 2010 Joshua Weiner, MCW

Committees

- 2006 Christopher Veldkamp, MCW
- 2006 Blythe Janowiak, MCW
- 2006 Jeremy Nichols, MCW
- 2007 Michael Wendt, MCW
- Laura Ristow, Pending, MCW
- David Anderson, Pending, MCW
- Andrew Karalewitz, Pending, MCW
- Tyce Kearl, Pending, MCW
- Gabriella Papale, Pending, MCW
- Patrick Pennington, Pending, MCW

Clinical/Research Fellows

- 2004 - 2007 Robbyn Tuinstra, PhD, Post-Graduate Mentor, MCW
- 2006 - 2009 Christopher Veldkamp, PhD, Post-Graduate Mentor, MCW

EXTRAMURAL STUDENTS, FACULTY, RESIDENTS, AND CLINICAL/RESEARCH FELLOWS MENTORED:

Undergraduate Students

- 2006 - 2007 Margie Li, Summer lab asst, Duke Univ.
- 2008 Christopher Woytovich, SPUR program, Columbia Univ
- 2008 - 2009 Carol Platt, NIH summer lab asst, Univ. of Chicago
- 2009 - 2010 Nathan Murray, NIH summer lab asst, Univ. of Illinois

Graduate Students

PhD Students Advised

- 2002 E. Sonay Kuloglu, "Structure-Function Studies of the Human Chemokine Lymphotoxin and Its Equilibrium Between Two Highly Divergent Conformational States", Univ. of Wisconsin-Madison; Dept. of Biochemistry
- 2004 Merideth Burkhart, SPUR program, Northwestern Univ. PhD program
- 2004 - 2005 Tina Liu, Summer lab asst, Harvard Univ. PhD program
- 2006 John C. Haugner, SPUR program, Univ. of Minnesota PhD program
- 2007 Harihar Basnet, SPUR progra, UCSD

PhD Committees

- 2009 Elizabeth M. Baden, Mayo Graduate School
- 2009 Janice Velos, Brandeis University

Clinical/Research Fellows

- 2001 - 2010 Betsy L. Lytle, PhD, Post-Graduate Mentor, Univ. of Rochester
- 2001 - 2004 Francis C. Peterson, PhD, Post-Graduate Mentor, Ohio State University
- 2002 - 2003 E. Sonay Kuloglu, PhD, Post-Graduate Mentor, Univ. of Wisconsin-Madison
- 2003 - 2004 Sujatha Sampath, PhD, Post-Graduate Mentor, IUC, Indore, India
- 2006 - Present Robert Tyler, PhD, Post-Graduate Mentor, University of Montana
- 2007 - Present Jorge Da Silva Dias, PhD, Post-Graduate Mentor, Universidade Nova de Lisboa
- 2007 Norberto De la Cruz, PhD, Post-Graduate Mentor, University of Wisconsin-Madison
- 2008 Snjezana Kutlesa, PhD, Post-Graduate Mentor, University of Tubingen
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COMMUNITY SERVICE ACTIVITIES:

- 2004 - 2008 Member, Board of Directors, Concord Chamber Orchestra (Milwaukee, WI)
- 2005 - 2008 President, Board of Directors, Concord Chamber Orchestra (Milwaukee, WI)
- 2009 - Present Treasurer, Little Muskego Lake Protection and Rehabilitation District (Muskego, WI)

BIBLIOGRAPHY

Refereed Journal Publications/Original Papers

1. Ellman, JA, Volkman, BF, Mendel, D, Schultz, PG, and Wemmer, DE, Site-Specific Isotopic Labeling of Proteins for NMR Studies, (1992) *J. Am. Chem. Soc.* 114, 7959-7961.
2. Geierstanger, BH, Volkman, BF, Kremer, W., and Wemmer, D.E., Short Peptide Fragment Derived from HMG-I/Y Proteins Bind Specifically to the Minor Groove of DNA (1994) *Biochemistry* 33, 5347-5355.
3. Volkman, BF, Nohaile, MJ, Amy, NK, Kustu, S, Wemmer, DE, Three-dimensional Solution Structure of the N-terminal Receiver Domain of NTRC, (1995) *Biochemistry* 34, 1413.
4. Volkman, BF and Wemmer, DE, Deletion of a single amino acid changes the folding of an apamin hybrid sequence peptide to that of endothelin (1997) *Biopolymers*, 41, 451-460.
5. Lee, AL, Volkman, BF, Robertson, SA, Rudner, DZ, Barbash, D, Cline, TW, Kanaar, R, Rio, DC, Wemmer, DE, Chemical Shift Mapping of the RNA-Binding Interface of the Multiple-RBD Protein Sex-Lethal, (1997) *Biochemistry*, 36, 14306-14317.
6. Chivers, PT, Prehoda, KE, Volkman, BF, Kim, B-M, Markley, JL, Raines, RT, Microscopic pKa Values of Escherichia coli Thioredoxin (1997) *Biochemistry*, 36, 14985-14991.
7. Volkman, BF, Prantner, AM, Wilkens, SJ, Xia, B, Markley, JL, Assignment of ¹H, ¹³C, and ¹⁵N signals of oxidized Clostridium pasteurianum rubredoxin, (1997) *J. Biomol. NMR*, 10, 409-410
8. Prantner, A.M., Volkman, BF, Wilkens, S.J., Xia, B., Markley, JL, Assignment of ¹H, ¹³C, and ¹⁵N signals of reduced Clostridium pasteurianum rubredoxin: oxidation state-dependent changes in chemical shifts and relaxation rates (1997) *J. Biomol. NMR*, 10, 411-412.
9. Xia, B., Volkman, BF, and Markley, JL Evidence for Oxidation-State-Dependent Conformational Changes in Human Ferredoxin from Multinuclear, Multidimensional NMR Spectroscopy (1998) *Biochemistry*, 37, 3965-3973.

10. Geierstanger, B.H., Jamin, M., Volkman, BF and Baldwin, R.L., Protonation behavior of histidine 24 and histidine 119 in forming the pH 4 folding intermediate of apomyoglobin (1998) *Biochemistry*, 37, 4254-4265.
11. Alam, S.L., Volkman, BF, Markley, JL and Satterlee, J.D., Detailed NMR Analysis of the Heme-Protein Interactions in Component IV Glycera dibranchiata monomeric hemoglobin-CO (1998) *J. Biomol NMR*, 11, 119-133.
12. Volkman, BF, Alam, S.L., Satterlee, J.D. and Markley, JL, Solution Structure and Backbone Dynamics of Component IV-Glycera dibranchiata monomeric hemoglobin-CO, (1998) *Biochemistry*, 37, 10906-10919.
13. Chylla, R.A., Volkman, BF and Markley, JL, Practical model fitting approaches to the direct extraction of NMR parameters simultaneously from all dimensions of multidimensional NMR spectra (1998) *J. Biomol. NMR*, 12, 277-297.
14. Dangi, B., Blankman, J.I., Miller, C.J., Volkman, BF, and Guiles, R.D., Contribution of Backbone Dynamics to Entropy Changes Occurring on Oxidation of Cytochrome b5; Can Redox Linked Changes in Hydrogen Bond Networks Modulate Reduction Potentials? (1998) *J. Phys. Chem*, 102B, 8201-8208.
15. Wilkens, S. J., Xia, B., Volkman, BF, Weinhold, F., Markley, JL and Westler, WM., Refutation of the point-dipole approximation for the electron-nuclear relaxation in NMR of paramagnetic proteins: NMR and hybrid density functional calculations in high-spin Fe(III) rubredoxin (1998) *J. Phys. Chem*, 102B, 8300-8305.
16. Beger, RD., Marathias, VM., Volkman, BF, and Bolton, PH., Determination of internuclear angles of DNA using paramagnetic alignment (1998) *J. Magn. Reson.*, 135, 256-259.
17. Volkman, BF, Anderson, ME., Clark, KD., Hayakawa, Y., Strand, MR., and Markley, JL Structure of the Insect Cytokine Peptide PSP-1 from *Pseudoplusia includens*, (1999) *J. Biol. Chem.*, 274, 4493-4496.
18. Babu, CR., Volkman, BF, Bullerjahn, GS NMR solution structure of plastocyanin from the photosynthetic prokaryote, *Prochlorothrix hollandica*, (1999) *Biochemistry*, 38, 4988-4995.
19. Volkman, BF, Wilkens, SJ., Lee, AL., Xia, B., Westler, WM., Beger, RD., and Markley, JL Redox-dependent magnetic alignment of *Clostridium pasteurianum* rubredoxin: measurement of magnetic susceptibility anisotropy and prediction of pseudocontact shift contributions, (1999) *J. Am. Chem. Soc.*, 121, 4677-4683.
20. Kern, D., Volkman, BF, Luginbühl, P., Nohaile, MJ., Kustu, Sand Wemmer, DE. Structure of a transiently phosphorylated "switch" in bacterial signal transduction, (1999) *Nature*, 402, 894-898.
21. Lytle, BL., Volkman, BF, Westler, WM., and Wu, JHD., Secondary structure and calcium-induced folding of the *Clostridium thermocellum* dockerin domain determined by NMR spectroscopy, (2000) *Arch. Biochem. Biophys.*, 379, 237-244.
22. Baldisseri, DM., Margolis, JW, Omotosho, PA., Volkman, BF, Margolis, F.L., Sequence-specific NMR resonance assignments of the backbone atoms for the olfactory marker protein, OMP, (2000) *J. Biomol. NMR*, 4, 353-354.
23. Volkman, BF, Kustu, S., Wemmer, DE., and Kern, D., Two-state allosteric behavior in a single-domain signaling protein, (2001) *Science*, 291, 2429-2433.
24. Lytle, BL., Volkman, BF, Westler, WM., and Wu, JHD., Solution structure of a type I dockerin domain, a novel prokaryotic, extracellular calcium-binding domain, (2001) *J. Mol. Biol.*, 307, 745-753.
25. Clark, KD, Volkman, BF, Thoetkiattikul, H, King, DS., Hayakawa, Y., and Strand, MR., Alanine-scanning Mutagenesis of Plasmatocyte Spreading Peptide Identifies Critical Residues for Biological Activity, (2001) *J. Biol. Chem.*, 276, 18491-18496.
26. Volkman, BF, Zhang, Q, Debabov, D, Rivera, E, Kresheck, G and Neuhaus, FC, Biosynthesis of D-alanyl-lipoteichoic acid: the tertiary structure of apo-D-alanyl carrier protein, (2001) *Biochemistry*, 40, 7964-7972.
27. Clark KD, Volkman, BF, Thoetkiattiku, H, Hayakawa, Y, and Strand, MR, N-terminal residues of plasmatocyte spreading peptide possess specific determinants required for biological activity, (2001) *J. Biol. Chem.*, 276, 37431-37435.
28. Kuloglu, ES, McCaslin, DR, Kitabwalla, M, Pauza, CD, Markley, JL and Volkman, BF, Monomeric Solution Structure of the Prototypical 'C' Chemokine Lymphotactin, (2001) *Biochemistry*, 40, 12486-12496.
29. Tikhonov, I, Kitabwalla, M, Wallace, M, Malkovsky, M, Volkman, BF, and Pauza, CD, Staphylococcal superantigens induce lymphotactin production by human CD4+ and CD8+ T cells, (2001) *Cytokine*, 16, 73-8.
30. Skjeldal, L, Gran, L, Sletten, K. and Volkman, BF, Refined Structure and Metal Binding Site of the Kalata B1 Peptide, (2002) *Archives of Biochemistry and Biophysics*, 399, 142-148.

31. Kuloglu, ES, Pauza, CD, Markley, JL and Volkman, BF, Conformational rearrangement in the C chemokine lymphotactin, (2002) *J. Biol. Chem.*, 277, 17863-17870.
32. Goodfellow, BJ, Nunes, S, Rusnak, F, Moura, I, Ascenso, C, Moura, JIG, Volkman, BF, and Markley, JL, Pseudocontact shifts in a mixed metal form of *Desulfovibrio gigas* desulforedoxin, (2002) *Prot. Sci.*, 11, 2464-2470.
33. Volkman, BF, Prehoda, KE, Scott, JA, Peterson, FC and Lim, WA, Structure of the N-WASP EVH1 Domain-WIP Complex: Insight into the Molecular Basis of Wiskott-Aldrich Syndrome, (2002) *Cell*, 111, 565-76.
34. Zolnai, Z, Lee, PT, Li, J, Chapman, MR, Newman, CS, Phillips, GN Jr, Rayment, I, Ulrich, EL, Volkman, BF and Markley, JL, Project Management System for High-Throughput Protein Structure Determinations: Sesame, (2003) *J Struct and Funct Genomics*, 4, 11-23.
35. Gardino, AK, Volkman, BF, Cho, HS, Lee, S-Y, Wemmer, DE, and Kern, D, The NMR Solution Structure of BeF₃--Activated Spo0F Reveals the Conformational Switch in a Phosphorelay System, (2003) *J Mol Biol* 331 245-54.
36. Cook, CR, Kung, G, Peterson, FC, Volkman, BF and Lei, M, A novel zinc-finger is required for Mcm10 homocomplex assembly, (2003) *J Biol Chem* 278 36051-8.
37. Lytle, BL, Peterson, FC, Kjer, KL, Frederick, RO, Zhao, Q, Thao, S, Bingman, C, Johnson, KA, Phillips, GN Jr., Volkman, BF, Structure of the hypothetical protein At3g17210 from *Arabidopsis thaliana*, (2004) *J Biomol NMR* 28 397-400.
38. Peterson, FC, Elgin, ES, Nelson, TJ, Zhu, F, Hoeger, TJ, Linhardt, RJ, Volkman, BF, A glycosaminoglycan recognition element of Lymphotactin essential for in vivo chemokine activity, (2004) *J Biol Chem* 279 12598-12604.
39. Peterson, FC, Penkert, RR, Volkman, BF, Prehoda, KE, Cdc42 Regulates the Par-6 PDZ Domain Through an Allosteric CRIB-PDZ Transition (2004) *Mol Cell* 13 665-676.
40. Zhao Q, Frederick R, Seder K, Thao S, Sreenath H, Peterson F, **Volkman BF**, Markley JL, Fox BG, Production in two-liter beverage bottles of proteins for NMR structure determination labeled with either 15N- or 13C-15N (2004) *J Struct Funct Genomics* 5 87-93.
41. Bingman, CA, Johnson, KA, Peterson, FC, Frederick, RO, Zhao, Q, Thao, S, Fox, BG, Volkman, BF, Jeon, WB, Smith, DW, Newman, CS, Ulrich, EL, Hegeman, A, Sussman, MR, Markley, JL, Phillips, GN Jr, Structure of the protein from gene At3g17210 of *Arabidopsis thaliana* (2004) *Proteins* 57 218-220.
42. Smith DW, Johnson KA, Bingman CA, Aceti DJ, Blommel PG, Wrobel RL, Frederick RO, Zhao Q, Sreenath H, Fox BG, **Volkman BF**, Jeon WB, Newman CS, Ulrich EL, Hegeman AD, Kimball T, Thao S, Sussman MR, Markley JL, Phillips GN Jr. Crystal structure of At2g03760, a putative steroid sulfotransferase from *Arabidopsis thaliana* (2004) *Proteins* 57 854-857.
43. Lytle, BL, Peterson, FC, Qiu, S-H, Luo, M, Zhao, Q, Markley, JL and Volkman, BF, Solution structure of a ubiquitin-like domain from tubulin-binding cofactor B, (2004) *J Biol Chem* 279 46787-93.
44. Vinarov, DA, Lytle, BL, Peterson, FC, Tyler, E, Volkman, BF and Markley, JL Cell-free protein production and labeling protocol for NMR-based structural proteomics, (2004) *Nat Meth* 1 149-153.
45. Skjeldal, L, Peterson, FC, Doreleijers, JF, Moe, LA, Pikus, JD, Westler, WM, Markley, JL, Volkman, BF and Fox, BG, Solution Structure of T4moC, the Rieske Ferredoxin Component of the Toluene 4-Monooxygenase Complex, (2004) *J Biol Inorg Chem* 9 945-953.
46. Tyler, RC, Aceti, DJ, Bingman, CA, Cornilescu, CC, Fox, BG, Frederick, RO, Jeon, WB, Lee, MS, Newman, CS, Peterson, FC, Phillips, Jr., GN, Shahan, MN, Singh, S, Song, J, Sreenath, HK, Tyler, EM, Ulrich, EL, Vinarov, DA, Vojtik, FC, Volkman, BF, Wrobel, RL, Zhao, Q and Markley, JL, Comparison of cell-based and cell-free protocols for producing target proteins from the *Arabidopsis thaliana* genome for structural studies, (2005) *Proteins: Structure, Function and Bioinformatics*, 59 633-43.
47. Veldkamp, CT, Peterson, FC, Pelzek, A and Volkman, BF The monomer-dimer equilibrium of Stromal Cell Derived Factor-1 is altered by pH and phosphate, sulfate, and heparin binding, (2005) *Protein Sci*, 14 1071-81.
48. Peterson, FC, Lytle, BL, Tyler, E, Vinarov, DA, Markley, JL and Volkman, BF, Solution structure of thioredoxin h1 from *Arabidopsis thaliana*, (2005) *Protein Sci*, 14 2195-2200.
49. Waltner, JK, Peterson, FC, Lytle, BL, and **Volkman BF**, Structure of the B3 domain from *Arabidopsis thaliana* protein At1g16640, (2005) *Protein Sci* 14 2478-83.
50. Dias, JS, Macedo, AL, Ferreira, GC, Jeanty, N, Taketani, S, Goodfellow, BJ, Peterson, FC and Volkman, BF, 1H, 15N and 13C resonance assignments of the heme binding protein murine p22HBP, (2005) *J Biomol NMR* 32 338.

51. Veldkamp, CT, Seibert, C, Peterson, FC, Sakmar, TP and Volkman, BF Recognition of a CXCR4 sulfotyrosine by the chemokine stromal cell-derived factor-1 α (SDF-1 α /CXCL12) (2006) *J Mol Biol* 359 1400-9.
52. Lytle BL, Peterson, FC, Tyler, EM, Newman, CL, Vinarov, DA, Markley, JL and Volkman, BF Solution structure of Arabidopsis thaliana protein At5g39720.1, a member of the AIG2-like protein family, (2006) *Acta Crystallograph Sect F* 62 490-3.
53. Janowiak, BE, Hayward, MA, Peterson, FC, Volkman, BF and Griffith, OW, γ -Glutamylcysteine Synthetase - Glutathione Synthetase: Domain Structure and Identification of Residues Important in Substrate and Glutathione Binding (2006) *Biochemistry* 45 10461-73.
54. Peterson, FC, Hayes, PL, Waltner, JK, Heisner, AK, Jensen, DR, Sander, TL and Volkman, BF, Solution structure of the MZF1/ZNF42 SCAN domain homodimer, (2006) *J Mol Biol* 363 137-47.
55. Dias, JS, Macedo, AL, Ferreira, GC, Peterson, FC, Volkman, BF, and Goodfellow, BJ, The first structure of a protein from the SOUL/HBP family: murine p22HBP, (2006) *J Biol Chem* 281 10461-73.
56. Peterson, FC, Harder, AG, Thorpe, JA, Volkman, BF and Schwarze, SR Structural determinants involved in the regulation of CXCL14/BRAK expression by the 26S proteasome, (2006) *J Mol Biol* 363 813-822. PMID: PMC1664593
57. Veldkamp, CT, Peterson, FC, Hayes, PL, Mattmiller, J, Haugner, JC, De la Cruz, N, and Volkman, BF, On-column refolding of recombinant chemokines for NMR studies and biological assays, (2007) *Protein Expr Purif* 52 202-9.
58. Peterson, FC, Deng, Q, Zettl, M, Prehoda, KE, Lim, WA, Way, M, and Volkman, BF, Multiple independent WIP recognition motifs are required for a functional interaction with N-WASP, (2007) *J Biol Chem* 282 8446-53.
59. Tuinstra, R, Elgin, ES, Peterson, FC, and Volkman, BF An engineered second disulfide bond restricts lymphotactin/XCL1 to a chemokine-like conformation with XCR1 agonist activity, (2007) *Biochemistry* 46 2564-73.
60. De La Cruz, NB, Peterson, FC, Lytle, BL, and Volkman, BF Solution structure of a membrane-anchored ubiquitin-fold (MUB) protein from Homo sapiens (2007) *Protein Sci* 16 1479-84.
61. Phillips Jr., GN, Fox, BG, Markley, JL, Volkman, BF, Bae, E, Bitto, E, Bingman, CA, Frederick, RO, McCoy, JG, Lytle, BL, Pierce, BS, Song, J, and Twigger, SN, Structures of proteins of biomedical interest from the Center for Eukaryotic Structural Genomics (2007) *J Struct Func Genomics*, 8 73-84.
62. De la Cruz, NB, Peterson, FC, Volkman, BF, Solution structure of At3g28950 from Arabidopsis thaliana. (2008), *Proteins*, 72 546-555.
63. Hayes, PL, Lytle, BL, Volkman, BF, Peterson, FC, Solution structure of ZNF593 from Homo sapiens, (2008) *Protein Sci*, 17 571-576.
64. Tuinstra, RL, Peterson, FC, Kutlesa, S, Elgin, ES, Kron, MA and Volkman, BF, Interconversion between two unrelated protein folds in the lymphotactin native states, (2008) *Proc Natl Acad Sci USA* 105 5057-62.
65. Baden, EM, Owen, BAL, Peterson, FC, Volkman, BF, Ramirez-Alvarado, M, and Thompson, JR, Altered dimer interface decreases stability in an amyloidogenic protein (2008) *J Biol Chem* 283 15853-60.
66. Noll L, Peterson FC, Hayes PL, **Volkman BF**, Sander T, Heterodimer formation of the myeloid zinc finger 1 SCAN domain and association with promyelocytic leukemia nuclear bodies (2008) *Leuk Res* 32 1582-92.
67. Veldkamp, CT, Seibert, C, Peterson, FC, De la Cruz, NB, Haugner, JC, Basnet, H, Sakmar, TP, and Volkman, BF, Structural basis of CXCR4 sulfotyrosine recognition by the chemokine SDF1/CXCL12 (2008) *Science Signaling* 1 ra4.
68. Seibert, C, Veldkamp, CT, Peterson, FC, Chait, B, Volkman, BF, Sakmar, T, Sequential Tyrosine Sulfation of CXCR4 by Tyrosylprotein Sulfotransferases (2008) *Biochemistry* 47 11251-62.
69. Lytle, BL, Song, J, de la Cruz, NB, Peterson, FC, Johnson, KA, Bingman, CA, Phillips, Jr., GN and Volkman, BF, Structures of Two Arabidopsis thaliana Major Latex Proteins Represent Novel Helix-Grip Folds, (2009) *Proteins* 76 237.
70. Markley JL, Aceti DJ, Bingman CA, Fox BG, Frederick RO, Makino SI, Nichols KW, Phillips GN Jr, Primm JG, Sahu SC, Vojtik FC, **Volkman BF**, Wrobel RL, Zolnai Z, The Center for Eukaryotic Structural Genomics (2009) *J Struct Funct Genomics* 10 165-79.
71. Veldkamp, CT, Ziarek, JJ, Basnet, H, Lennertz, R, Weiner, JJ, Peterson, FC and Volkman, BF, Monomeric structure of the cardioprotective chemokine SDF-1/CXCL12 (2009) *Protein Science* 76 237-43.
72. Park SY, Fung P, Nishimura N, Jensen DR, Fujii H, Zhao Y, Lumba S, Santiago J, Rodrigues A, Chow TF, Alfred SE, Bonetta D, Finkelstein R, Provart NJ, Desveaux D, Rodriguez PL, McCourt P, Zhu JK,

- Schroeder JI, **Volkman BF** and Cutler SR, Abscisic Acid Inhibits Type 2C Protein Phosphatases via the PYR/PYL Family of START Proteins (2009) *Science*, 324 1068-71.
73. Melcher K, Ng L-M, Zhou XE, Soon F-F, Xu Y, Suino-Powell KM, Park S-Y, Weiner JJ, Fujii H, Chinnusamy V, Kovach A, Li J, Wang Y, Li J, Peterson FC, Jensen DR, Yong E-L, **Volkman BF**, Cutler SR, Zhu J-K, and Xu HE A Gate-Latch-Lock Mechanism for Signal Transduction by Abscisic Acid Receptors (2009) *Nature* 462 602-8.
74. Goodfellow BJ, Duarte I, Moura JJG, **Volkman BF**, Nunes, SG, Moura I, Markley JL, and Macedo AL, An NMR structural study of nickel substituted rubredoxin, (2010) *J Biol Inorg Chem* 15 409-20.
75. Jensen DR, Woytovich, C, Li M, Duvnjak P, Cassidy M, Frederick R, Bergeman, L, Peterson, FC, and **Volkman BF**, Rapid, robotic, small-scale protein production and screening for NMR structure determination, (2010) *Protein Science* 19 570-8.
76. Tyler RM, Peterson FC, and **Volkman BF**, Recognition of an extended PDZ ligand motif in the VE-cadherin C-terminus by the cell polarity protein Par-3, (2010) *Biochemistry* 49 951-7.
77. Peterson FC, Baden EM, Owen BA, **Volkman BF**, and Ramirez-Alvarado M, A single mutation promotes amyloidogenicity through a highly promiscuous dimer interface, (2010) *Structure* 18 563-70.
78. Veldkamp CT, Ziarek JJ, Peterson FC, Chen Y and **Volkman BF**, Targeting SDF-1/CXCL12 with a ligand that prevents activation of CXCR4 through structure based drug design, (2010) *J Am Chem Soc* 132 7242-3.
79. Olson LJ, Peterson FC, Castonguay A, Bohnsack RN, Kudo M, Gotschall RR, Canfield WM, **Volkman BF**, and Dahms, NM, Solution structure of domain 5 of the cation-independent mannose 6-phosphate receptor reveals mode of phosphodiester recognition (2010) *Proc Nat Acad Sci USA* 107 12493-8.
80. Peterson FC, Burgie ES, Park S-Y, Jensen DR, Weiner JJ, Bingman CA, Chang CA, Cutler SR, Phillips GN, and **Volkman BF**, Structural basis for selective activation of ABA receptors (2010) *Nature Structural and Molecular Biology* 17 1109-13.
81. Chandran K, McCracken J, Peterson FC, Antholine WE, **Volkman BF**, and Kalyanaraman B, Oxidation of Histidine Residues in Copper-Zinc Superoxide Dismutase by Bicarbonate-Stimulated Peroxidase and Thiol Oxidase Activities: Pulse EPR and NMR Studies (2010) *Biochemistry* 49 10616-22.
82. Sun Q, Tyler RC, **Volkman BF**, and Julian RR, Dynamic interchanging native states of lymphotactin examined by SNAPP-MS (2011) *J Am Soc Mass Spect* 22 399-407.
83. Ziarek JJ, Heroux MS, Veldkamp CT, Peterson FC, **Volkman BF**. Sulfotyrosine recognition as marker for druggable sites in the extracellular space. *Int J Mol Sci*. 2011;12(6):3740-56. PMID: PMC3131587
84. Tyler RC, Murray NJ, Peterson FC, **Volkman BF**. Native-state interconversion of a metamorphic protein requires global unfolding. *Biochemistry*. 2011 Aug 23;50(33):7077-9. PMID: PMC3160782
85. Johnston CA, Whitney DS, **Volkman BF**, Doe CQ, Prehoda KE. Conversion of the enzyme guanylate kinase into a mitotic-spindle orienting protein by a single mutation that inhibits GMP-induced closing. *Proc Natl Acad Sci U S A*. 2011 Nov 01;108(44):E973-8. PMID: PMC3207680
86. Drury LJ, Ziarek JJ, Gravel S, Veldkamp CT, Takekoshi T, Hwang ST, Heveker N, **Volkman BF**, Dwinell MB. Monomeric and dimeric CXCL12 inhibit metastasis through distinct CXCR4 interactions and signaling pathways. *Proc Natl Acad Sci U S A*. 2011 Oct 25;108(43):17655-60. PMID: PMC3203819
87. Paddock C, Lytle BL, Peterson FC, Holyst T, Newman PJ, **Volkman BF**, Newman DK. Residues within a lipid-associated segment of the PECAM-1 cytoplasmic domain are susceptible to inducible, sequential phosphorylation. *Blood*. 2011 Jun 02;117(22):6012-23. PMID: PMC3112045
88. Peterson FC, Chen D, Lytle BL, Rossi MN, Ahel I, Denu JM, **Volkman BF**. Orphan macrodomain protein (human C6orf130) is an O-acyl-ADP-ribose deacylase: solution structure and catalytic properties. *J Biol Chem*. 2011 Oct 14;286(41):35955-35965. PMID: PMC3195580
89. Saini V, Staren DM, Ziarek JJ, Nashaat ZN, Campbell EM, **Volkman BF**, Marchese A, Majetschak M. The CXC chemokine receptor 4 ligands ubiquitin and stromal cell-derived factor-1? function through distinct receptor interactions. *J Biol Chem*. 2011 Sep 23;286(38):33466-77. PMID: PMC3190899
90. Mosquna A, Peterson FC, Park SY, Lozano-Juste J, **Volkman BF**, Cutler SR. Potent and selective activation of abscisic acid receptors in vivo by mutational stabilization of their agonist-bound conformation. *Proc Natl Acad Sci U S A*. 2011 Dec 20;108(51):20838-43. PMID: PMC3251050
91. Whitney DS, Peterson FC, **Volkman BF**. A conformational switch in the CRIB-PDZ module of Par-6. *Structure*. 2011 Nov 09;19(11):1711-22. PMID: PMC3217198
92. Mysinger MM, Weiss DR, Ziarek JJ, Gravel S, Doak AK, Karpiak J, Heveker N, Shoichet BK, **Volkman BF**. Structure-based ligand discovery for the protein-protein interface of chemokine receptor CXCR4.

- Proc Natl Acad Sci U S A. 2012 Apr 03;109(14):5517-22. PMID: PMC3325704
93. DiCostanzo AC, Thompson JR, Peterson FC, **Volkman BF**, Ramirez-Alvarado M. Tyrosine residues mediate fibril formation in a dynamic light chain dimer interface. *J Biol Chem*. 2012 Aug 10;287(33):27997-8006. PMID: PMC3431636
 94. Takekoshi T, Ziarek JJ, **Volkman BF**, Hwang ST. A locked, dimeric CXCL12 variant effectively inhibits pulmonary metastasis of CXCR4-expressing melanoma cells due to enhanced serum stability. *Mol Cancer Ther*. 2012 Nov;11(11):2516-25. PMID: PMC3496366
 95. Elgin ES, Sökmen N, Peterson FC, **Volkman BF**, Da? C, Haas AL. E2-binding surface on Uba3 ?-grasp domain undergoes a conformational transition. *Proteins*. 2012 Oct;80(10):2482-7.
 96. Ducett JK, Peterson FC, Hoover LA, Prunuske AJ, **Volkman BF**, Craig EA. Unfolding of the C-terminal domain of the J-protein Zuo1 releases autoinhibition and activates Pdr1-dependent transcription. *J Mol Biol*. 2013 Jan 09;425(1):19-31. PMID: PMC3534791
 97. Ziarek JJ, Liu Y, Smith E, Zhang G, Peterson FC, Chen J, Yu Y, Chen Y, **Volkman BF**, Li R. Fragment-based optimization of small molecule CXCL12 inhibitors for antagonizing the CXCL12/CXCR4 interaction. *Curr Top Med Chem*. 2012;12(24):2727-40. PMID: PMC3839847
 98. Ziarek JJ, **Volkman BF**. NMR in the Analysis of Functional Chemokine Interactions and Drug Discovery. *Drug Discov Today Technol*. 2012;9(4):e293-e299. PMID: PMC3499625
 99. Ziarek JJ, Veldkamp CT, Zhang F, Murray NJ, Kartz GA, Liang X, Su J, Baker JE, Linhardt RJ, **Volkman BF**. Heparin oligosaccharides inhibit chemokine (CXC motif) ligand 12 (CXCL12) cardioprotection by binding orthogonal to the dimerization interface, promoting oligomerization, and competing with the chemokine (CXC motif) receptor 4 (CXCR4) N terminus. *J Biol Chem*. 2013 Jan 04;288(1):737-46. PMID: PMC3537072
 100. Tyler RC, Wieting JC, Peterson FC, **Volkman BF**. Electrostatic optimization of the conformational energy landscape in a metamorphic protein. *Biochemistry*. 2012 Nov 13;51(45):9067-75. PMID: PMC3567213
 101. Okamoto M, Peterson FC, Defries A, Park SY, Endo A, Nambara E, **Volkman BF**, Cutler SR. Activation of dimeric ABA receptors elicits guard cell closure, ABA-regulated gene expression, and drought tolerance. *Proc Natl Acad Sci U S A*. 2013 Jul 16;110(29):12132-7. PMID: PMC3718107
 102. Ziarek JJ, Getschman AE, Butler SJ, Taleski D, Stephens B, Kufareva I, Handel TM, Payne RJ, **Volkman BF**. Sulfopeptide probes of the CXCR4/CXCL12 interface reveal oligomer-specific contacts and chemokine allostery. *ACS Chem Biol*. 2013 Sep 20;8(9):1955-63. PMID: PMC3783652
 103. Whitney DS, Peterson FC, Kovrigin EL, **Volkman BF**. Allosteric activation of the Par-6 PDZ via a partial unfolding transition. *J Am Chem Soc*. 2013 Jun 26;135(25):9377-83. PMID: PMC3736553
 104. Tripathi A, Saini V, Marchese A, **Volkman BF**, Tang WJ, Majetschak M. Modulation of the CXC chemokine receptor 4 agonist activity of ubiquitin through C-terminal protein modification. *Biochemistry*. 2013 Jun 18;52(24):4184-92. PMID: PMC4113718
 105. Anderson DM, Feix JB, Monroe AL, Peterson FC, **Volkman BF**, Haas AL, Frank DW. Identification of the major ubiquitin-binding domain of the *Pseudomonas aeruginosa* ExoU A2 phospholipase. *J Biol Chem*. 2013 Sep 13;288(37):26741-52. PMID: PMC3772220
 106. Waas M, Bhattacharya S, Chuppa S, Wu X, Jensen DR, Omasits U, Wollscheid B, **Volkman BF**, Noon KR, Gundry RL. Combine and conquer: surfactants, solvents, and chaotropes for robust mass spectrometry based analyses of membrane proteins. *Anal Chem*. 2014 Feb 04;86(3):1551-9. PMID: PMC4007983
 107. Verkaar F, van Offenbeek J, van der Lee MMC, van Lith LHCJ, Watts AO, Rops ALWMM, Aguilar DC, Ziarek JJ, van der Vlag J, Handel TM, **Volkman BF**, Proudfoot AEI, Vischer HF, Zaman GJR, Smit MJ. Chemokine cooperativity is caused by competitive glycosaminoglycan binding. *J Immunol*. 2014 Apr 15;192(8):3908-3914. PMID: PMC4198333
 108. Guzzo C, Fox J, Lin Y, Miao H, Cimbri R, **Volkman BF**, Fauci AS, Lusso P. The CD8-derived chemokine XCL1/lymphotactin is a conformation-dependent, broad-spectrum inhibitor of HIV-1. *PLoS Pathog*. 2013;9(12):e1003852. PMID: PMC3873461
 109. Tripathi A, Davis JD, Staren DM, **Volkman BF**, Majetschak M. CXC chemokine receptor 4 signaling upon co-activation with stromal cell-derived factor-1? and ubiquitin. *Cytokine*. 2014 Feb;65(2):121-5. PMID: PMC4615604
 110. Roy I, Veldkamp CT, **Volkman BF**, Dwinell MB. Chemokines in colitis: microRNA control. *Gut*. 2014 Aug;63(8):1202-4. PMID: PMC4608425
 111. Bach HH 4th, Wong YM, Tripathi A, Nevins AM, Gamelli RL, **Volkman BF**, Byron KL, Majetschak M.

- Chemokine (C-X-C motif) receptor 4 and atypical chemokine receptor 3 regulate vascular β -adrenergic receptor function. *Mol Med*. 2014 Oct 13;20(1):435-47. PMID: PMC4212013
112. Harvey SR, Porrini M, Konijnenberg A, Clarke DJ, Tyler RC, Langridge-Smith PR, MacPhee CE, **Volkman BF**, Barran PE. Dissecting the dynamic conformations of the metamorphic protein lymphotactin. *J Phys Chem B*. 2014 Oct 30;118(43):12348-59.
113. Smith EW, Liu Y, Getschman AE, Peterson FC, Ziarek JJ, Li R, **Volkman BF**, Chen Y. Structural analysis of a novel small molecule ligand bound to the CXCL12 chemokine. *J Med Chem*. 2014 Nov 26;57(22):9693-9. PMID: PMC4255719
114. Park SY, Peterson FC, Mosquna A, Yao J, **Volkman BF**, Cutler SR. Agrochemical control of plant water use using engineered abscisic acid receptors. *Nature*. 2015 Apr 23;520(7548):545-8.
115. Thomas MA, Buelow BJ, Nevins AM, Jones SE, Peterson FC, Gundry RL, Grayson MH, **Volkman BF**. Structure-function analysis of CCL28 in the development of post-viral asthma. *J Biol Chem*. 2015 Feb 13;290(7):4528-36. PMID: PMC4326855
116. Fox JC, Nakayama T, Tyler RC, Sander TL, Yoshie O, **Volkman BF**. Structural and agonist properties of XCL2, the other member of the C-chemokine subfamily. *Cytokine*. 2015 Feb;71(2):302-11. PMID: PMC4297508
117. Chadwick AC, Jensen DR, Peterson FC, **Volkman BF**, Sahoo D. Expression, purification and reconstitution of the C-terminal transmembrane domain of scavenger receptor BI into detergent micelles for NMR analysis. *Protein Expr Purif*. 2015 Mar;107:35-42. PMID: PMC4270826
118. Korkmaz EN, **Volkman BF**, Cui Q. Interplay of Electrostatics and Hydrophobic Effects in the Metamorphic Protein Human Lymphotactin. *J Phys Chem B*. 2015 Jul 30;119(30):9547-58.
119. Guzzo C, Fox JC, Miao H, **Volkman BF**, Lusso P. Structural Determinants for the Selective Anti-HIV-1 Activity of the All- β Alternative Conformer of XCL1. *J Virol*. 2015 Sep;89(17):9061-7. PMID: PMC4524057
120. Maule AF, Wright DP, Weiner JJ, Han L, Peterson FC, **Volkman BF**, Silvaggi NR, Ulijasz AT. The aspartate-less receiver (ALR) domains: distribution, structure and function. *PLoS Pathog*. 2015 Apr;11(4):e1004795. PMID: PMC4395418
121. Olson LJ, Jensen DR, **Volkman BF**, Kim JJ, Peterson FC, Gundry RL, Dahms NM. Bacterial expression of the phosphodiester-binding site of the cation-independent mannose 6-phosphate receptor for crystallographic and NMR studies. *Protein Expr Purif*. 2015 Jul;111:91-7. PMID: PMC4417374
122. Aceti DJ, Bingman CA, Wrobel RL, Frederick RO, Makino S, Nichols KW, Sahu SC, Bergeman LF, Blommel PG, Cornilescu CC, Gromek KA, Seder KD, Hwang S, Primm JG, Sabat G, Vojtki FC, **Volkman BF**, Zolnai Z, Phillips GN Jr, Markley JL, Fox BG. Expression platforms for producing eukaryotic proteins: a comparison of E. coli cell-based and wheat germ cell-free synthesis, affinity and solubility tags, and cloning strategies. *J Struct Funct Genomics*. 2015 Jun;16(2):67-80. PMID: PMC4430420
123. Harvey SR, Porrini M, Tyler RC, MacPhee CE, **Volkman BF**, Barran PE. Electron capture dissociation and drift tube ion mobility-mass spectrometry coupled with site directed mutations provide insights into the conformational diversity of a metamorphic protein. *Phys Chem Chem Phys*. 2015 Apr 28;17(16):10538-50.
124. Tripathi A, Vana PG, Chavan TS, Brueggemann LI, Byron KL, Tarasova NI, **Volkman BF**, Gaponenko V, Majetschak M. Heteromerization of chemokine (C-X-C motif) receptor 4 with β 1A/B-adrenergic receptors controls β 1-adrenergic receptor function. *Proc Natl Acad Sci U S A*. 2015 Mar 31;112(13):E1659-68. PMID: PMC4386352
125. Whitney DS, **Volkman BF**. Some (dis)assembly required: partial unfolding in the Par-6 allosteric switch. *Biophys Rev*. 2015 Jun 01;7(2):183-190. PMID: PMC4519835
126. Harvey SR, MacPhee CE, **Volkman BF**, Barran PE. The association and aggregation of the metamorphic chemokine lymphotactin with fondaparinux: from nm molecular complexes to μ m molecular assemblies. *Chem Commun (Camb)*. 2016 Jan 07;52(2):394-7.
127. Roy I, McAllister DM, Gorse E, Dixon K, Piper CT, Zimmerman NP, Getschman AE, Tsai S, Engle DD, Evans DB, **Volkman BF**, Kalyanaraman B, Dwinell MB. Pancreatic Cancer Cell Migration and Metastasis Is Regulated by Chemokine-Biased Agonism and Bioenergetic Signaling. *Cancer Res*. 2015 Sep 01;75(17):3529-42. PMID: PMC4560104
128. Fox JC, Tyler RC, Guzzo C, Tuinstra RL, Peterson FC, Lusso P, **Volkman BF**. Engineering Metamorphic Chemokine Lymphotactin/XCL1 into the GAG-Binding, HIV-Inhibitory Dimer Conformation. *ACS Chem Biol*. 2015 Nov 20;10(11):2580-8. PMID: PMC5028202
129. Migliorini E, Thakar D, Kühnle J, Sadir R, Dyer DP, Li Y, Sun C, **Volkman BF**, Handel TM, Coche-

- Guerente L, Fernig DG, Lortat-Jacob H, Richter RP. Cytokines and growth factors cross-link heparan sulfate. *Open Biol.* 2015 Aug;5(8). PMID: PMC4554917
130. Anderson DP, Whitney DS, Hanson-Smith V, Woznica A, Campodonico-Burnett W, **Volkman BF**, King N, Thornton JW, Prehoda KE. Evolution of an ancient protein function involved in organized multicellularity in animals. *Elife.* 2016 Jan 07;5:e10147. PMID: PMC4718807
131. Kiermaier E, Moussion C, Veldkamp CT, Gerardy-Schahn R, de Vries I, Williams LG, Chaffee GR, Phillips AJ, Freiberger F, Imre R, Taleski D, Payne RJ, Braun A, Förster R, Mechtler K, Mühlhoff M, **Volkman BF**, Sixt M. Polysialylation controls dendritic cell trafficking by regulating chemokine recognition. *Science.* 2016 Jan 08;351(6269):186-90. PMID: PMC5583642
132. Dyer DP, Salanga CL, **Volkman BF**, Kawamura T, Handel TM. The dependence of chemokine-glycosaminoglycan interactions on chemokine oligomerization. *Glycobiology.* 2016 Mar;26(3):312-26. PMID: PMC4736540
133. Veldkamp CT, Koplinski CA, Jensen DR, Peterson FC, Smits KM, Smith BL, Johnson SK, Lettieri C, Buchholz WG, Solheim JC, **Volkman BF**. Production of Recombinant Chemokines and Validation of Refolding. *Methods Enzymol.* 2016;570:539-65. PMID: PMC4811038
134. Whitney DS, Peterson FC, Kittell AW, Egner JM, Prehoda KE, **Volkman BF**. Binding of Crumbs to the Par-6 CRIB-PDZ Module Is Regulated by Cdc42. *Biochemistry.* 2016 Mar 15;55(10):1455-61. PMID: PMC5433836
135. Fox JC, Tyler RC, Peterson FC, Dyer DP, Zhang F, Linhardt RJ, Handel TM, **Volkman BF**. Examination of Glycosaminoglycan Binding Sites on the XCL1 Dimer. *Biochemistry.* 2016 Mar 01;55(8):1214-25. PMID: PMC4775286
136. Anderson DP, Whitney DS, Hanson-Smith V, Woznica A, Campodonico-Burnett W, **Volkman BF**, King N, Thornton JW, Prehoda KE. Correction: Evolution of an ancient protein function involved in organized multicellularity in animals. *Elife.* 2016 Jan 21;5:e14311. PMID: PMC4739758
137. Kleist AB, Getschman AE, Ziarek JJ, Nevins AM, Gauthier PA, Chevigné A, Szpakowska M, **Volkman BF**. New paradigms in chemokine receptor signal transduction: Moving beyond the two-site model. *Biochem Pharmacol.* 2016 Aug 15;114:53-68. PMID: PMC5145291
138. Smith EW, Nevins AM, Qiao Z, Liu Y, Getschman AE, Vankayala SL, Kemp MT, Peterson FC, Li R, **Volkman BF**, Chen Y. Structure-Based Identification of Novel Ligands Targeting Multiple Sites within a Chemokine-G-Protein-Coupled-Receptor Interface. *J Med Chem.* 2016 May 12;59(9):4342-51. PMID: PMC5600900
139. Whitney DS, Peterson FC, Kittell AW, Egner JM, Prehoda KE, **Volkman BF**. Correction to Binding of Crumbs to the Par-6 CRIB-PDZ Module Is Regulated by Cdc42. *Biochemistry.* 2016 Apr 05;55(13):2063. PMID: PMC5531046
140. Nevins AM, Subramanian A, Tapia JL, Delgado DP, Tyler RC, Jensen DR, Ouellette AJ, **Volkman BF**. A Requirement for Metamorphic Interconversion in the Antimicrobial Activity of Chemokine XCL1. *Biochemistry.* 2016 Jul 12;55(27):3784-93. PMID: PMC6956654
141. Smith EW, Lewandowski EM, Moussouras NA, Kroeck KG, **Volkman BF**, Veldkamp CT, Chen Y. Crystallographic Structure of Truncated CCL21 and the Putative Sulfotyrosine-Binding Site. *Biochemistry.* 2016 Oct 11;55(40):5746-5753. PMID: PMC5498006
142. Whitney DS, **Volkman BF**, Prehoda KE. Evolution of a Protein Interaction Domain Family by Tuning Conformational Flexibility. *J Am Chem Soc.* 2016 Nov 23;138(46):15150-15156. PMID: PMC5661941
143. Cimbri R, Peterson FC, Liu Q, Guzzo C, Zhang P, Miao H, Van Ryk D, Ambroggio X, Hurt DE, De Gioia L, **Volkman BF**, Dolan MA, Lusso P. Tyrosine-sulfated V2 peptides inhibit HIV-1 infection via coreceptor mimicry. *EBioMedicine.* 2016 Aug;10:45-54. PMID: PMC5006643
144. Evans AE, Tripathi A, LaPorte HM, Brueggemann LI, Singh AK, Albee LJ, Byron KL, Tarasova NI, **Volkman BF**, Cho TY, Gaponenko V, Majetschak M. New Insights into Mechanisms and Functions of Chemokine (C-X-C Motif) Receptor 4 Heteromerization in Vascular Smooth Muscle. *Int J Mol Sci.* 2016 Jun 20;17(5). PMID: PMC4926503
145. Roy I, Getschman AE, **Volkman BF**, Dwinell MB. Exploiting agonist biased signaling of chemokines to target cancer. *Mol Carcinog.* 2017 Mar;56(3):804-813. PMID: PMC5479419
146. Ziarek JJ, Kleist AB, London N, Raveh B, Montpas N, Bonnetterre J, St-Onge G, DiCosmo-Ponticello CJ, Koplinski CA, Roy I, Stephens B, Thelen S, Veldkamp CT, Coffman FD, Cohen MC, Dwinell MB, Thelen M, Peterson FC, Heveker N, **Volkman BF**. Structural basis for chemokine recognition by a G protein-coupled receptor and implications for receptor activation. *Sci Signal.* 2017 Mar 21;10(471). PMID: PMC5648539

147. Chadwick AC, Jensen DR, Hanson PJ, Lange PT, Proudfoot SC, Peterson FC, **Volkman BF**, Sahoo D. NMR Structure of the C-Terminal Transmembrane Domain of the HDL Receptor, SR-BI, and a Functionally Relevant Leucine Zipper Motif. *Structure*. 2017 Mar 07;25(3):446-457. PMID: PMC5575897
148. Eby JM, Abdelkarim H, Albee LJ, Tripathi A, Gao X, **Volkman BF**, Gaponenko V, Majetschak M. Functional and structural consequences of chemokine (C-X-C motif) receptor 4 activation with cognate and non-cognate agonists. *Mol Cell Biochem*. 2017 Oct;434(1-2):143-151. PMID: PMC5660673
149. Vaidya AS, Peterson FC, Yarmolinsky D, Merilo E, Verstraeten I, Park SY, Elzinga D, Kaundal A, Helander J, Lozano-Juste J, Otani M, Wu K, Jensen DR, Kollist H, **Volkman BF**, Cutler SR. A Rationally Designed Agonist Defines Subfamily IIIA Abscisic Acid Receptors As Critical Targets for Manipulating Transpiration. *ACS Chem Biol*. 2017 Nov 17;12(11):2842-2848.
150. Moussouras NA, Getschman AE, Lackner ER, Veldkamp CT, Dwinell MB, **Volkman BF**. Differences in Sulfotyrosine Binding amongst CXCR1 and CXCR2 Chemokine Ligands. *Int J Mol Sci*. 2017 Sep 03;18(9). PMID: PMC5618543
151. Albee LJ, Eby JM, Tripathi A, LaPorte HM, Gao X, **Volkman BF**, Gaponenko V, Majetschak M. α -Adrenergic Receptors Function Within Hetero-Oligomeric Complexes With Atypical Chemokine Receptor 3 and Chemokine (C-X-C motif) Receptor 4 in Vascular Smooth Muscle Cells. *J Am Heart Assoc*. 2017 Aug 17;6(8). PMID: PMC5586474
152. Phillips AJ, Taleski D, Koplinski CA, Getschman AE, Moussouras NA, Richard AM, Peterson FC, Dwinell MB, **Volkman BF**, Payne RJ, Veldkamp CT. CCR7 Sulfotyrosine Enhances CCL21 Binding. *Int J Mol Sci*. 2017 Aug 25;18(9). PMID: PMC5618506
153. Hall CL, Lytle BL, Jensen D, Hoff JS, Peterson FC, **Volkman BF**, Kristich CJ. Structure and Dimerization of IreB, a Negative Regulator of Cephalosporin Resistance in *Enterococcus faecalis*. *J Mol Biol*. 2017 Jul 21;429(15):2324-2336. PMID: PMC5527686
154. Szpakowska M, Nevins AM, Meyrath M, Rhainds D, D'huys T, Guité-Vinet F, Dupuis N, Gauthier PA, Counson M, Kleist A, St-Onge G, Hanson J, Schols D, **Volkman BF**, Heveker N, Chevigné A. Different contributions of chemokine N-terminal features attest to a different ligand binding mode and a bias towards activation of ACKR3/CXCR7 compared with CXCR4 and CXCR3. *Br J Pharmacol*. 2018 May;175(9):1419-1438. PMID: PMC5900987
155. Egner JM, Jensen DR, Olp MD, Kennedy NW, **Volkman BF**, Peterson FC, Smith BC, Hill RB. Development and Validation of 2D Difference Intensity Analysis for Chemical Library Screening by Protein-Detected NMR Spectroscopy. *Chembiochem*. 2018 Mar 02;19(5):448-458. PMID: PMC5844354
156. Cheng YH, Eby JM, LaPorte HM, **Volkman BF**, Majetschak M. Effects of cognate, non-cognate and synthetic CXCR4 and ACKR3 ligands on human lung endothelial cell barrier function. *PLoS One*. 2017;12(11):e0187949. PMID: PMC5681266
157. Getschman AE, Imai Y, Larsen O, Peterson FC, Wu X, Rosenkilde MM, Hwang ST, **Volkman BF**. Protein engineering of the chemokine CCL20 prevents psoriasisiform dermatitis in an IL-23-dependent murine model. *Proc Natl Acad Sci U S A*. 2017 Nov 21;114(47):12460-12465. PMID: PMC5703275
158. Albee LJ, LaPorte HM, Gao X, Eby JM, Cheng YH, Nevins AM, **Volkman BF**, Gaponenko V, Majetschak M. Identification and functional characterization of arginine vasopressin receptor 1A : atypical chemokine receptor 3 heteromers in vascular smooth muscle. *Open Biol*. 2018 Jan;8(1). PMID: PMC5795052
159. Thomas MA, He J, Peterson FC, Huppler AR, **Volkman BF**. The Solution Structure of CCL28 Reveals Structural Lability that Does Not Constrain Antifungal Activity. *J Mol Biol*. 2018 Sep 14;430(18 Pt B):3266-3282. PMID: PMC6103841
160. Thomas MA, Kleist AB, **Volkman BF**. Decoding the chemotactic signal. *J Leukoc Biol*. 2018 Aug;104(2):359-374. PMID: PMC6099250
161. Dishman AF, **Volkman BF**. Unfolding the Mysteries of Protein Metamorphosis. *ACS Chem Biol*. 2018 Jun 15;13(6):1438-1446. PMID: PMC6007232
162. Gao X, Albee LJ, **Volkman BF**, Gaponenko V, Majetschak M. Asymmetrical ligand-induced cross-regulation of chemokine (C-X-C motif) receptor 4 by α -adrenergic receptors at the heteromeric receptor complex. *Sci Rep*. 2018 Feb 09;8(1):2730. PMID: PMC5807542
163. Riutta SJ, Larsen O, Getschman AE, Rosenkilde MM, Hwang ST, **Volkman BF**. Mutational analysis of CCL20 reveals flexibility of N-terminal amino acid composition and length. *J Leukoc Biol*. 2018 Aug;104(2):423-434.
164. Elmansi AM, Awad ME, Eisa NH, Kondrikov D, Hussein KA, Aguilar-Pérez A, Herberg S, Periyasamy-

- Thandavan S, Fulzele S, Hamrick MW, McGee-Lawrence ME, Isales CM, **Volkman BF**, Hill WD. What doesn't kill you makes you stranger: Dipeptidyl peptidase-4 (CD26) proteolysis differentially modulates the activity of many peptide hormones and cytokines generating novel cryptic bioactive ligands. *Pharmacol Ther.* 2019 Jun;198:90-108. PMID: PMC7883480
165. Elmansi AM, Awad ME, Eisa NH, Kondrikov D, Hussein KA, Aguilar-Pérez A, Herberg S, Periyasamy-Thandavan S, Fulzele S, Hamrick MW, McGee-Lawrence ME, Isales CM, **Volkman BF**, Hill WD. What doesn't kill you makes you stranger: Dipeptidyl peptidase-4 (CD26) proteolysis differentially modulates the activity of many peptide hormones and cytokines generating novel cryptic bioactive ligands. *Pharmacol Ther.* 2019 Jun;198:90-108. PMID: PMC7883480
166. Wedemeyer MJ, Mueller BK, Bender BJ, Meiler J, **Volkman BF**. Modeling the complete chemokine-receptor interaction. *Methods Cell Biol.* 2019;149:289-314. PMID: PMC6790067
167. Wedemeyer MJ, Mueller BK, Bender BJ, Meiler J, **Volkman BF**. Modeling the complete chemokine-receptor interaction. *Methods Cell Biol.* 2019;149:289-314. PMID: PMC6790067
168. Kleist AB, Peterson F, Tyler RC, Gustavsson M, Handel TM, **Volkman BF**. Solution NMR spectroscopy of GPCRs: Residue-specific labeling strategies with a focus on ¹³C-methyl methionine labeling of the atypical chemokine receptor ACKR3. *Methods Cell Biol.* 2019;149:259-288. PMID: PMC6941889
169. Hitchinson B, Eby JM, Gao X, Guite-Vinet F, Ziarek JJ, Abdelkarim H, Lee Y, Okamoto Y, Shikano S, Majetschak M, Heveker N, **Volkman BF**, Tarasova NI, Gaponenko V. Biased antagonism of CXCR4 avoids antagonist tolerance. *Sci Signal.* 2018 Oct 16;11(552). PMID: PMC6422681
170. Gao X, Abdelkarim H, Albee LJ, **Volkman BF**, Gaponenko V, Majetschak M. Partial agonist activity of β 1-adrenergic receptor antagonists for chemokine (C-X-C motif) receptor 4 and atypical chemokine receptor 3. *PLoS One.* 2018;13(9):e0204041. PMID: PMC6152952
171. DiCostanzo AC, Thompson JR, Peterson FC, **Volkman BF**, Ramirez-Alvarado M. Tyrosine residues mediate fibril formation in a dynamic light chain dimer interface (*The Journal of Biological Chemistry* (2012) 287 (27997-28006)) *Journal of Biological Chemistry.* 12 October 2012;287(42):35541.
172. Tuinstra R, Peterson F, Kutlesa S, Elgin ES, Kron M, **Volkman B**. Interconversion between two unrelated protein folds in the lymphotactin native state *Chemtracts.* March 2008;21(3):94-95.
173. Peterson FC, Hayes PL, Waltner JK, Heisner AK, Jensen DR, Sander TL, **Volkman BF**. Erratum to "Structure of the SCAN Domain from the Tumor Suppressor Protein MZF1" [*J. Mol. Biol.* 363 (2006) 137-147] (DOI:10.1016/j.jmb.2006.07.063) *Journal of Molecular Biology.* 9 February 2007;366(1):346.
174. Dias JS, Macedo AL, Ferreira GC, Peterson FC, **Volkman BF**, Goodfellow BJ. Erratum:The first structure from the SOUL/HBP family of heme-binding proteins, murine P22HBP (*Journal of Biological Chemistry* (2006) 281, (31553-31561)) *Journal of Biological Chemistry.* 15 December 2006;281(50):38966.
175. Markley JL, Ulrich EL, Westler WM, **Volkman BF**. Macromolecular Structure Determination by NMR Spectroscopy *Structural Bioinformatics.* 28 January 2005:89-113.
176. Tikhonov I, Kitabwalla M, Wallace M, Malkovsky M, **Volkman B**, Pauza CD. Staphylococcal superantigens induce lymphotactin production by human CD4+ and CD8+ T cells. *Cytokine.* 2001 Oct 21;16(2):73-8.
177. **Volkman BF**, Wilkens SJ, Lee AL, Xia B, Westler WM, Beger R, Markley JL. Redox-dependent magnetic alignment of *Clostridium pasteurianum* rubredoxin: Measurement of magnetic susceptibility anisotropy and prediction of pseudocontact shift contributions *Journal of the American Chemical Society.* 19 May 1999;121(19):4677-4683.
178. Dangi B, Blankman JI, Miller CJ, **Volkman BF**, Guiles RD. Contribution of backbone dynamics to entropy changes occurring on oxidation of cytochrome *b₅*. Can redox linked changes in hydrogen bond networks modulate reduction potentials? *Journal of Physical Chemistry B.* 15 October 1998;102(42):8201-8208.
179. Wilkens SJ, Xia B, **Volkman BF**, Weinhold F, Markley JL, Westler WM. Inadequacies of the point-dipole approximation for describing electron-nuclear interactions in paramagnetic proteins: Hybrid density functional calculations and the analysis of NMR relaxation of high-spin iron(III) rubredoxin *Journal of Physical Chemistry B.* 15 October 1998;102(42):8300-8305.
180. Satterlee JD, **Volkman BF**, Alara SL, Markley JL. The solution structure of co-ligated glycera dibranchiata monomer hemoglobin component iv allows rational functional redesign *FASEB Journal.* 1997;11(9).
181. Ellman JA, **Volkman BF**, Mendel DE, Schultz PG, Wemmer DE. Site-Specific Isotopic Labeling of Proteins for NMR Studies *Journal of the American Chemical Society.* 1 September

- 1992;114(20):7959-7961.
182. Wedemeyer MJ, Mueller BK, Bender BJ, Meiler J, **Volkman BF**. Comparative modeling and docking of chemokine-receptor interactions with Rosetta Biochemical and Biophysical Research Communications. 2020.
 183. Vaidya AS, Helander JDM, Peterson FC, Elzinga D, Dejonghe W, Kaundal A, Park SY, Xing Z, Mega R, Takeuchi J, Khanderahoo B, Bishay S, **Volkman BF**, Todoroki Y, Okamoto M, Cutler SR. Dynamic control of plant water use using designed ABA receptor agonists. *Science*. 2019 Oct 25;366(6464).
 184. Fox JC, Thomas MA, Dishman AF, Larsen O, Nakayama T, Yoshie O, Rosenkilde MM, **Volkman BF**. Structure-function guided modeling of chemokine-GPCR specificity for the chemokine XCL1 and its receptor XCR1. *Sci Signal*. 2019 Sep 03;12(597). PMID: PMC6733756
 185. Elmansi AM, Hussein KA, Herrero SM, Periyasamy-Thandavan S, Aguilar-Pérez A, Kondrikova G, Kondrikov D, Eisa NH, Pierce JL, Kaiser H, Ding KH, Walker AL, Jiang X, Bollag WB, Elsalanty M, Zhong Q, Shi Xm, Su Y, Johnson M, Hunter M, Reitman C, **Volkman BF**, Hamrick MW, Isales CM, Fulzele S, McGee-Lawrence ME, Hill WD. Age-related increase of kynurenine enhances miR29b-1-5p to decrease both CXCL12 signaling and the epigenetic enzyme Hdac3 in bone marrow stromal cells *Bone Reports*. June 2020;12.
 186. Dishman AF, Lee MW, de Anda J, Lee EY, He J, Huppler AR, Wong GCL, **Volkman BF**. Switchable Membrane Remodeling and Antifungal Defense by Metamorphic Chemokine XCL1. *ACS Infect Dis*. 2020 May 08;6(5):1204-1213. PMID: PMC7258946
 187. Moussouras NA, Hjortø GM, Peterson FC, Szpakowska M, Chevigné A, Rosenkilde MM, **Volkman BF**, Dwinell MB. Structural Features of an Extended C-Terminal Tail Modulate the Function of the Chemokine CCL21. *Biochemistry*. 2020 Apr 07;59(13):1338-1350. PMID: PMC7307649
 188. Gao X, Enten GA, DeSantis AJ, **Volkman BF**, Gaponenko V, Majetschak M. Characterization of heteromeric complexes between chemokine (C-X-C motif) receptor 4 and α -adrenergic receptors utilizing intermolecular bioluminescence resonance energy transfer assays. *Biochem Biophys Res Commun*. 2020 Jul 23;528(2):368-375. PMID: PMC7937191
 189. Lau S, Feitzinger A, Venkiteswaran G, Wang J, Lewellis SW, Koplinski CA, Peterson FC, **Volkman BF**, Meier-Schellersheim M, Knaut H. A negative-feedback loop maintains optimal chemokine concentrations for directional cell migration. *Nat Cell Biol*. 2020 Mar;22(3):266-273. PMID: PMC7809593
 190. Wedemeyer MJ, Mueller BK, Bender BJ, Meiler J, **Volkman BF**. Comparative modeling and docking of chemokine-receptor interactions with Rosetta. *Biochem Biophys Res Commun*. 2020 Jul 23;528(2):389-397. PMID: PMC7295663
 191. Babu FS, Liang X, Enten GA, DeSantis AJ, **Volkman BF**, Gao X, Majetschak M. Natural and engineered chemokine (C-X-C motif) receptor 4 agonists prevent acute respiratory distress syndrome after lung ischemia-reperfusion injury and hemorrhage *Scientific Reports*. 1 December 2020;10(1).
 192. He J, Thomas MA, de Anda J, Lee MW, Van Why E, Simpson P, Wong GCL, Grayson MH, **Volkman BF**, Huppler AR. Chemokine CCL28 Is a Potent Therapeutic Agent for Oropharyngeal Candidiasis. *Antimicrob Agents Chemother*. 2020 Jul 22;64(8). PMID: PMC7526824
 193. Elmansi AM, Hussein KA, Herrero SM, Periyasamy-Thandavan S, Aguilar-Pérez A, Kondrikova G, Kondrikov D, Eisa NH, Pierce JL, Kaiser H, Ding KH, Walker AL, Jiang X, Bollag WB, Elsalanty M, Zhong Q, Shi XM, Su Y, Johnson M, Hunter M, Reitman C, **Volkman BF**, Hamrick MW, Isales CM, Fulzele S, McGee-Lawrence ME, Hill WD. Age-related increase of kynurenine enhances miR29b-1-5p to decrease both CXCL12 signaling and the epigenetic enzyme Hdac3 in bone marrow stromal cells. *Bone Rep*. 2020 Jun;12:100270. PMID: PMC7210406
 194. Dishman AF, Peterson FC, **Volkman BF**. Specific binding-induced modulation of the XCL1 metamorphic equilibrium *Biopolymers*. 2020.
 195. Dishman AF, Peterson FC, **Volkman BF**. Specific binding-induced modulation of the XCL1 metamorphic equilibrium. *Biopolymers*. 2021 Oct;112(10):e23402. PMID: PMC8004533
 196. Wedemeyer MJ, Mahn SA, Getschman AE, Crawford KS, Peterson FC, Marchese A, McCorvy JD, **Volkman BF**. The chemokine X-factor: Structure-function analysis of the CXC motif at CXCR4 and ACKR3. *J Biol Chem*. 2020 Oct 02;295(40):13927-13939. PMID: PMC7535910
 197. Babu FS, Liang X, Enten GA, DeSantis AJ, **Volkman BF**, Gao X, Majetschak M. Natural and engineered chemokine (C-X-C motif) receptor 4 agonists prevent acute respiratory distress syndrome after lung ischemia-reperfusion injury and hemorrhage. *Sci Rep*. 2020 Jul 09;10(1):11359. PMID: PMC7347544
 198. Dishman AF, Tyler RC, Fox JC, Kleist AB, Prehoda KE, Babu MM, Peterson FC, **Volkman BF**. Evolution

- of fold switching in a metamorphic protein. *Science*. 2021 Jan 01;371(6524):86-90. PMID: PMC8017559
199. Chi YI, Stodola TJ, De Assuncao TM, Leverence EN, Tripathi S, Dsouza NR, Mathison AJ, Basel DG, **Volkman BF**, Smith BC, Lomber G, Zimmermann MT, Urrutia R. Molecular mechanics and dynamic simulations of well-known Kabuki syndrome-associated KDM6A variants reveal putative mechanisms of dysfunction. *Orphanet J Rare Dis*. 2021 Feb 05;16(1):66. PMID: PMC7866879
 200. Ren X, Getschman AE, Hwang S, **Volkman BF**, Klonisch T, Levin D, Zhao M, Santos S, Liu S, Cheng J, Lin F. Investigations on T cell transmigration in a human skin-on-chip (SoC) model. *Lab Chip*. 2021 Apr 20;21(8):1527-1539. PMID: PMC8058301
 201. Parashar D, Geethadevi A, McAllister D, Ebben J, Peterson FC, Jensen DR, Bishop E, Pradeep S, **Volkman BF**, Dwinell MB, Chaluvally-Raghavan P, James MA. Targeted biologic inhibition of both tumor cell-intrinsic and intercellular CLPTMIL/CRR9-mediated chemotherapeutic drug resistance. *NPJ Precis Oncol*. 2021 Mar 02;5(1):16. PMID: PMC7925570
 202. Shi Z, Garcia-Melchor E, Wu X, Getschman AE, Nguyen M, Rowland DJ, Wilson M, Sunzini F, Akbar M, Huynh M, Law T, Raychaudhuri SK, Raychaudhuri SP, **Volkman BF**, Millar NL, Hwang ST. Targeting the CCR6/CCL20 Axis in Enteseal and Cutaneous Inflammation. *Arthritis Rheumatol*. 2021 Dec;73(12):2271-2281.
 203. Dishman AF, He J, **Volkman BF**, Huppler AR. Metamorphic Protein Folding Encodes Multiple Anti-*Candida* Mechanisms in XCL1. *Pathogens*. 2021 Jun 17;10(6). PMID: PMC8235156
 204. Rheinemann L, Thompson T, Mercenne G, Paine EL, Peterson FC, **Volkman BF**, Alam SL, Alian A, Sundquist WI. Interactions between AMOT PPxY motifs and NEDD4L WW domains function in HIV-1 release. *J Biol Chem*. 2021 Aug;297(2):100975. PMID: PMC8368996
 205. Eisa NH, Sudharsan PT, Herrero SM, Herberg SA, **Volkman BF**, Aguilar-Pérez A, Kondrikov D, Elmansi AM, Reitman C, Shi X, Fulzele S, McGee-Lawrence ME, Isales CM, Hamrick MW, Johnson MH, Chen J, Hill WD. Age-associated changes in microRNAs affect the differentiation potential of human mesenchymal stem cells: Novel role of miR-29b-1-5p expression. *Bone*. 2021 Dec;153:116154. PMID: PMC8935397
 206. Gutjahr JC, Crawford KS, Jensen DR, Naik P, Peterson FC, Samson GPB, Legler DF, Duchene J, Veldkamp CT, Rot A, **Volkman BF**. The dimeric form of CXCL12 binds to atypical chemokine receptor 1. *Sci Signal*. 2021 Aug 17;14(696). PMID: PMC9015690
 207. Gutjahr JC, Crawford KS, Jensen DR, Naik P, Peterson FC, Samson GPB, Legler DF, Duchene J, Veldkamp CT, Rot A, **Volkman BF**. The dimeric form of CXCL12 binds to atypical chemokine receptor 1. *Sci Signal*. 2021 Aug 17;14(696). PMID: PMC9015690
 208. Vaidya AS, Peterson FC, Eckhardt J, Xing Z, Park SY, Dejonghe W, Takeuchi J, Pri-Tal O, Faria J, Elzinga D, **Volkman BF**, Todoroki Y, Mosquana A, Okamoto M, Cutler SR. Click-to-lead design of a picomolar ABA receptor antagonist with potent activity in vivo. *Proc Natl Acad Sci U S A*. 2021 Sep 21;118(38). PMID: PMC8463862
 209. Stodola TJ, Chi YI, De Assuncao TM, Leverence EN, Tripathi S, Dsouza NR, Mathison AJ, **Volkman BF**, Smith BC, Lomber G, Zimmermann MT, Urrutia R. Computational modeling reveals key molecular properties and dynamic behavior of disruptor of telomeric silencing 1-like (DOT1L) and partnering complexes involved in leukemogenesis. *Proteins*. 2022 Jan;90(1):282-298. PMID: PMC8671179
 210. Jørgensen AS, Brandum EP, Mikkelsen JM, Orfin KA, Boilesen DR, Egerod KL, Moussouras NA, Vilhardt F, Kalinski P, Basse P, Chen YH, Yang Z, Dwinell MB, **Volkman BF**, Veldkamp CT, Holst PJ, Lahl K, Goth CK, Rosenkilde MM, Hjortø GM. The C-terminal peptide of CCL21 drastically augments CCL21 activity through the dendritic cell lymph node homing receptor CCR7 by interaction with the receptor N-terminus. *Cell Mol Life Sci*. 2021 Nov;78(21-22):6963-6978. PMID: PMC8558179
 211. Sprague DJ, Getschman AE, Fenske TG, **Volkman BF**, Smith BC. Trisubstituted 1,3,5-Triazines: The First Ligands of the sY12-Binding Pocket on Chemokine CXCL12 *ACS Medicinal Chemistry Letters*. 2021.
 212. Sprague DJ, Getschman AE, Fenske TG, **Volkman BF**, Smith BC. Trisubstituted 1,3,5-Triazines: The First Ligands of the sY12-Binding Pocket on Chemokine CXCL12. *ACS Med Chem Lett*. 2021 Nov 11;12(11):1773-1782. PMID: PMC8592115
 213. Brandum EP, Jørgensen AS, Calvo MB, Spiess K, Peterson FC, Yang Z, **Volkman BF**, Veldkamp CT, Rosenkilde MM, Goth CK, Hjortø GM. Selective Boosting of CCR7-Acting Chemokines; Short Peptides Boost Chemokines with Short Basic Tails, Longer Peptides Boost Chemokines with Long Basic Tails *International Journal of Molecular Sciences*. February-1 2022;23(3).
 214. Elmansi AM, Hussein KA, Herrero SM, Periyasamy-Thandavan S, Aguilar-Pérez A, Kondrikova G,

- Kondrikov D, Eisa NH, Pierce JL, Kaiser H, Ding KH, Walker AL, Jiang X, Bollag WB, Elsalanty M, Zhong Q, Shi XM, Su Y, Johnson M, Hunter M, Reitman C, **Volkman BF**, Hamrick MW, Isales CM, Fulzele S, McGee-Lawrence ME, Hill WD. Age-related increase of kynurenine enhances miR29b-1-5p to decrease both CXCL12 signaling and the epigenetic enzyme Hdac3 in bone marrow stromal cells. *Bone Rep.* 2020 Jun;12:100270. PMID: PMC7210406
215. Elmansi AM, Hussein KA, Herrero SM, Periyasamy-Thandavan S, Aguilar-Pérez A, Kondrikova G, Kondrikov D, Eisa NH, Pierce JL, Kaiser H, Ding KH, Walker AL, Jiang X, Bollag WB, Elsalanty M, Zhong Q, Shi XM, Su Y, Johnson M, Hunter M, Reitman C, **Volkman BF**, Hamrick MW, Isales CM, Fulzele S, McGee-Lawrence ME, Hill WD. Age-related increase of kynurenine enhances miR29b-1-5p to decrease both CXCL12 signaling and the epigenetic enzyme Hdac3 in bone marrow stromal cells. *Bone Rep.* 2020 Jun;12:100270. PMID: PMC7210406
216. Lewandowski EM, Kroeck KG, Jacobs LMC, Fenske TG, Witt RN, Hintz AM, Ramsden ER, Zhang X, Peterson F, **Volkman BF**, Veldkamp CT, Chen Y. Structural Insights into Molecular Recognition by Human Chemokine CCL19. *Biochemistry.* 2022 Mar 01;61(5):311-318. PMID: PMC9254573
217. Brandum EP, Jørgensen AS, Calvo MB, Spiess K, Peterson FC, Yang Z, **Volkman BF**, Veldkamp CT, Rosenkilde MM, Goth CK, Hjortø GM. Selective Boosting of CCR7-Acting Chemokines; Short Peptides Boost Chemokines with Short Basic Tails, Longer Peptides Boost Chemokines with Long Basic Tails. *Int J Mol Sci.* 2022 Jan 26;23(3). PMID: PMC8836243
218. Berg C, Wedemeyer MJ, Melynys M, Schlinggen RR, Hansen LH, Våbenø J, Peterson FC, **Volkman BF**, Rosenkilde MM, Lüttichau HR. The non-ELR CXC chemokine encoded by human cytomegalovirus UL146 genotype 5 contains a C-terminal γ -hairpin and induces neutrophil migration as a selective CXCR2 agonist. *PLoS Pathog.* 2022 Mar;18(3):e1010355. PMID: PMC8939814
219. Gupta P, Kadamberi IP, Mittal S, Tsaih SW, George J, Kumar S, Vijayan DK, Geethadevi A, Parashar D, Topchyan P, McAlarnen L, **Volkman BF**, Cui W, Zhang KYJ, Di Vizio D, Chaluvally-Raghavan P, Pradeep S. Tumor Derived Extracellular Vesicles Drive T Cell Exhaustion in Tumor Microenvironment through Sphingosine Mediated Signaling and Impacting Immunotherapy Outcomes in Ovarian Cancer. *Adv Sci (Weinh).* 2022 May;9(14):e2104452. PMID: PMC9108620
220. Chi YI, Stodola TJ, De Assuncao TM, Leverence EN, Smith BC, **Volkman BF**, Mathison AJ, Lomber G, Zimmermann MT, Urrutia R. Structural bioinformatics enhances the interpretation of somatic mutations in KDM6A found in human cancers. *Comput Struct Biotechnol J.* 2022;20:2200-2211. PMID: PMC9111933
221. Chi YI, Stodola TJ, de Assuncao TM, **Volkman B**, Smith B, Mathison AJ, Lomber G, Zimmermann MT, Urrutia R. Defining the Mutational Landscape That Affects the Histone Demethylase KDM6A/UTX in Human Cancer. *FASEB J.* 2022 May;36 Suppl 1.
222. Jorge SD, Chi YI, de Assuncao TM, Mathison AJ, **Volkman B**, Smith B, Lomber G, Zimmermann MT, Urrutia R. Integrative Modeling, Molecular Mechanics, and Molecular Dynamics Evaluation of Genomics Variants in KMT2C (MLL3), a Gene Involved in Kleefstra Syndrome Type 2. *FASEB J.* 2022 May;36 Suppl 1.
223. Dishman AF, **Volkman BF**. Design and discovery of metamorphic proteins. *Curr Opin Struct Biol.* 2022 Jun;74:102380. PMID: PMC9664977
224. Powers HR, Jenjak SE, **Volkman BF**, Sahoo D. A Tale of Two Scavenger Receptors: Structure-Function Relationships of Purified SR-B1 and CD36. *FASEB J.* 2022 May;36 Suppl 1.
225. Schlinggen R, Peterson F, Heukers R, Smit M, McCorvy J, **Volkman B**. Structural Basis of Nanobody Induced ACKR3 Inhibition *FASEB journal : official publication of the Federation of American Societies for Experimental Biology.* 1 May 2022;36.
226. D'Uonno G, Reynders N, Meyrath M, Abboud D, Ucha?ski T, Laeremans T, **Volkman BF**, Janji B, Hanson J, Szpakowska M, Chevigné A. The Extended N-Terminal Domain Confers Atypical Chemokine Receptor Properties to CXCR3-B. *Front Immunol.* 2022;13:868579. PMID: PMC9198273
227. Beltrán J, Steiner PJ, Bedewitz M, Wei S, Peterson FC, Li Z, Hughes BE, Hartley Z, Robertson NR, Medina-Cucurella AV, Baumer ZT, Leonard AC, Park SY, **Volkman BF**, Nusinow DA, Zhong W, Wheeldon I, Cutler SR, Whitehead TA. Rapid biosensor development using plant hormone receptors as reprogrammable scaffolds. *Nat Biotechnol.* 2022 Dec;40(12):1855-1861. PMID: PMC9750858
228. Kleist AB, Jenjak S, Sente A, Laskowski LJ, Szpakowska M, Calkins MM, Anderson EI, McNally LM, Heukers R, Bobkov V, Peterson FC, Thomas MA, Chevign?? A, Smit MJ, McCorvy JD, Babu MM, **Volkman BF**. Conformational selection guides I[?]-arrestin recruitment at a biased G proteina^{??}coupled receptor *Science.* 8 July 2022;377(6602):222-228.

229. Kleist AB, Jenjak S, Sente A, Laskowski LJ, Szpakowska M, Calkins MM, Anderson EI, McNally LM, Heukers R, Bobkov V, Peterson FC, Thomas MA, Chevné A, Smit MJ, McCorvy JD, Babu MM, **Volkman BF**. Conformational selection guides β -arrestin recruitment at a biased G protein-coupled receptor. *Science*. 2022 Jul 08;377(6602):222-228. PMID: PMC9574477
230. Shishodia S, Nuñez R, Strohmier BP, Bursch KL, Goetz CJ, Olp MD, Jensen DR, Fenske TG, Ordonez-Rubiano SC, Blau ME, Roach MK, Peterson FC, **Volkman BF**, Dykhuizen EC, Smith BC. Selective and Cell-Active PBRM1 Bromodomain Inhibitors Discovered through NMR Fragment Screening. *J Med Chem*. 2022 Oct 27;65(20):13714-13735. PMID: PMC9630929
231. Nguyen KTP, **Volkman B**, Dréau D, Nesselova IV. A new obligate CXCL4–CXCL12 heterodimer for studying chemokine heterodimer activities and mechanisms *Scientific Reports*. December 2022;12(1).
232. Elmansi AM, Eisa NH, Periyasamy-Thandavan S, Kondrikova G, Kondrikov D, Calkins MM, Aguilar-Pérez A, Chen J, Johnson M, Shi XM, Reitman C, McGee-Lawrence ME, Crawford KS, Dwinell MB, **Volkman BF**, Blumer JB, Luttrell LM, McCorvy JD, Hill WD. DPP4-Truncated CXCL12 Alters CXCR4/ACKR3 Signaling, Osteogenic Cell Differentiation, Migration, and Senescence *ACS Pharmacology and Translational Science*. 2022.
233. Elmansi AM, Eisa NH, Periyasamy-Thandavan S, Kondrikova G, Kondrikov D, Calkins MM, Aguilar-Pérez A, Chen J, Johnson M, Shi XM, Reitman C, McGee-Lawrence ME, Crawford KS, Dwinell MB, **Volkman BF**, Blumer JB, Luttrell LM, McCorvy JD, Hill WD. DPP4-Truncated CXCL12 Alters CXCR4/ACKR3 Signaling, Osteogenic Cell Differentiation, Migration, and Senescence. *ACS Pharmacol Transl Sci*. 2023 Jan 13;6(1):22-39. PMID: PMC9844133
234. Haver HN, Wedemeyer M, Butcher E, Peterson FC, **Volkman BF**, Scaglione KM. Mechanistic Insight into the Suppression of Polyglutamine Aggregation by SRCP1. *ACS Chem Biol*. 2023 Mar 17;18(3):549-560. PMID: PMC10023506
235. Zhou AL, Jensen DR, Peterson FC, Thomas MA, Schlimgen RR, Dwinell MB, Smith BC, **Volkman BF**. Fragment-based drug discovery of small molecule ligands for the human chemokine CCL28. *SLAS Discov*. 2023 Jun;28(4):163-169. PMID: PMC10339762
236. Kim DE, Jensen DR, Feldman D, Tischer D, Saleem A, Chow CM, Li X, Carter L, Milles L, Nguyen H, Kang A, Bera AK, Peterson FC, **Volkman BF**, Ovchinnikov S, Baker D. De novo design of small beta barrel proteins. *Proc Natl Acad Sci U S A*. 2023 Mar 14;120(11):e2207974120. PMID: PMC10089152
237. Wu X, Clarke WR, Koplinski CA, Peterson FC, Dwinell MB, Wei G, Chao E, Huynh M, Yamada D, **Volkman BF**, Hwang ST. A modified ELISA assay differentiates CCL20 locked dimers from wild-type monomers. *J Immunol Methods*. 2023 Apr;515:113453. PMID: PMC10715733
238. Shi ZR, Mabuchi T, Riutta SJ, Wu X, Peterson FC, **Volkman BF**, Hwang ST. The Chemokine, CCL20, and Its Receptor, CCR6, in the Pathogenesis and Treatment of Psoriasis and Psoriatic Arthritis *Journal of Psoriasis and Psoriatic Arthritis*. 2023.
239. Crawford KS, **Volkman BF**. Prospects for targeting ACKR1 in cancer and other diseases *Frontiers in Immunology*. 2023;14.
240. Crawford KS, **Volkman BF**. Prospects for targeting ACKR1 in cancer and other diseases. *Front Immunol*. 2023;14:1111960. PMID: PMC10050359
241. Ratnasinghe BD, Haque N, Wagenknecht JB, Jensen DR, Esparza GV, Leverence EN, De Assuncao TM, Mathison AJ, Lomber G, Smith BC, **Volkman BF**, Urrutia R, Zimmermann MT. Beyond Structural Bioinformatics for Genomics with Dynamics Characterization of an Expanded KRAS Mutational Landscape. *bioRxiv*. 2023 Apr 28. PMID: PMC10189839
242. Dishman AF, **Volkman BF**. Metamorphic protein folding as evolutionary adaptation. *Trends Biochem Sci*. 2023 Aug;48(8):665-672. PMID: PMC10526677
243. Kerber PJ, Nuñez R, Jensen DR, Zhou AL, Peterson FC, Hill RB, **Volkman BF**, Smith BC. Fragment-based screening by protein-detected NMR spectroscopy *Methods in Enzymology*. 2023.
244. Praetorius F, Leung PJY, Tessmer MH, Broerman A, Demakis C, Dishman AF, Pillai A, Idris A, Juergens D, Dauparas J, Li X, Levine PM, Lamb M, Ballard RK, Gerben SR, Nguyen H, Kang A, Sankaran B, Bera AK, **Volkman BF**, Nivala J, Stoll S, Baker D. Design of stimulus-responsive two-state hinge proteins. *Science*. 2023 Aug 18;381(6659):754-760. PMID: PMC10697137
245. Powers HR, Jenjak SE, **Volkman BF**, Sahoo D. Development and validation of a purification system for functional full-length human SR-B1 and CD36. *J Biol Chem*. 2023 Oct;299(10):105187. PMID: PMC10509710
246. Chi YI, Jorge SD, Jensen DR, Smith BC, **Volkman BF**, Mathison AJ, Lomber G, Zimmermann MT, Urrutia R. A Multi-Layered Computational Structural Genomics Approach Enhances Domain-Specific

- Interpretation of Kleefstra Syndrome Variants in EHMT1. *bioRxiv*. 2023 Sep 07. PMID: PMC10541560
247. Jorge SD, Chi YI, Mazaba JL, Haque N, Wagenknecht J, Smith BC, **Volkman BF**, Mathison AJ, Lombek G, Zimmermann MT, Urrutia R. Deep computational phenotyping of genomic variants impacting the SET domain of KMT2C reveal molecular mechanisms for their dysfunction. *Front Genet*. 2023;14:1291307. PMID: PMC10715303
248. Park SY, Qiu J, Wei S, Peterson FC, Beltrán J, Medina-Cucurella AV, Vaidya AS, Xing Z, **Volkman BF**, Nusinow DA, Whitehead TA, Wheeldon I, Cutler SR. An orthogonalized PYR1-based CID module with reprogrammable ligand-binding specificity. *Nat Chem Biol*. 2024 Jan;20(1):103-110. PMID: PMC10746540
249. Ratnasinghe BD, Haque N, Wagenknecht JB, Jensen DR, Valdivia Esparza GK, Leverence EN, Milech De Assuncao T, Mathison AJ, Lombek G, Smith BC, **Volkman BF**, Urrutia R, Zimmermann MT. Beyond structural bioinformatics for genomics with dynamics characterization of an expanded KRAS mutational landscape *Computational and Structural Biotechnology Journal*. January 2023;21:4790-4803.
250. Chi YI, Jorge SD, Jensen DR, Smith BC, **Volkman BF**, Mathison AJ, Lombek G, Zimmermann MT, Urrutia R. A multi-layered computational structural genomics approach enhances domain-specific interpretation of Kleefstra syndrome variants in EHMT1 *Computational and Structural Biotechnology Journal*. January 2023;21:5249-5258.
251. Schlimgen RR, Peterson FC, Heukers R, Smit MJ, McCorvy JD, **Volkman BF**. Structural basis for selectivity and antagonism in extracellular GPCR-nanobodies. *Nat Commun*. 2024 May 30;15(1):4611. PMID: PMC11139983
252. Chi YI, Jorge SD, Jensen DR, Smith BC, **Volkman BF**, Mathison AJ, Lombek G, Zimmermann MT, Urrutia R. A multi-layered computational structural genomics approach enhances domain-specific interpretation of Kleefstra syndrome variants in EHMT1. *Comput Struct Biotechnol J*. 2023;21:5249-5258. PMID: PMC10632586
253. Kerber PJ, Nuñez R, Jensen DR, Zhou AL, Peterson FC, Hill RB, **Volkman BF**, Smith BC. Fragment-based screening by protein-detected NMR spectroscopy. *Methods Enzymol*. 2023;690:285-310. PMID: PMC10657026
254. Ratnasinghe BD, Haque N, Wagenknecht JB, Jensen DR, Valdivia Esparza GK, Leverence EN, Milech De Assuncao T, Mathison AJ, Lombek G, Smith BC, **Volkman BF**, Urrutia R, Zimmermann MT. Beyond structural bioinformatics for genomics with dynamics characterization of an expanded KRAS mutational landscape. *Comput Struct Biotechnol J*. 2023;21:4790-4803. PMID: PMC10570560
255. Pontejo SM, Martinez S, Zhao A, Barnes K, de Anda J, Alimohamadi H, Lee EY, Dishman AF, **Volkman BF**, Wong GCL, Garboczi DN, Ballesteros A, Murphy PM. Chemokines Kill Bacteria by Binding Anionic Phospholipids without Triggering Antimicrobial Resistance. *bioRxiv*. 2024 Jul 25. PMID: PMC11291121
256. Shi ZR, Mabuchi T, Riutta SJ, Wu X, Peterson FC, **Volkman BF**, Hwang ST. The Chemokine, CCL20, and Its Receptor, CCR6, in the Pathogenesis and Treatment of Psoriasis and Psoriatic Arthritis. *J Psoriasis Psoriatic Arthritis*. 2023 Jul;8(3):107-117. PMID: PMC11361516
257. Xu T, Schou AS, Lackman JJ, Barrio-Calvo M, Verhallen L, Goth CK, Jensen BAH, Veldkamp CT, **Volkman BF**, Peterson FC, Hjortø GM. Chemokine Receptor N-Terminus Charge Dictates Reliance on Post-Translational Modifications for Effective Ligand Capture and Following Boosting by Defense Peptides. *Int J Mol Sci*. 2024 Oct 09;25(19). PMID: PMC11477141
258. Zhang BB, Harrison K, Zhong Y, Maxwell JWC, Ford DJ, Calvey LP, So SS, Peterson FC, **Volkman BF**, Stone MJ, Bhusal RP, Kulkarni SS, Payne RJ. Discovery of Selective Cyclic d-Sulfopeptide Ligands of the Chemokine CCL22 via Mirror-Image mRNA Display with Genetic Reprogramming *Journal of the American Chemical Society*. 2024.
259. Zhang X, Schlimgen RR, Singh S, Tomani MP, **Volkman BF**, Zhang C. Molecular basis for chemokine recognition and activation of XCR1. *Proc Natl Acad Sci U S A*. 2024 Nov 26;121(48):e2405732121. PMID: PMC11621518
260. Luís R, **Volkman BF**, Szpakowska M, Chevigné A. Extended repertoire of CXC chemokines acting as agonists and antagonists of the human and murine atypical chemokine receptor ACKR2. *J Leukoc Biol*. 2025 Apr 23;117(4). PMID: PMC12017343
261. Syed M, Dishman AF, **Volkman BF**, Walker TL. The multifaceted role of XCL1 in health and disease. *Protein Sci*. 2025 Feb;34(2):e70032. PMID: PMC11751857
262. Zhang BB, Harrison K, Zhong Y, Maxwell JWC, Ford DJ, Calvey LP, So SS, Peterson FC, **Volkman BF**,

- Stone MJ, Bhusal RP, Kulkarni SS, Payne RJ. Discovery of Selective Cyclic d-Sulfopeptide Ligands of the Chemokine CCL22 via Mirror-Image mRNA Display with Genetic Reprogramming. *J Am Chem Soc.* 2024 Dec 18;146(50):34253-34259.
263. Perez Almeria CV, Otun O, Schlimgen R, Lamme TD, Crudden C, Youssef N, Musli L, Jenjak S, Bobkov V, Drube J, Hoffmann C, **Volkman BF**, Granier S, Bechara C, Siderius M, Heukers R, Schafer CT, Smit MJ. Constitutive activity of an atypical chemokine receptor revealed by inverse agonistic nanobodies. *bioRxiv.* 2024 Nov 04. PMID: PMC11580867

Books, Chapters, and Reviews

1. Aceti, DJ, Blommel, PG, Endo, Y, Fox, BG, Frederick, RO, Hegeman, AD, Jeon, WB, Kimball, TL, Lee, JM, Newman, CS, Peterson, FC, Sawasaki, T, Seder, KD, Sussman, MR, Ulrich, EL, Wrobel, RL, Thao, S, Vinarov, DA, Volkman, BF and Zhao, Q, Role of Nucleic Acid and Protein Manipulation Technologies in High-Throughput Structural Biology Effort (2002) in *Biopolymers. Volume 4: Polyamides and Complex Proteinaceous Materials (Part B)*, Steinbüchel, A. Ed., Wiley-VCH Verlag GmbH, Weinheim, Germany.
2. Markley, JL, Ulrich, EL, Westler, WM, and Volkman, BF, *Macromolecular Structure Determination by NMR Spectroscopy*, (2003) *Methods Biochem. Anal.*, 44, 89-113.
3. Volkman, BF, Lytle, BL and Wu, JHD, Dockerin domains (2004) in *Handbook of Metalloproteins, Volume 3* (W. Bode, A. Messerschmidt and M. Cygler, eds.), Wiley and Sons, Chichester.
4. Markley, JL, Bahrami, A, Eghbalian, HR, Peterson, FC, Ulrich, EL, Westler, WM, and Volkman, BF *Macromolecular structure determination by NMR spectroscopy*, (2008) *Structural Bioinformatics 2nd edition* John Wiley & Sons, Inc.
5. Peterson, FC and Volkman, BF Diversity of polyproline recognition by EVH1 domains, (2009), *Front Biosci* 14 833-46.
6. Volkman, BF, Liu, TY and Peterson, FC, Lymphotactin Structural Dynamics (2009) *Methods in Enzymology* 461 51-70.
7. Weiner JJ, Peterson FC, **Volkman BF**, Cutler SR. Structural and functional insights into core ABA signaling (2010) *Curr Opin Plant Biol* 13 495-502.
8. Ziarek JJ, Peterson FC, Lytle BL, **Volkman BF**. Binding Site Identification and Structure Determination of Protein-Ligand Complexes by NMR: A Semiautomated Approach (2011) *Methods in Enzymology* 493 241-75.

Editorials, Letters To Editor, Other

1. Invention disclosure, filed January 7, 2010, Structure-based discovery of small molecule chemokine inhibitors Brian F. Volkman, Yu Chen and Christopher Veldkamp.
2. USPTO Non-provisional application 12/380,308 filed 2/26/2009, Engineered CXCL 12 Alpha Locked Dimer Polypeptide Brian F. Volkman, Christopher T. Veldkamp, Francis C. Peterson, Thomas Sakmar, and Christoph Seibert; MCW #1548; Q&B #650053.00133. Major provisions allowed; final issue pending.
3. Invention disclosure, filed July 26, 2006, Procedure for on-column refolding of recombinant chemokines from protein inclusion bodies Brian F. Volkman, Francis C. Peterson and Christopher T. Veldkamp.
4. Invention disclosure, filed June 20, 2006, Plasmid DNA for expression of mutant human chemokine XCL1/Ltn-V21C/V59C Brian F. Volkman and Francis C. Peterson.

Database, Video, or Other Research/Clinical Contributions

1. 1NTR, SOLUTION STRUCTURE OF THE N-TERMINAL RECEIVER DOMAIN OF NTRC, SOLUTION NMR, 9/16/94, Volkman, B.F., Nohaile, M.J., Amy, N.K., Kustu, S., Wemmer, D.E.
2. 1B1V, NMR STRUCTURE OF PSP1, PLASMATOCYTE-SPREADING PEPTIDE FROM PSEUDOPUSIA INCLUDENS, SOLUTION NMR, 11/23/98, Volkman, B.F., Clark, K.D., Anderson, M.E., Pech, L.L., Markley, J.L., Strand, M.R.
3. 1B3I, NMR SOLUTION STRUCTURE OF PLASTOCYANIN FROM THE PHOTOSYNTHETIC PROKARYOTE, PROCHLOROTHRIX HOLLANDICA (MINIMIZED AVERAGE STRUCTURE), SOLUTION NMR, 12/11/98, Babu, C.R., Volkman, B.F., Bullerjahn, G.S.
4. 1B5N, NMR STRUCTURE OF PSP1, PLASMATOCYTE-SPREADING PEPTIDE FROM PSEUDOPUSIA INCLUDENS, SOLUTION NMR, 1/7/99, Volkman, B.F., Clark, K.D., Anderson, M.E., Pech, L.L., Markley, J.L., Strand, M.R.
5. 1BUB, DETERMINATION OF INTERNUCLEAR ANGLES OF DNA USING PARAMAGNETIC ASSISTED MAGNETIC ALIGNMENT, SOLUTION NMR, 9/3/98, Marathias, V.M., Beger, R.D.,

- Bolton, P.H.
6. 1DAQ, SOLUTION STRUCTURE OF THE TYPE I DOCKERIN DOMAIN FROM THE CLOSTRIDIUM THERMOCELLUM CELLULOSOME (MINIMIZED AVERAGE STRUCTURE), SOLUTION NMR, 10/31/99, Lytle, B.L., Volkman, B.F., Westler, W.M., Heckman, M.P., Wu, J.H.D.
 7. 1DAV, SOLUTION STRUCTURE OF THE TYPE I DOCKERIN DOMAIN FROM THE CLOSTRIDIUM THERMOCELLUM CELLULOSOME (20 STRUCTURES), SOLUTION NMR, 10/31/99, Lytle, B.L., Volkman, B.F., Westler, W.M., Heckman, M.P., Wu, J.H.D.
 8. 1DC7, STRUCTURE OF A TRANSIENTLY PHOSPHORYLATED "SWITCH" IN BACTERIAL SIGNAL TRANSDUCTION, SOLUTION NMR, 11/4/99, Kern, D., Volkman, B.F., Luginbuhl, P., Nohaile, M.J., Kustu, S., Wemmer, D.E.
 9. 1DC8, STRUCTURE OF A TRANSIENTLY PHOSPHORYLATED "SWITCH" IN BACTERIAL SIGNAL TRANSDUCTION, SOLUTION NMR, 11/4/99, Kern, D., Volkman, B.F., Luginbuhl, P., Nohaile, M.J., Kustu, S., Wemmer, D.E.
 10. 1DV5, TERTIARY STRUCTURE OF APO-D-ALANYL CARRIER PROTEIN, SOLUTION NMR, 1/19/00, Volkman, B.F., Zhang, Q., Debabov, D.V., Rivera, E., Kresheck, G.C., Neuhaus, F.C.
 11. 1HQB, TERTIARY STRUCTURE OF APO-D-ALANYL CARRIER PROTEIN, SOLUTION NMR, 12/14/00, Volkman, B.F., Zhang, Q., Debabov, D.V., Rivera, E., Kresheck, G., Neuhaus, F.C.
 12. 1J8I, Solution Structure of Human Lymphotactin, SOLUTION NMR, 5/21/01, Kuloglu, E.S., McCaslin, D.R., Markley, J.L., Pauza, C.D., Volkman, B.F.
 13. 1J9O, SOLUTION STRUCTURE OF HUMAN LYMPHOTACTIN, SOLUTION NMR, 5/28/01, Kuloglu, E.S., McCaslin, D.R., Kitabwalla, M., Pauza, C.D., Markley, J.L., Volkman, B.F.
 14. 1JJZ, REFINED STRUCTURE AND DISULFIDE PAIRING OF THE KALATA B1 PEPTIDE, SOLUTION NMR, 7/10/01, Skjeldal, L., Gran, L., Sletten, K., Volkman, B.F.
 15. 1K48, REFINED STRUCTURE AND DISULFIDE PAIRING OF THE KALATA B1 PEPTIDE, SOLUTION NMR, 10/5/01, Skjeldal, L., Gran, L., Sletten, K., Volkman, B.F.
 16. 1MKE, Structure of the N-WASP EVH1 Domain-WIP complex, SOLUTION NMR, 8/29/02, Volkman, B.F., Prehoda, K.E., Scott, J.A., Peterson, F.C., Lim, W.A.
 17. 1Q4R, Gene Product of At3g17210 from Arabidopsis Thaliana, X-RAY DIFFRACTION, 8/4/03, Phillips Jr., G.N., Bingman, C.A., Johnson, K.A., Smith, D.W., Center for Eukaryotic Structural Genomics (CESG)
 18. 1Q53, SOLUTION STRUCTURE OF HYPOTHETICAL ARABIDOPSIS THALIANA PROTEIN AT3G17210. CENTER FOR EUKARYOTIC STRUCTURAL GENOMICS TARGET 13081, SOLUTION NMR, 8/6/03, Lytle, B.L., Peterson, F.C., Volkman, B.F., Center for Eukaryotic Structural Genomics (CESG)
 19. 1RY4, NMR Structure of the CRIB-PDZ module of Par-6, SOLUTION NMR, 12/19/03, Peterson, F.C., Penkert, R.R., Volkman, B.F., Prehoda, K.E.
 20. 1RZX, Crystal Structure of a Par-6 PDZ-peptide Complex, X-RAY DIFFRACTION, 12/29/03, Peterson, F.C., Penkert, R.R., Volkman, B.F., Prehoda, K.E.
 21. 1SE9, Structure of At3g01050, a ubiquitin-fold protein from Arabidopsis thaliana, SOLUTION NMR, 2/16/04, Volkman, B.F., Lytle, B.L., Peterson, F.C., Center for Eukaryotic Structural Genomics (CESG)
 22. 1SJG, Solution Structure of T4moC, the Rieske Ferredoxin Component of the Toluene 4-Monooxygenase Complex, SOLUTION NMR, 3/3/04, Skjeldal, L., Peterson, F.C., Doreleijers, J.F., Moe, L.A., Pikus, J.D., Volkman, B.F., Westler, W.M., Markley, J.L., Fox, B.G.
 23. 1T0Y, Solution Structure of a Ubiquitin-Like Domain from Tubulin-binding Cofactor B, SOLUTION NMR, 4/13/04, Lytle, B.L., Peterson, F.C., Qui, S.H., Luo, M., Volkman, B.F., Markley, J.L., Center for Eukaryotic Structural Genomics (CESG)
 24. 1VRE, SOLUTION STRUCTURE OF COMPONENT IV GLYCERA DIBRANCHIATA MONOMERIC HEMOGLOBIN-CO, SOLUTION NMR, 3/25/99, Volkman, B.F., Alam, S.L., Satterlee, J.D., Markley, J.L.
 25. 1VRF, SOLUTION STRUCTURE OF COMPONENT IV GLYCERA DIBRANCHIATA MONOMERIC HEMOGLOBIN-CO, SOLUTION NMR, 3/25/99, Volkman, B.F., Alam, S.L., Satterlee, J.D., Markley, J.L.
 26. 1XFL, Solution Structure of Thioredoxin h1 from Arabidopsis Thaliana, SOLUTION NMR, 9/15/04, Peterson, F.C., Lytle, B.L., Sampath, S., Vinarov, D., Tyler, E., Shahan, M., Markley, J.L., Volkman, B.F., Center for Eukaryotic Structural Genomics (CESG)
 27. 1YEL, Structure of the hypothetical Arabidopsis thaliana protein At1g16640.1, SOLUTION NMR, 12/28/04,

- Peterson, F.C., Waltner, J.K., Lytle, B.L., Volkman, B.F., Center for Eukaryotic Structural Genomics (CESG)
28. 1ZR9, Solution Structure of a Human C2H2-type Zinc Finger Protein, SOLUTION NMR, 5/19/05, Lytle, B.L., Peterson, F.C., Volkman, B.F., Center for Eukaryotic Structural Genomics (CESG)
 29. 2B3I, NMR SOLUTION STRUCTURE OF PLASTOCYANIN FROM THE PHOTOSYNTHETIC PROKARYOTE, PROCHLOROTHRIX HOLLANDICA (19 STRUCTURES), SOLUTION NMR, 12/11/98, Babu, C.R., Volkman, B.F., Bullerjahn, G.S.
 30. 2FI2, Solution structure of the SCAN homodimer from MZF-1/ZNF42, SOLUTION NMR, 12/27/05, Volkman, B.F., Peterson, F.C., Sander, T.L., Waltner, J.K., Center for Eukaryotic Structural Genomics (CESG)
 31. 2G0Q, Solution structure of At5g39720.1 from Arabidopsis thaliana, SOLUTION NMR, 2/13/06, Volkman, B.F., Peterson, F.C., Lytle, B.L., Center for Eukaryotic Structural Genomics (CESG)
 32. 2GOV, Solution structure of Murine p22HBP, SOLUTION NMR, 4/14/06, Volkman, B.F., Dias, J.S., Goodfellow, B.J., Peterson, F.C., Center for Eukaryotic Structural Genomics (CESG)
 33. 2GOW, Solution structure of BC059385 from Homo sapiens, SOLUTION NMR, 4/14/06, Volkman, B.F., de la Cruz, N.B., Lytle, B.L., Peterson, F.C., Center for Eukaryotic Structural Genomics (CESG)
 34. 2HDL, Solution structure of Brak/CXCL14, SOLUTION NMR, 6/20/06, Peterson, F.C., Thorpe, J.A., Harder, A.G., Volkman, B.F., Schwarze, S.R.
 35. 2HDM, Solution structure of V21C/V59C Lymphotactin/XCL1, SOLUTION NMR, 6/20/06, Volkman, B.F., Tuinstra, R.L., Peterson, F.C., Elgin, E.S.
 36. 2I9Y, Solution structure of Arabidopsis thaliana protein At1g70830, a member of the major latex protein family, SOLUTION NMR, 9/6/06, Volkman, B.F., de la Cruz, N.B., Lytle, B.L., Peterson, F.C., Center for Eukaryotic Structural Genomics (CESG)
 37. 2IFS, Structure of the N-WASP EVH1 domain in complex with an extended WIP peptide, SOLUTION NMR, 9/21/06, Volkman, B.F., Peterson, F.C., Deng, Q.
 38. 2JP1, Solution structure of the alternative conformation of XCL1/Lymphotactin, SOLUTION NMR, 4/17/07, Volkman, B.F., Tuinstra, R.L., Peterson, F.C.
 39. 2JQV, Solution structure At3g28950.1 from Arabidopsis thaliana, SOLUTION NMR, 6/7/07, Volkman, B.F., de la Cruz, N.B., Peterson, F.C., Center for Eukaryotic Structural Genomics (CESG)
 40. 2JYC, NMR solution structure of human protein C6orf130, a putative macro domain, SOLUTION NMR, 12/12/07, Volkman, B.F., Lytle, B.L., Peterson, F.C., Center for Eukaryotic Structural Genomics (CESG)
 41. 2K01, Structure of a locked SDF1 dimer, SOLUTION NMR, 1/23/08, Volkman, B.F., Veldkamp, C.T., Peterson, F.C.
 42. 2K03, Structure of SDF1 in complex with the CXCR4 N-terminus containing a sulfotyrosine at position 21, SOLUTION NMR, 1/24/08, Volkman, B.F., Veldkamp, C.T., Peterson, F.C.
 43. 2K04, Structure of SDF1 in complex with the CXCR4 N-terminus containing no sulfotyrosines, SOLUTION NMR, 1/24/08, Volkman, B.F., Veldkamp, C.T., Peterson, F.C.
 44. 2K05, Structure of SDF1 in complex with the CXCR4 N-terminus containing sulfotyrosines at positions 7, 12 and 21, SOLUTION NMR, 1/24/08, Volkman, B.F., Veldkamp, C.T., Peterson, F.C.
 45. 2KEC, Structure of SDF-1/CXCL12, SOLUTION NMR, , CYTOKINE, 9/29/09, 1/28/09, Volkman, B.F., Veldkamp, C.T., Peterson, F.C.
 46. 2KED, Structure of SDF-1/CXCL12, SOLUTION NMR, , CYTOKINE, 9/29/09, 1/28/09, Volkman, B.F., Veldkamp, C.T., Peterson, F.C.
 47. 2KEE, Structure of SDF-1/CXCL12, SOLUTION NMR, , CYTOKINE, 9/29/09, 1/28/09, Volkman, B.F., Veldkamp, C.T., Peterson, F.C.
 48. 2KOJ, Solution structure of mouse Par-3 PDZ2 (residues 450-558), SOLUTION NMR, , SIGNALING PROTEIN, 11/10/09, 9/23/09, Volkman, B.F., Tyler, R.C., Peterson, F.C., Center for Eukaryotic Structural Genomics (CESG)
 49. 2KOM, Solution structure of human Par-3b PDZ2 (residues 451-549), SOLUTION NMR, , SIGNALING PROTEIN, 11/10/09, 9/24/09, Volkman, B.F., Tyler, R.C., Peterson, F.C., Center for Eukaryotic Structural Genomics (CESG)
 50. 2QKZ, Nickel-substituted Rubredoxin from Desulfovibrio Vulgaris, SOLUTION NMR, , ELECTRON TRANSPORT, 7/8/08, 7/12/07, Goodfellow, B.J., Nunes, S.G., Volkman, B.F., Moura, J.J.G., Macedo, A.L., Duarte, I.C., Markley, J.L., Moura, I.
 51. 2QL0, Zinc-substituted Rubredoxin from Desulfovibrio Vulgaris, SOLUTION NMR, , ELECTRON TRANSPORT, 7/8/08, 7/12/07, Goodfellow, B.J., Nunes, S.G., Volkman, B.F., Moura, J.G., Macedo,

- A.L., Duarte, I.C., Markley, J.L., Moura, I.
52. 2KQR, Solution structure of the N-terminal domain (residues 1-111) of *Brugia malayi* asparaginyl-tRNA synthetase, SOLUTION NMR, , LIGASE, 12/15/09, 11/16/09, Volkman, B.F., Peterson, F.C., Kron, M.A., Center for Eukaryotic Structural Genomics (CESG).
 53. 2KQM, Solution structure of the KI O18/O8 Y87H immunoglobulin light chain variable domain, SOLUTION NMR, , IMMUNE SYSTEM, 2010-03-16, 2009-11-11, Volkman, B.F., Peterson, F.C., Ramirez-Alvarado, M., Baden, E.M.
 54. 2KQN, Solution structure of the AL-09 H87Y immunoglobulin light chain variable domain, SOLUTION NMR, , IMMUNE SYSTEM, 2010-03-16, 2009-11-11, Volkman, B.F., Peterson, F.C., Ramirez-Alvarado, M., Baden, E.M.
 55. 2KQR, Solution structure of the N-terminal domain (residues 1-111) of *Brugia malayi* asparaginyl-tRNA synthetase, SOLUTION NMR, , LIGASE, 2009-12-15, 2009-11-16, Volkman, B.F., Peterson, F.C., Kron, M.A., Center for Eukaryotic Structural Genomics (CESG)
 56. 2KVA, SOLUTION STRUCTURE OF CI-MPR ligand-free domain 5, SOLUTION NMR, , PROTEIN TRANSPORT, 2010-07-07, 2010-03-10, Olson, L.J., Peterson, F.C., Volkman, B.F., Dahms, N.M.
 57. 2KVB, Solution structure of CI-MPR domain 5 bound to N-acetylglucosaminyl 6-phosphomethylmannoside, SOLUTION NMR, , PROTEIN TRANSPORT, 2010-07-07, 2010-03-10, Olson, L.J., Peterson, F.C., Volkman, B.F., Dahms, N.M.
 58. 2KY5, Solution structure of the PECAM-1 cytoplasmic tail with DPC, SOLUTION NMR, , CELL ADHESION, 2010-05-26, 2010-05-14, Lytle, B.L., Peterson, F.C., Volkman, B.F., Paddock, C., Newman, D.K., Center for Eukaryotic Structural Genomics (CESG)
 59. 2QL0, Zinc-substituted Rubredoxin from *Desulfovibrio Vulgaris*, SOLUTION NMR, , ELECTRON TRANSPORT, 2008-07-08, 2007-07-12, Goodfellow, B.J., Nunes, S.G., Volkman, B.F., Moura, J.G., Macedo, A.L., Duarte, I.C., Markley, J.L., Moura, I.
 60. 3LHR, Crystal structure of the SCAN domain from Human ZNF24, X-RAY DIFFRACTION, , 1.90, TRANSCRIPTION REGULATOR, 2010-05-12, 2010-01-22, Volkman, B.F., Peterson, F.C., Bingman, C.A., Phillips, G.N., Center for Eukaryotic Structural Genomics (CESG)
 61. 3NJ0, X-ray crystal structure of the Py12-pyrabactin A complex, X-RAY DIFFRACTION, , 1.89, HORMONE RECEPTOR, 2010-08-18, 2010-06-16, Peterson, F.C., Burgie, E.S., Bingman, C.A., Volkman, B.F., Phillips Jr., G.N., Cutler, S.R., Jensen, D.R., Center for Eukaryotic Structural Genomics (CESG)
 62. 3NJ1, X-ray crystal structure of the Py12(V114I)-pyrabactin A complex, X-RAY DIFFRACTION, , 1.95, HORMONE RECEPTOR, 2010-08-18, 2010-06-16, Peterson, F.C., Burgie, E.S., Bingman, C.A., Volkman, B.F., Phillips Jr., G.N., Cutler, S.R., Jensen, D.R., Center for Eukaryotic Structural Genomics (CESG)
 63. 3NJO, X-ray crystal structure of the Pyr1-pyrabactin A complex, X-RAY DIFFRACTION, , 2.47, HORMONE RECEPTOR, 2010-08-18, 2010-06-17, Burgie, E.S., Bingman, C.A., Phillips Jr., G.N., Peterson, F.C., Volkman, B.F., Cutler, S.R., Jensen, D.R., Center for Eukaryotic Structural Genomics (CESG)