**CURRICULUM VITAE**

Faculty profile: <http://medschool.umaryland.edu/facultyresearchprofile/viewprofile.aspx?id=1438>

Date:  **Date:** June 9, 2017

**David J. Weber, Ph.D.**

***University of Maryland, Baltimore (UMB) School of Medicine***

Professor of Biochemistry & Molecular Biology

Professor of Medicine (Secondary Appointment)

Director, UMB NMR Center

Director, Center for Biomolecular Therapeutics (CBT)

***University of Maryland – College Park (UMCP)***

Professor of Chemistry & Biochemistry (Adjunct Appointment)

Associate Director, Institute of Biomedical and Bioscience Research

(IBBR/MPower)

**Primary Address and contact information:**

University of Maryland School of Medicine

Department of Biochemistry and Molecular Biology

108 North Greene St., Baltimore, MD 21201

Phones: (410) 706-4354 or (410) 706-4353 (lab; Baltimore, MD)

NMR ctr (410) 706-8335 or (410) 706-6085 (computer lab; Baltimore, MD)

IBBR (240) 314-6163 (Rockville, MD)

Fax: (410) 706-0458 (Baltimore, MD)

Email: [dweber@som.umaryland.edu](mailto:dweber@umaryland.edu)

Websites: <http://www.umaryland.edu/nmr>

<http://biochemistry.umaryland.edu/>

<http://medschool.umaryland.edu/CBT>

**Personal Information:**

Married: Alice K. Weber (9/17/1988); Children: Dylan (8/19/93), Brian (8/13/96)

Birth date: 07/29/62 Birthplace: Chestertown, MD

**Education:**

1992 Post-Doctoral Fellow

The Johns Hopkins University School of Medicine

Department of Biological Chemistry, Advisor: Dr. Albert S. Mildvan

1988 Ph.D., University of North Carolina, Chapel Hill, NC

Department of Chemistry, Advisor: Dr. Richard G. Hiskey

*Dissertation*: "Investigation of Gla-domain Peptides of Prothrombin Binding to Synthetic Phospholipid Membranes"

1984 B.S., Chemistry

Muhlenberg College, Allentown, PA

**MAJOR RESEARCH INTERESTS**. Several projects in the Weber laboratory involve examining the structure and function of S100 proteins, including S100B, a growth factor in the brain and skin. S100B is a dimeric Ca2+-binding protein that is overproduced during gliosis in patients with Alzheimer disease, Down syndrome, and Aids related dementia. In addition, S100B and/or other members of the S100 protein family are elevated in cancers including tumors involving skin, lung, bladder, kidney, cervix, breast, head and neck, larynx, lymph, and mouth to name a few. In addition to being biomarkers, overproduction of S100 proteins is now recognized as a problem that contributes to the up-regulation of cell growth in these diseases. Presumably, the function of S100B is related to its ability to bind a variety of target proteins in a Ca2+-dependent manner. One such target is the tumor suppressor protein, p53. For this protein, the Weber lab and their collaborators have shown that up-regulation of S100B abrogates p53 transcription activation and apoptosis functions in cancer. Therefore, the initial focus was to determine, at atomic resolution, the mechanism by which S100B affects p53 transcription activation and promotes uncontrolled cell growth. In this regard, the three-dimensional structures of apo-S100B, S100B-Ca2+, and the S100B-Ca2+-p53 peptide complexes were determined using NMR spectroscopy, which clearly illustrated why the S100B-p53 protein-protein interaction was calcium-dependent. Such structural studies were also imperative for the efficient design of biochemistry and the molecular biology experiments that have led to an understanding of how S100B inhibits p53 function. Knowledge about the structure and function of S100B is also being used to discover/design molecules that inhibit the S100B-p53 complex and restore p53 tumor suppression function in cancers with elevated S100B levels and wild-type p53, such as malignant melanoma. Several such inhibitors have been discovered, designed, and characterized, and one advanced to a human phase 2 clinical trial done by our collaborator, Dr. Ed Sausville (<http://clinicaltrials.gov/ct/show/NCT00729807>), and several patents for inhibiting S100 proteins as a means to treat cancer are being processed and/or were issued. As the Director of the Center of Biomolecular Therapeutics (CBT), the Director of the Program of Molecular & Structural Biology, and the Co-director of the Greenebaum Cancer Center Structural Biology Shared Service, our lab also works with PI's throughout the University System of Maryland (USM) and the Greenebaum Cancer Center on numerous structural and drug design projects, as part of service activities and via collaborative efforts. Such efforts involve state-of-the-art scientific discipline-based programs necessary for the discovery and regulation of disease targets including, but not limited to, genomics/bioinformatics, target identification & validation, assay development & high-throughput screening, protein production & characterization, structural biology, computer-aided drug design, medicinal chemistry, and *in vivo* testing & biology.

**PROFESSIONAL EXPERIENCE**

2004-present Professor (Tenured)

University of Maryland School of Medicine

Department of Biochemistry and Molecular Biology

2012-present Professor (secondary appointment)

University of Maryland School of Medicine

Department of Medicine

2011-present Adjunct Professor

University of Maryland, College Park

Department of Chemistry & Biochemistry

2011-present Director, Center of Biomolecular Therapeutics (CBT)

University System of Maryland (USM)

2011-present Associate Director, Institute of Bioscience and Biotechnology Research (IBBR)

University System of Maryland (USM)

2011-present Program leader & Member, Molecular and Structural Biology Program (MSB)

Marlene and Stuart Greenebaum Cancer Center

2016-present Member, Center for Biomolecular Engineering & Technology (BioMET)

University of Maryland School of Medicine

2009-2011 Director, High-Throughput Screening Shared Service (HTSSS)

University of Maryland, School of Medicine

Marlene and Stuart Greenebaum Cancer Center

(This center is now incorporated into the Center for Biomolecular Therapeutics)

1995-present Director, UMB-NMR Facility

University of Maryland at Baltimore

(This Facility is now within the Center for Biomolecular Therapeutics)

2001-2009 Director, Intercampus Biochemistry Doctoral Program

University of Maryland, Baltimore & University of Maryland, Baltimore County (<http://www.umaryland.edu/bmb/graduate>)

2009-2011 Co-Director, Intercampus Biochemistry Doctoral Program

University of Maryland, Baltimore & University of Maryland, Baltimore County (<http://www.umaryland.edu/bmb/graduate>)

2006-2007 Professor and Interim Department Chairman

Department of Biochemistry and Molecular Biology

University of Maryland School of Medicine

1999-2004 Associate Professor (Tenured)

University of Maryland School of Medicine

Department of Biochemistry and Molecular Biology

1993-1998 Assistant Professor (Tenure track)

University of Maryland School of Medicine

1992-1993 Assistant Professor, Part-time at UMB (20%) and Johns Hopkins University

School of Medicine (80%) while setting up lab at UMB

1988-1992 National Research Service Award (NSRA) - Post-Doctoral Fellow

The Johns Hopkins University School of Medicine

Department of Biological Chemistry (Advisor: Dr. Albert S. Mildvan)

1985-1988 Research Assistant-Department of Chemistry

University of North Carolina-Chapel Hill

(Advisor: Dr. Richard G. Hiskey)

1984-1985 Teaching Assistant-Department of Chemistry

University of North Carolina-Chapel Hill

**PROFESSIONAL MEMBERSHIPS**

1984-present American Chemical Society

1980-present American Association for the Advancement of Science

1990-present Biophysical Society

1992-present New York Academy of Sciences

1992-present American Society of Biochemistry and Molecular Biology

1997-present European Calcium Society

**HONORS AND AWARDS**

1984 University of North Carolina First-Year Graduate Fellow Award

1989-1992 National Research Service Award (P.I., NIH-Post Doctoral Award)

1992 The Johns Hopkins University School of Medicine Young Investigator Award

1993-1996 Special Research Initiative Support-University of Maryland School of Medicine

1994-1999 First Independent Research Award (P.I., NIH-R29; First sub; score: 123; 2.2%)

1995-1996 Shared Instrumentation Grant Award (P.I., NIH-S10; First sub.; score: 143)

1995 Multidisciplinary Special Emphasis Panel Member for NIH PPGs

1995 Cambridge Research Grant Recipient

1995 Panel Member for Review of NIH Shared Instrumentation Grants

1996-present *Ad hoc* Panel Member for Review of NSF Biophysical Chemistry Grants

1996 Invited Lecturer at the *Fourth European Symp. On Ca2+-Binding Proteins in*

*Normal and Transformed Cells (Perugia, Italy).*

1996-1999 American Cancer Society Junior Faculty Research Award (P.I., ACS-JFRA)

1997 Grad. Student Research Day Award 1st place in Biochemistry (Alex Drohat)

1997 Grad. Student Research Day Award 2nd place in Biochemistry (Todd Tenenholz)

1997-present *Ad hoc* Panel Member for Review of NIH National Research Service Awards

1998-present *Ad hoc* Panel Member for Review of ACS Petroleum Research Fund Grants

1998 Organizing Committee - Biophysical Society National Meeting (1999)

1998 Invited Lecturer for the *18th International Conference of Magnetic Resonance*

*in Biological Systems (Tokyo, Japan).*

1998-2002 NIH grant award (PI: NIH-R01; First submission)

1. Invited Lecturer for the *American Chemical Society Meeting (Memphis, TN)*
2. *Ad hoc* Panel Member for Review of NIH Grants (R01, R03, R15, etc)
3. 1999-present Full Panel Member for Review of DBS NIH Grants

1999 Invited Lecturer for the *International Symposium on Calcium-binding Proteins*

*and Calcium Function in Health and Disease (Tokyo, Japan)*

2000, 2001 Grad. Student Research Day Award 1st place in Biochemistry (Keith Inman)

2000 Grad. Student Research Day Award 1st place in Biochemistry (Karen Ellis)

* 1. Full Panel Member for Review of NIH Grants (BBCA study section)
  2. American Cancer Society Project Grant Award (PI; Top grant in study section

from over 200 grants; First submission)

2000 Invited Lecturer for the *19th International Conference of Magnetic Resonance*

*in Biological Systems (Florence, Italy)*

2001 Grad. Student Research Day Award 1st place in Biochemistry (Kristen Vallely)

2001 Grad. Student Research Day Award 2nd place in Biochemistry (Karen Ellis)

2001 Panel Member for the review of Israel Science Foundation Grant applications

2001 Invited Lecturer for the *ACS Middle Atlantic Research Meeting* *(Baltimore, MD)*

2002 Grad. Student Research Day Award 1st place in Biochem. (Joseph Markowitz)

2002 Invited to *American Cancer Society. 18th International Cancer Congress (travel*

*Award granted; Oslo, Norway)*

2003 Grad. Student Research Day Award 1st place in Biochemistry (Paul Wilder)

2003 Grad. Student Research Day Award 1st place in Cancer Research (Jing Lin)

2004 Invited Lecturer for 2004 *NMRS International Conference in NMR spectroscopy*

(Calcutta, India)

2004 American Cancer Society Research Scholar Award (Top score in study section)

2004 Invited Visiting Professor, Mayo Clinic (Rochester, MN)

2004 Board of Scientific Counselors (ad hoc member), The National Institutes of

Health, for the intramural review of Molecular and Structural Biology Unit (MSBU)

2005 Invited Lecturer for the *21st International Conference of Magnetic Resonance in*

*Biological Systems* (Hyderabad, India)

2006 Invited Lecturer for the *9th European Symposium on Ca2+-Binding Proteins in*

*Normal and Transformed Cells* (Strasbourg, Germany)

1. American Cancer Society Celebration on the Hill – Selected as an Ambassador

for Maryland Congressional District 3 (Washington, D.C.)

1. Invited Plenary Lecturer for the *Biophysical Society National Meeting* (Baltimore, Maryland)
2. Invited Lecturer and Session Co-Chair, International Protein and Peptide Conference (PepCon-2008) (Shenzhen, China)
3. Invited Visiting Professor, Vanderbilt University (Nashville, TN)
4. Invited Lecturer, *NMR symposium at the Center for Advanced Research*

*in Biotechnology* (Rockville, MD)

1. Panel member for review of K99, S10, and Challenge Grant Awards (NIH)
2. Elected as faculty representative of the Executive Council in the University of

Maryland School of Medicine (2009-2012)

2009 Keynote speaker, *First Translational Technologies & Resources Symposium*,

(UMB, Baltimore, MD)

2010 Keynote speaker, *LEM symposium*, Johns Hopkins School of Medicine,

Baltimore, MD.

2011 Invited speaker, *Keystone Symposium on NMR spectroscopy*, Big Sky, MO.

2011 Invited Speaker, NC State *Vinnie Valvano Lectureship*, Raleigh, NC

2012 Honorary Professorship, College of Biology and Experimental Medicine of the

Perugia University, Perugia Italy (2012 until present).

2013-presnt Permanent committee member for MSFA Study Section (NIH)

2014 *Graduate Student Program Lecture Series* – Department of Chemistry, University of Pennsylvania, Philadelphia PA

2015 Session Chair & Invited Speaker at the *International Symposium on Calcium- Binding Proteins & Calcium Function in Health and Diseases*, Vanderbilt University, Nashville TN

2016 Session Chair & Invited Speaker at the annual FASEB meeting of the *Association of Biomolecular Resource Facilities (ABRF)*, Fort Lauderdale Convention Center, Fort Lauderdale FL

**TEACHING ACTIVITIES**

1993-present *Medical School Cell and Molecular Biology Course*

1993-2006 *Introduction to Biochemistry and Molecular Biology* (MBIC-608) 1993-1995 *Proteins and Enzymes* (MBIC-701)

1993-present *Advanced NMR* (Chem 601B)

1993-present *Graduate Studies Research Director* (MBIC-899)

1993-2000 *Seminar* (MBIC-708)

1996-present *Molecular Structure and Function in Biochemistry* (MBIC-701)

1997-2001 *Membrane Biochemistry* (MBIC-710)

2006-present *Graduate Program in Life Science Core course*

2010-present *Topics in Translational Research* (GPILS 791)

## SECTION LEADERS IN THE CENTER FOR BIOMOLECULR THERAPEUTICS (CBT)

2011-present Dr. David J. Weber, Director of the CBT

2011-present Dr. Danna Zimmer (*In Vivo* Biology & Drug Testing; IVBDT)

2012-present Dr. Vincent Njar (Medicinal Chemistry; MC)

2011-present Dr. Paul Wilder (Target Validation & Screening; TVS)

2011-present Dr. Eric Toth (Structural Biology Co-leader, X-ray; SBXRAY)

2011-present Dr. Kristen Varney (Structural Biology Co-leader, NMR; SBNMR)

2012-present Dr. Alex MacKerell (Computer Aided Drug Design; CADD; partnership with the School of Pharmacy CADD Center)

2012-prsent Dr. Claire Fraser (Human Genomics & Bioinformatics; HGB; partnership with the Institute for Human Genomics Sciences (IGS))

2011-present Dr. David Weber (Protein production and Biophysics; PPB; currently recruiting new section leader)

## LIST OF TRAINEES

2014-2016 Dr. Lei Fang – Post Doctoral Fellow (co-advisor with Dr. Alex MacKerell)

2014-present Milad Alasady – Graduate Student (advisor)

2014-present Dr. Braden Roth – Post Doctoral Fellow (advisor)

2013-present Dr. Sean Stowe – Post Doctoral Fellow (advisor)

2013-present Dr. Shardell Spriggs – Post Doctoral Fellow (advisor)

2013-present Dr. Lei Fang – Post Doctoral Fellow (co-advisor; CADD in CBT)

2012-present Dr. Michael Cavalier – Post Doctoral Fellow (advisor)

2012-2014 Dr. Adam Pierce – Post Doctoral Fellow (advisor)

Current Position: Staff Scientist

Food & Drug Administration

2011-2014 Dr. Yan Zhang (MD/PhD) – Post Doctoral (co-advisor; IVBDT in CBT)

2011-present Dr. Raquel Godoy Ruiz – Post Doctoral (co-advisor; SBNMR in CBT)

2012-2016 Dr. Lalji Gadiya – Research Associate (co-advisor; MC in the CBT)

2012-present Dr. Purushottamachar Puranik “Puru” - Res Assoc (co-advisor; MC in CBT).

2011-2013 Dr. Arghya Barman – Post Doctoral Fellow (co-advisor; CADD in CBT)

2009-2012 Dr. Laura Thompson – GPILS Graduate Student BMB (advisor)

Current position: Post Doctoral Fellow

University of Washington-Seattle

Advisor: Professor David Baker

2011-2013 Carrie Campbell – McDanial College Res Fellow (co-advisor; IVBDT in CBT)

Current position: Medical Student

University of Maryland School of Medicine

2011-2013 Marlena Martin – Univ at Shady Grove Intern (co-advisor; IVBDT in CBT)

2012-present Kate Campbell – UMCP Research Fellow (co-advisor; IVBDT in CBT).

2009-2012 Debra Green – Laboratory Technician (co-supervisor; TVS in the CBT)

2009-2012 Chau Nguyen – Pharm D Research Fellow (co-supervisor; IVBDT in CBT)

2008-2011 Dr. Brian Cannon – Post Doctoral Fellow

Current position: Office of Research and Development, UMB

2008-2011 Xiao Heng, - GPILS Graduate student BMB (advisory committee)

Current position: Post-Doctoral Fellow, Michael Summers HHMI

Investigator, UMBC.

2008-2013 Jonathan Levine – GPILS Graduate student BMB (advisory committee)

2008-2011 Brittney Manvilla – GPILS Graduate student BMB (advisory committee)

2007-2011 Bryan McCranor – GPILS Graduate student BMB (advisory committee)

2007-2011 Leon De Masi – GPILS Graduate student BMB (advisory committee)

2007-2010 Benjamin Prosser – GPILS Graduate student BMB (advisory committee)

Current position: Post-Doctoral Fellow, John Lederer, Professor of Physiology, University of Maryland, School of Medicine.

2007-2008 Dr. Sarah Garrett – Graduate Student, Albert Einstein, PhD Defense Committee

2007-2009 Michele Weiss – GPILS Graduate Student Molecular Medicine

Current Position: Senior Research Scientist, Glaxo Smith-Kline (GSK)

Post Doc Advisor: Professor Andrew Aplin, Drew University

2007-2011 Melissa Liriano – MD/PhD & GPILS graduate Student BMB

Current Position: Attending Medical School

2007-2012 Kira Gianni – GPILS Graduate Student Molecular Medicine (advisor)

Current Position: Post Doctoral Fellow

University of Pennsylvania

Advisor: Professor John Lynch

2007-2011 Casiah Smith – GPILS Graduate Student BMB (advisory committee)

2007-2008 Dr. Michele Vitolo – Post Doctoral Fellow (advisor)

Current position: Post-Doctoral Fellow, Stuart Martin, Professor of

Physiology, University of Maryland School of Medicine

2006-2010 Lianko Garyu – GPILS Graduate Student BMB (advisory committee)

2006-2011 Brian Howard – GPILS Graduate Student BMB (Master’s degree)

Current position: Research Associate, Paragon Bioservices

2005-2010 Dr. Paul Wilder – Post Doc (advisor; also from 1994-1996; 2001-2005)

Current position: Associate Director, High Throughput Screening Shared

Service, Greenebaum Cancer Center, University of Maryland School of

Medicine

2004-2009 Thomas Charpentier – GPILS Graduate Student BMB (advisor)

Current Position: Post-Doctoral Fellow, UNC-Chapel Hill

Advisor: Professor John Sondek

2003-2009 Dr. Kalola Andrews – GPILS Graduate Student BMB (Advisory committee)

2003-2008 Dr. Nathan Wright – GPILS Graduate Student BMB (advisor)

Current position: Assistant Professor (tenure-track)

James Madison University.

2006-2007 Dr. Jing Lin – Post Doctoral Fellow (advisor, as Grad student 2001-2006)

Current Position: Research Scientist, SuperArray Biosciences Inc., Frederick, MD

2003-2004 Alex Herrera – NSF undergrad fellow (Herman R. Branson Biophysics program)

2001-2006 Ruiqing Yang – GPILS Graduate Student BMB (advisor)

Current Position: Post-Doctoral Fellow, NIH

2001-2002 Dr. James Nataro (Faculty sabbatical)

2000- 2005 Dr. Joseph Markowitz – GPILS M.D./Ph.D. student BMB (advisor)

Current Position: Resident, Ohio State University Sch of Med

2001-2008 Shardell Hawkins GPILS graduate student BMB (advisory committee)

Dr. Jing Zhou GPILS graduate student BMB (advisory committee)

1999-2004 Dr. Kristen Vallely - Graduate student (advisor; current last name - Varney)

Current Position: Assistant Professor, Univ of Maryland Sch of Med and

Director of the UMB NMR center.

* 1. Dr. Rossitza Gitti (Research Assistant Professor)

Current Position: Research & Technology Director, Edgewood Chemical Biological Center, Aberdeen Proving Ground, Maryland

* 1. Dr. Kristi Miller (Faculty sabbatical)
  2. Dr. Chun Tang – Graduate student (advisory committee member)

Current Position: Assistant Professor

University of Missouri

* 1. Dr. Jorge Velarde – MD/Ph.D. Graduate student (advisory committee member)

Current Position: Fellow, Massachusetts General Hospital

Resident Univ of Cincinnati Children’s Hospital

* 1. Dr. Keith Inman - Graduate Student (advisor)

Current Position: Senior Staff Scientist, Paragon Sciences

Dr. Karen Ellis (formally Klenk) - Graduate Student/Post Doc (advisor)

Current Position: Consultant, Science Systems Consulting

* 1. Dr. Richard Rustandi - Post Doctoral Fellow (advisor)

Current Position: Senior Scientist, Merck Inc.

1995-2000 Dr. Bindi Dangi - Graduate Student (Ph.D., advisory committee member)

Tracy Lessor - Graduate Student (Ph.D., advisory committee member)

Xiang Yao - Graduate Student (Ph.D., advisory committee member)

Dr. David Bradbury - Graduate Student (Ph.D., advisory committee member)

Dr. Zhongsen Zhang – Graduate Student (Ph.D., advisory committee member)

* 1. Zhengrong Wu - Graduate Student (Ph.D., advisory committee member; Justin)

Current Position: Post-Doctoral Fellow, NIH; Advisor: Dr. Ad Bax

1995-1998 Dr. Gentzen Hall - Undergraduate Student (advisor for a short-term research

training program for minority undergraduate students)

Current Position: M.D./Ph.D. Student, University of MD Sch. of Med.

1994-1998 Dr. Todd Tennenholz - MD/Ph.D. Student (advisor)

Current Position: Assistant Professor of Radiology, Vanderbilt

University School of Medicine

Dr. Roberto Deguzman - Graduate Student (Ph.D., advisory committee member)

Current Position: Associate Professor

University of Kansas

1993-1997 Dr. Alex Drohat - Graduate Student (advisor)

Current Position: Associate Professor, University of Maryland School of Medicine, Department of Biochemistry and Molecular Biology (tenured).

1993-1998 Dr. Deepa Mehta - Graduate Student (Ph.D., advisory committee member)

Current Position: CVS Pharmacy, Inc., Rockville, MD

1993-1997 Dr. Chunhau Yan - Graduate Student (Ph.D., advisory committee member)

Current Position: Genelogic Inc., Columbia, MD.

1993-1996 Dr. Li Chen - Graduate Student (Ph.D., advisory committee member)

Current Position: Post-Doctoral Fellow, University of Miami

Dr. Brian Lee - Graduate Student (Ph.D., advisory committee member)

Current Position: Assistant Professor, University of Southern Illinois

1993-1995 Dr. Judy Amburgey - Post Doctoral Fellow (advisor)

Current Position: Professor & Chair of Chemistry, Wooster

College, Wooster, OH.

Dr. Xinmei Zhao - Graduate Student (Ph.D., advisory committee member)

Current Position: Post-Doctoral Fellow, Geisinger Clinic

Dr. Mary Starich - Graduate Student (Ph.D., advisory committee member)

Current Position: Staff Scientist, NIH/NCI

Dr. Gabriella Perez-Alvarado - Graduate Student (Ph.D., advisory committee

member) Current Position: Assistant Professor, The University of

Southern Illinois,

Dr. David Frick - Graduate Student at JHU (Ph.D., advisory committee) Current Position: Professor of Biochemistry and Molecular

Biology, New York Medical College

**EDITORIAL TASKS**

*Honorary Editorial Board Member*

The International Journal of High-Throughput Screening (2009-present)

*Editorial Board*

Anti - Cancer Drug Discovery (2007-present)

The Open Magnetic Resonance Journal (2007-present)

The Journal of Biological Chemistry (2010-2016)

The American Journal of Translational Research (2010-present)

The International Journal of High-Throughput Screening (2010-present)

The Journal of Biomolecular Therapeutics (2012-present)

*Journal Referee*

Annals of Neurology

Archives of Biochemistry and Biophysics

BBA - Molecular Cell Research

Biochemistry

Bioinformatics

Biophysical Chemistry

Biophysical Journal

Biopolymers

Cell Calcium

Cellular and Molecular Life Sciences

DNA and Cell Biology

Endocrinology

European Journal of Biochemistry

FASEB Journal

FEBS Letters

International Journal of High-throughput Screening

Journal of the American Chemical Society

Journal of Biomolecular NMR

Journal of Biological Chemistry (Associate Editor)

Journal of Biological Inorganic Chemistry

Journal of Molecular Biology

MedChemMed

Molecular Biosystems

Nature Structural Biology

Protein Science

Proteins: Structure Function and Genetics

Structure

*Grant Reviewer*

National Science Foundation Grants (**NSF-MSB**)

NIH Ad Hoc Reviewer (S10, P01, P30, R01, R29, F30, F31, F32, K99, RC1, intramural grants)

National Institutes of Health Grants (**NIH-BBCA** panel member 2000-2004)

National Institutes of Health Grants (**NIH-MSFE** panel member 2013-2014)

National Institutes of Health Grants (**NIH-MSFA** panel member 2014-2019)

National Institutes of Health Grants (**NIH-ZRG1**s; 2000-present; as called)

National Institutes of Health, Chair, P41 Site-visit of Cornell Protein Crystallography Lab (2007)

National Institutes of Health, P41 Site-visit reviewer of NMRFAM (2014)

American Chemical Society Grants (Petroleum Research Fund)

American Cancer Society (**ACS**)

Israel Science Foundation Grants

Searle Scholar Grants

Grant Agency, Academy of Sciences of the Czech Republic

Narodowe Centrum Nauke, NCN Poland

*National Program Reviews*

Board of Scientific Counselors (2004; ad hoc reviewer of the intramural Molecular and

Structural Biology Unit (MSBU) at the National Institutes of Health

Site-visit reviewer – Georgetown University School of Medicine Graduate Program in Biochemistry and Molecular Biology

Chair, NIH P41 Site Visit Team to review the Cornell Macromolecular X-ray

Crystallography Research Resource (MaCHESS), July, 2007.

Member, NIH PSI:Biology Site Visit Team (Visited multiple PSI:Biology Centers throughout United States), 2/2013 until 7/2013.

Member, NIH panel to review P41 of NMRFAM at the University of Wisconsin-Madison,

PI: John Markely, July 2014

Member, NIH panel to review P30 NCI Comprehensive Cancer Center Grant at The University of California-Irvine.

*Textbook Reviewer*

*Medical Biochemistry* by Dominiczak and Baynes published by Mosby-Wolfe.

**CAMPUS ACTIVITIES**

*Department Service*

1993-1994 Department Seminar Program - co-director

1993-1996 Computer Graphics Facility - director

1993-present Graduate Governing Committee - member

1995-present Graduate Student Admission Committee

1995-1998 Chairman-Molecular and Cellular Biology Honors Student Selection Committee

1995-1997 Department Review Committee

1998-2002 Chairman-Structural Biology Promotion Committee

1. 1999 Organizer-Symposium on Structural Biology
2. Department DRIF distribution committee

2000 Faculty Tenure Review Committee

2006 Acting Chairman of the Department of Biochemistry & Molecular Biology

2001-2010 Director, Joint Graduate Program in Chemistry and Biochemistry

2007-present Chairman, Faculty Search Committee

2007-present Member, Departmental Steering Committee

2007-present Member, Departmental Research Committee

2008-present Member, Departmental review committee for Human Research Protocols

2012-present Political outreach committee

*School of Medicine Service*

1993 Strategic Planning Committee Meetings - Promoted NMR Core Facility

1993-2005 Molecular and Cellular Biology Graduate Program - associate member

1994-2005 Molecular and Cellular Biology Graduate Program - admissions committee

1995-2005 Molecular and Cellular Biology Graduate Program - advisory committee

1995-present M.D./Ph.D. Program Core Faculty Member

1994 Problem based learning workshop

1995 LCME Accreditation Committee-Junior Faculty Representative

1995 Surgery Junior Clerkship Peer Review Committee

1995 Molecular and Cell Biology Course Committee

1996 SRIS/DRIF Internal Grant Review Committee

1. Co-chairman-Structural Biology Session-UMB Sch. of Med. Research Retreat
2. Member, Research subcommittee of the School of Medicine Strategic Plan

2000-2005 Steering Committee

2000-present Member, Muscle training program

2001-2009 Member, Research Affairs Advisory Committee (RAAC)

2002-2003 Member, Subcommittee to RAAC on Graduate Programs

2002 Chairman-Structural Biology Session – MCB retreat

2003 Co-Chair, Proteomics Session-UMB Sch. of Med. Research Retreat

2003-2005 School of Medicine Representative on the Graduate Council

* 1. Basic Science Representative on the Executive Committee of the School of

Medicine Council (elected by council)

* 1. Member, Search Committee for an Associate Dean of Research

2005 Chair, Subcommittee of the RAAC evaluating Research Core facilities

2006-2007 Member, Search Committee for Chair of Medicine

2006-present Member, Advisory committee for the X-ray crystallography Center

2006-2012 Member, Advisory committee for the Proteomics Core Facility

2007-2010 Member, CTSA Translational Technologies Committee

2008-2011 Participant, SOM Legislative Day

2009-2012 Basic Science Representative on the Executive Committee of the School of

Medicine Council (elected by council)

2010-2011 Technology Resource Center Advisory Committee

2010-2012 Medical School Student Admission Committee (interviewer)

2013-present Member, Research Resources Advisory Group

2013-present Member, Advisory committee for the Center for Integration of Metabolic Imaging & Therapeutics (CIMIT) research center

2014-2015 Member, Search Committee for the Director of the *Center for Vaccine*

*Development (CVD)*, Chair: Dr. Claire Fraser.

2014-present Member, Graduate Program in Life Sciences (GPILS) Advisory Committee

Chair, Dr. James Kaper.

*UMB Campus Service*

1999-present Member, UMB Greenebaum Cancer Center

2006-2013 Director, High-Throughput-Screening Core Facility

1993-present Director, NMR Core Facility

1993-present Chairman-UMB NMR committee

1997-present Judge for Graduate Student Research Day (most years)

2000 Health Science Facility Phase 2 Planning Committee

2002-2003 HFSII Ribbon-Cutting Ceremony Committee

2004-2005 Member, Faculty Search Committee in the School of Pharmacy

2006-2007 American Cancer Society IRG Committee, Greenebaum Cancer Center

2008-present Oversight Committee for the X-ray crystallography core facility

2011-present Director, The Center for Biomolecular Therapeutics

2011-present Co-Program leader in the Molecular Structural Biology program in the GCC

2012-2014 Member, GCRC Advisory Committee (GAC)

2013-present Director, The Structural Biology Shared Service in the Greenebaum Cancer Center (This shared service works in conjunction with the CBT)

### University of Maryland System Service

2001- present Participating Faculty member in the Meyerhoff Graduate Fellows Program

2003 Promotion and tenure committee for Dr. Jim Ames CARB/UMBI

2003-2005 Member of the Graduate Council

2003-2005 The Graduate Council Long Range Planning and New Program Committee

2004-2005 Member of the Advisory Committee for Minority Biomedical Research Support (MBRS) and the Initiative for Minority Student Development (IMSD)

2004-2005 Chairman, Long Range Planning and New Programs Committee in the Graduate Council

2005-2006 Promotion committee for Dr. John Orban CARB/UMBI

2010-present Co-director, Greenebaum Cancer Center Structural Biology Shared Service

2011-present Director, The Center of Biomolecular Therapeutics (CBT)

2011-present Associate Director, The Institute of Biological and Biotechnology Research (IBBR)

2016 Search Committee at the request of Dr. Loh, President, University of Maryland – College Park (Position: Associate Vice President for Economic Development)

*Statewide and National Service*

2006-2007 Celebration Ambassador representing Maryland on Capitol Hill – Celebration on the Hill (a National Advocacy Event Sponsored by The American Cancer Society)

2008-2011 Legislature Day, Advocating in Annapolis for The University of Maryland School of Medicine

**GRANT SUPPORT (active)**

Uninterrupted peer-reviewed grant support awarded from 1995-2018 (Total dollars: $23,795,633; avg-$1,034,592/yr for 23 years; this does not include pending grants).

7/1/13 – 6/30/18 National Institutes of Health (**R01 CA177981**) MPI: Carrier, F./Weber, D.J.

“Rational targeting of protein translation of cancer treatments”

% effort: 10% (role on project: 1 of 2 PI’s; MPI)

$ 207,500 direct costs of current year: 07/01/2013 – 06/30/2014

$ 1,050,000 total estimated direct costs

$ 1,617,565 total estimated direct and indirect costs

Specific Aims of project: To determine structure/function relationships with the protein

A18, a mediator of protein translation and to begin targeting this protein and its RNA

complexes using a rational drug design approach for melanoma.

8/8/08 – 7/31/21 National Institutes of Health – (**P30CA134274**) PI: Kevin J. Cullen

“University of Maryland Greenebaum Cancer Center Support Grant”

% effort: 15% (role on project; Director of Molecular and Structural Biology

Program, MSB; Director of Structural Biology Shared Service, SBSS)

$ 1,515,884 direct cost of current year (total grant)

$ 125,542 direct costs of current year (Sub #8043; Weber, MSB)

$ 125,544 direct costs of current year (Sub #8034; Weber, SBSS)

$ 7,825,615 total estimated direct costs

$ 11,738,722 total costs

4/1/17 – 3/31/21 National Institutes of Health (**R01EY027405)** PI: Felippo Mancia

“Structural basis of receptor-mediated cellular vitamin A uptake”

% effort: 5% (role on project; collaborator)

$ 350,000 direct costs of the current year (total grant)

$ 58,000 direct costs of the subcontract to Weber

Specific Aims of project: Weber will direct the subcontract and collaboration with the

PI (Dr. Mancia) at Columbia University to examine the structure and function of the

vitamin A transporter STRA6. Our major contribution is for the NMR/X-ray

crystallography aspects of the proposal and functional relevance of the CaM-STRA6

complex.

2/28/2017 – 2/27/20 US Army Medical Research Institute of Chemical Defense PI: David J. Weber

Proposal Number: **00226353**

“Design of novel acetylcholinesterase reactivators”

% effort: 10% (role on project: PI)

$ 184,156 /yr direct costs of current year

$ 569,207 total direct costs

$ 879,424 total estimated costs (direct & indirect)

Specific Aims: The major goal of this project is to use NMR spectroscopy to characterize

mammalian acetylcholine esterase, with a particular emphasis on the dynamic properties of active

site residues. These data will then be used to help design improved small molecule

acetylcholinesterase reactivators

**PAST GRANT SUPPORT:**

7/1/06 - 10/31/16 National Institutes of Health - (**R01 CA107331**) PI: David J. Weber

“Restoration of p53 function in malignant melanoma”

% effort: 15% (role on project: PI).

$ 354,989 direct costs of current year

$ 1,747,027 total estimated direct costs

$ 2,558,920 total direct and indirect costs

Specific Aims of project: To design/synthesize small molecule inhibitors of the S100B-p53 interaction that restore p53 activity in melanoma.

7/1/13 - 10/31/16 National Institutes of Health - (**R01 CA107331-S1**) PI: David J. Weber

“Minority supplement award”

% effort: 0% (role: Mentor to Minority Fellow: Shardell Spriggs, PhD).

$ 50,185 direct costs of current year

$ 150,555 total estimated direct costs

$ 231,102 total direct and indirect costs

Specific Aims of project: To mentor Dr. Spriggs in the design/synthesis of small molecule inhibitors of the S100B-p53 interaction that restore p53 activity in melanoma.

10/1/12 – 9/31/16 National Institutes of Health – (**R01 AI098498**) PI: Wuyuan Lu

“HTS for HIV assembly & maturation inhibitors”

% effort: 5% (role on project: collaborator)

Role on Project: Complete HTS; SAR by NMR; co-direct a post-doctoral fellow

$ 195,000 direct costs of current year

$ 780,000 total estimated direct costs

$ 1,173,000 total costs

1/1/12 – 12/31/14 American Kennel Association PI: Danna B. Zimmer

Canine Health Foundation (Grant No. 01633)

“Phase I S100B Inhibitor Clinical Trial for Canine Melanoma Therapy*”*

Co-I: No salary support is paid by this foundation.

$ 80,000 direct costs current year

$160,000 direct costs for the entire project

$160,000 total costs

Specific Aims: To test the drugs pentamidine and chlorpromazine as the primary intervention for

canine malignant melanoma cases at Texas A&M University School of Veterinary Medicine.

2/1/09 – 1/31/14 National Institutes of Health – (**R25 GM55036**) PI: Michael F. Summers

“Expand Participation by Minorities in Biomedical Science”

% effort: no salary is provided from this grant

Role on Project: Mentor and member of the executive committee

$5,147,507 total direct costs

$1,070,321 year 1 direct costs

$5,480,646 total costs

Specific Aims: The goal of this training grant to increase the number of underrepresented minority students (URMs) who receive their PhD degrees in Biomedical Sciences.

10/1/2012 – 9/30/2013 Department of Defense (DOD) PI: Daniel Nelson

“Imaging System of Detecting Pathogenesis”

Co-I: No salary support for this instrumentation grant.

$288,000 direct costs current year

$288,000 direct costs for the entire project

$288,000 total costs

Specific Aims: This instrumentation grant is for the purchase of a Lumina/XR IVIS system, which will allow the user to simultaneously image luminescence, fluorescence, and X-ray in live animals in real time.

7/1/08 – 6/30/13 National Institutes of Health (**R21CA135624**) PI: Edward Sausville

“Treatment of melanoma with wild-type p53 and detectable S100B using pentamidine:

a Phase II trial with correlative biomarker endpoints”

% effort: 1%

Role on project: Co-PI

Total costs: $750,000 over two years ($250K direct per year)

Specific Aims: The goal of the trial is to determine the effectiveness of pentamidine treatment on human melanoma patients and to determine whether S100B is a reliable biomarker

in the treatment plan.

4/1/11 - 3/31/12 National Institutes of Health (**S10RR031729**) PI: David J. Weber

"Multimode fluorescent plate reader"

% effort: none (shared instrumentation grant).

$ 164,375 direct costs current year

$ 164,375 direct costs for the entire project

$ 164,375 total costs requested

Specific Aims: This instrumentation grant is to purchase a multimode fluorescent plate-reader to

increase the throughput in the High Throughput Screening Shared Service, of which the PI is the

Director.

5/27/10 - 5/26/12 National Institutes of Health (**S10RR029601**) PI: David J. Weber

"950 MHz NMR spectrometer with a cryogenic probe"

% effort: 0% (instrumentation grant)

$7,994,900 direct costs

$7,994,900 direct costs for entire project

$7,994,900 total costs requested

Specific Aims: This instrumentation grant is to purchase a 950 MHz NMR spectrometer to be

shared with PI's at The University of Maryland, College Park (UMCP), The University of

Maryland Baltimore County (UMBC), and The University of Maryland, Baltimore (UMB).

7/1/08 – 6/30/12 National Institutes of Health (**R01 CA124486**) PI: William F. Morgan

“High Throughput Screens of Novel Radiation Sensitizers and Protectors”

% effort: 0% (core facility work)

Role on project: PI for subcontract (to complete Aim 1 of grant)

$ 77,000 direct costs in current year (in subcontract)

$ 261,000 total direct costs (in subcontract)

$ 391,500 total costs of subcontract over 4 years (for subcontract)

Specific Aims: To do high throughput screens to search for compounds that are novel

sensitizers and/or protectors for radiation treatments.

10/1/09 – 9/30/12 National Institutes of Health – (**F31CA144560**) PI: Melissa Liriano

“Protein dynamics of calcium-S100A5 in the presence and absence of target peptide”

% effort: no salary is provided; Mentor to MD/PhD student

Role on project: Mentor to MD/PhD Student

$ 114,147 total direct costs

$ 38,049 year 1 direct costs

$ 114,147 total costs

Specific Aims: The goal of this training is to mentor Melissa Liriano in the completion of her

PhD program with regard to her studies of the S100A5 calcium-binding protein.

8/24/07 - 11/17/10 Susan G. Komen Breast Cancer Foundation (**BCTR0707527**) PI: Ed Sausville

"Role of Aryl Hydrocarbon Receptor and Cross Talk with Estrogen Receptor in

Response of Breast Cancer Cells to the Novel Antitumor Agent Aminoflavone"

% effort:

Role on project: Co-PI

$300,000 total costs

7/1/09- 10/31/11 National Institutes of Health - (**R01 CA107331-04-S1**) PI: David J. Weber

(ARRA Competitive Revision application)

“Restoration of p53 function in malignant melanoma”

%effort: 2% (role on project: PI).

$ 254,170 direct costs of current year: 9/17/09 - 5/31/11

$ 254,170 total estimated direct costs

$ 376,297 total direct and indirect costs

Specific Aims of project: To test small molecule inhibitors of the S100B-p53 interaction in cellular screens and malignant mouse models with the goal of restoring p53 activity in melanoma.

2/1/07 – 7/31/11 National Institutes of Health (**R01 GM58888-11**) PI: David J. Weber

“The structure and function of S100 proteins”

% effort: 20% (role on project: PI)

$ 212,000 direct costs current year

$ 820,000 direct costs for entire project

$ 1,217,700 total costs requested for entire project

Specific Aims: Studies of several S100 proteins and their effect on cellular function.

2/1/09 – 7/31/11 National Institutes of Health (**R01 GM58888-S1**) PI: David J. Weber

**(**NIGMS Administrative Supplements for Collaborative Science – competitive grant)

“S100A1 augments CaV1 channel currents and action potential duration in sympathetic

ganglion neurons via interaction with protein kinase A (PKA)”

% effort: 1% (role on project: PI)

$ 90,000 direct costs per year

$ 178,876 direct costs for entire project

$ 268,314 total costs for entire project

Specific Aims: The goal of this collaborative science (Co-PI: Dr. Martin Schneider) is to further

understand the structure/function of the S100A1/PKA interaction in ganglion neurons.

7/1/06 – 6/30/09 University of Maryland School of Medicine Award PI: David J. Weber

“Supplement to develop inhibitors of S100B to treat malignant melanoma”

%effort: 0% (role on project: PI)

$ 70,000 direct costs in current year

$ 210,000 total direct costs

$ 210,000 total award

Specific Aims: This award is for the discovery of inhibitors of S100B and other S100 proteins for the development of a cancer therapeutic.

7/1/05 – 6/30/10 National Institutes of Health (**T32 DK067872**) PI: Jean-Pierre Raufman

“Research Training in Gastroenterology”

% effort: no salary is provided from this grant

Role on project: Mentor for a Trainee in the Training program, Michele Weis

Specific Aims: The goal of the UMB GI Research Training Program is to prepare pre- and post-doctoral fellows for academic careers in Gastroenterology by offering an integrated, interdisciplinary curriculum that emphasizes cancer genetics and genomics, mucosal biology and immunology, enteric pathogens and vaccine development, and epidemiology and preventive medicine research.

1/1/06 – 12/31/08 Susan G. Komen Breast Cancer Foundation Postdoctoral Award (**PDF104506**)

PI: Michele Vitolo

“[The Role of PTEN in Hormone Refractory Breast Cancer](file:///C:\Users\David%20Weber\Documents\CV_Weber_others\cv_2009\abstracts.asp%3fgn=PDF0601045&nodeId=386)”

% effort: 0%; Post Doctoral Fellow Advisor

$45,000 direct costs in current year

$135,000 total direct costs (fellowship pays direct costs only)

2/1/05 – 1/31/09 National Institutes of Health – (**R25 GM55036**) PI: Michael F. Summers

“Expand Participation by Minorities in Biomedical Science”

% effort: no salary is provided from this grant

Role on Project: Mentor and member of the executive committee

$5,147,507 total direct costs

$1,070,321 year 1 direct costs

$5,480,646 total costs

Specific Aims: The goal of this training grant to increase the number of underrepresented minority students (URMs) who receive their PhD degrees in Biomedical Sciences.

7/1/04 – 6/30/09 National Institutes of Health – (**T32 GM066706**) PI: Ralph Pollock

“Graduate training at the Chemistry/Biology Interface (CBI)”

% effort: no salary is provided from this grant

Role on project: Mentor and member of the executive committee

$ 627,300 total direct costs

$ 125,460 direct costs in the current year

$ 664,535 total costs for grant

$ 23,000 stipend for Tom Charpentier in Weber lab (7/1/06-6/30/08)

Specific Aims: To provide outstanding graduate education to students who have projects

involving both chemistry and biology.

5/26/06 – 5/25/08 American Heart Association (**AHA 0615343U**) PI: Nathan T. Wright

“Structure/function studies of S100A1, a calcium-binding protein in EC coupling

in cardiomyocytes”

% effort: 0%; PhD advisor to PI

$20,000 direct costs in current year

$40,000 total direct costs

$40,000 total award (fellowship pays direct costs only)

Specific Aims: To characterize the calcium-dependent interaction of S100A1 and the ryanodine

receptor.

4/1/04 – 3/31/08 National Institutes of Health – (**R01 GM069945**) PI: Anne Bresnick

"Novel Mechanisms of Myosin-II Mediated Motility"

% effort: 5% (role on project: collaborator)

$700,000 total estimated direct costs

$175,000 total costs of upcoming year: 4/01/04 – 3/31-05

$1,036,000 total estimated direct plus indirect costs

Specific Aims of project: To examine the biological role of mts1 in metastasis and to study the calcium-dependent interaction between mts1 and nonmuscle myosin IIA.

4/1/07 – 3/31/08 National Institutes of Health (**S10 RR023447**) PI: David J. Weber

“600 MHz NMR console”

% effort: no effort for this instrumentation grant

$ 362,400 Total direct costs in year 1

$ 362,400 Total costs

Specific Aims: This instrumentation grant is to purchase a new NMR console for our 600 MHz

NMR spectrometer.

7/1/04 – 6/30/07 American Cancer Society – (**CDD-107745**) PI: David J. Weber

“Small molecule inhibitors of S100 proteins”

%effort: 10% (role on project: PI)

Grant was rated as the top grant in the study section

$150,000 direct costs in current year

$450,000 total direct costs

$90,000 total indirect costs

$540,000 total award

Specific Aims: To study the biology of S100 proteins that interact with p53 discover and discover lead compounds that can inhibit such interactions.

2/1/03 - 1/31/07 National Institutes of Health - (**R01 GM58888-08**) PI: David J. Weber

“Structure/function studies of S100 proteins and p53”

%effort: 20% (role on project: PI)

$190,413 direct costs in current year

$805,750 total estimated direct costs

$1,184,050 total direct and indirect costs

Specific Aims of project: To elucidate the detailed molecular mechanisms of the interaction of S100B, S100A1, S100A2, and S100A4 with the tumor suppressor protein, p53.

5/24/02 – 5/23/06 National Institutes of Health - (**F30-NS43916-01**) PI: Joseph Markowitz,

MD/Ph.D. candidate

“Design of inhibitors for S100B”

% effort: no salary is provided by this grant

Role: PhD advisor to Joseph Markowitz

$131,870 estimated total direct costs

no indirect cost for this training grant

Specific Aims of project: Protein dynamic data derived from NMR will be incorporated into

computer aided drug design (CADD) methods. Molecules found to inhibit the S100B-target

protein interaction will be characterized.

4/1/04-3/31/05 NIH (**P41RR008119-120072**) PI: Joseph Lakowicz

“Fluorescence dynamics of short tyrosine peptides”

% effort: no salary is provided by this grant

role: PI for sub-project

Specific Aims: To characterize the structure and dynamics of peptides derived from the tumor suppressor protein, p53, using fluorescence spectroscopy.

1/1/00 – 12/31/03 American Cancer Society Research Project Grant PI: David J. Weber

“Studies of interactions between p53 and S100 proteins”

% effort: 20% (role on project: PI)

$300,000 total direct costs

$375,000 total costs

Specific Aims of project: To examine the mechanism by which S100 proteins p53 transcription

activation, and to develop small molecule analogues to inhibit the interaction between S100 and

p53.

4/1/02 - 3/31/03 NIH (**S10RR16812-01**) PI: David J. Weber

“Cryoprobe for a 600MHz NMR Spectrometer”

$230,725 direct costs

No indirect costs for this shared instrumentation grant

Specific Aims of Project: Purchase of NMR cryoprobe.

2/1/99 - 1/31/03 National Institutes of Health - (**R01 GM58888-04**) PI: David J. Weber

“Studies of the Interaction of S100 proteins with their Respective Target Proteins”

% effort: 30%

$694,668 total estimated direct costs

$218,983 direct costs of last year: 2/01/02 - 1/31/03

$980,795 total direct and indirect costs

Specific Aims of project: To elucidate the detailed molecular mechanisms of the interaction of

S100B, CAPL, p11, and S100A1 with target proteins.

4/1/01 - 3/31/02 NIH/NSF S10 - (**S10RR15741-01 and DBI 0115795**) PI: David J. Weber

“800MHz NMR Spectrometer”

(Priority Score-141: no percentile rating given; first submission)

$900,000 direct costs

No indirect costs for this shared instrumentation grant

The grant was cost-shared by the NIH/NSF ($500,000/$400,000)

Note-The NSF grant dates are (4/15/01 – 3/14/02).

Specific Aims of Project: Purchase of an 800 MHz NMR Spectrometer.

8/22/02 – 8/21/03 National Institutes of Health (**3R01GM058888-03S1**) PI: David J. Weber

“Supplement for purchasing stopped-flow equipment”

$ 56,000 direct costs

No indirect costs

$ 56,000 total costs

Specific Aims: This supplement was to purchase additional equipment for completion of Aims in

R01 GM58888.

9/1/00-8/31/01 NIH (supplement to **R01 GM35132**) PI: A-lien Lu-Chang

“Structure determination of the MutY C-terminal domain by NMR”

% effort: 5%

$50,000 total direct costs

$50,000 total direct costs for current year

Specific Aims of project: This award was funded through a program entitled “Supplements for the determination of high-resolution structures”. This project was peer-reviewed by outside reviewers and funding was provided to determine the 3D structure of the C-terminal domain of MutY.

6/1/98 - 5/31/00 NIH PPG - (**P01 HD 16596-16**) PI: Ronald Zeilke

“Metabolic and Developmental Aspects of Mental Retardation”

% effort: 10% as Co-PI on project IV

$4,173,668 total direct costs

$745,511 direct costs of current year: 7/01/98-6/30/99

$105,551 direct costs of current year for project IV: 7/01/98-6/30/99

$157,359 total direct and indirect costs of current year for project IV

Specific Aims of project: To examine the enhancement of arginosuccinate synthetase and

induction of nitric oxide production in astrocytes treated with S100B. I completed my portion of

this program project in its second year, but the program continued for 3 more years under the

direction of Dr. Ron Zeilke.

1/1/96 – 12/31/99 NIH (**P41RR002301**) PI: John L. Markley

“National Magnetic Resonance Facility at Madison (NMRFAM): A Nationally Shared NMR facility”

%effort: No salary is provided by this grant

Role: PI of three subprojects within the P41

Specific Aims: Three supplements (5P41RR002301-120123, 1996; 3P41RR002301-15S10116, 1999; 3P41RR002301-15S10117) in support of this P41 grant to John Markley were included by David Weber. The project titles were: (1) Sequence specific assignments and structural determination of brain S100B protein, 1996; (2) Backbone dynamics of apo- and calcium-loaded S100B from brain, 1999; and (3) Training in DMX electronics, 1999.

7/1/99 - 6/30/00 UMB School of Medicine SRIS PI: David J. Weber

“Direct research initiative funds (DRIF) award”

$15,000 direct costs

no indirect costs

Specific Aims of project: To develop the glycoprotein project in order to receive external funding.

7/1/96 - 6/30/99 American Cancer Society - (**JFRA-641**: first submission) PI: David J. Weber

“Structure/Function Studies of S100β”

% effort: 10%

$90,500 total direct costs (salary support)

no indirect costs

Specific Aims of project: Structural and functional studies involving interactions of S100β with p53.

1/1/95 - 1/31/99 NIH R29 - (**R29GM52071-04**) PI: David J. Weber

(Priority Score-123; Percentile-2.2%: first submission)

“Structure/Function Studies of S100β Complexes by NMR”

% effort: 50%

$350,000 total direct costs

$68,046 direct costs for final full year (1/1/98-12/31/98)

$521,544 total direct and indirect costs

Specific Aims of project: NMR studies of the structure and function of the glial derived growth factor S100β. This grant was returned 11 months early since myR01 grant application was funded starting 2/1/99.

4/1/95 - 3/31/96 NIH S10 - (**S10RR10441-01**) PI: David J. Weber

(Priority Score-143: no percentile rating given; first submission)

“600MHz NMR Spectrometer”

$400,000 direct costs

No indirect costs for this shared instrumentation grant

Specific Aims of Project: Purchase of 600 MHz NMR Spectrometer.

7/1/94 - 6/30/95 UMAB School of Medicine SRIS PI: David J. Weber

“Direct research initiative funds (DRIF) award”

$15,000 direct costs

no indirect costs

Specific Aims of project: To develop the S100β project in order to receive external funding.

7/1/95 - 6/30/96 UMAB School of Medicine SRIS PI: David J. Weber

“Direct research initiative funds (DRIF) award”

$11,300 direct costs

no indirect costs

Specific Aims of project: To develop new NMR project studying scorpion toxins in order to receive external funding.

7/1/95 - 12/31/95 Cambridge Isotopes, Inc. PI: David J. Weber

“Isotope Research Grant Recipient”

$2,600 direct costs

no indirect costs

Specific Aims of project: To develop novel ways to isotopically enrich protein samples for NMR spectroscopy.

11/1/89 – 10/31/92 National Institutes of Health - (**F32GM013324**) PI: David J. Weber

“Structure/function studies of staphylococcal nuclease by NMR

$68,500 direct costs

Specific Aims of project: The Aims of this post-doctoral fellowship was to examine the structure and mechanism of the enzyme staphylococcal nuclease under the mentorship of Dr. Albert Mildvan at Johns Hopkins School of Medicine.

**PLANNED GRANT SUBMISSIONS**

*In preparation for the 07/01/17 deadline*

01/01/16 - 12/30/21 National Science Foundation PI: David J. Weber

“Stability of an X-type Four-helix Bundle at a Dimer Interface”

% effort: 10%

Costs of entire project: $500,000 total costs

Costs of current year: $100,000 total costs

Specific Aims of project: To determine the properties and propensities of various amino acid

residues in an X-type four helix bundle. These studies should elucidate an important mode of

protein-protein interaction.

#### PATENTS, PATENT APPLICATIONS, & BIOLOGICAL MATERIALS.

1. **Weber, D. J.**, Markowitz, J., Carrier, F., MacKerell, A.D. Invention Title: “Inhibitors of S100 proteins for the treatment of cancer and other diseases involving uncontrolled cell growth via an S100-dependent pathway”, NIH EIR #: 0820104-02-0006; Date Invention reported to PHS: 4/9/02; US Provisional Patent Application Number 60/368,835 was reported to PHS on 3/29/02

US Patent Application Number: **10/397,239** was reported to PHS on 3/27/03. **Issued:** **United States Patent 8,053,477** ***Weber* et al.** **November 8, 2011.**

1. **Weber, D. J.**, Markowitz, J.  Carrier, F., MacKerell, A.D.  Invention Title: “Identification and characterization of small molecule inhibitors of the calcium-dependent S100B-p53 tumor suppressor interaction” NH EIR#: 0820104-04-0040; Date Invention reported to PHS: 10/22/04; US Provisional Patent Application Number 60/581,081was reported to PHS on 6/20/05; US Patent number: **11/155,617** was reported to PHS on 3/30/09.
2. **Weber, D.J.**, Markowitz, J., Carrier, F., MacKerell, A.D. “Inhibitors of the S100-p53 protein-protein interaction and method of inhibiting cancer employing the same”. **Australian Letters** Patent number: **2003230705**. Issued September 11, 2008.
3. **Weber, D.J.**, Markowitz, J. Invention Title: “SBi2a binds to both apo and holo S100B”; NIH EIR #: 0820104-05-0020; Date Invention reported to PHS: 3/31/05; US Provisional Patent application number 60/669,452 – UMB waived rights to PHS on 5/26/06 because it was decided not to pursue further patent protection for this invention.
4. **Weber, D.J.**, Wilder, P., Markowitz, J., Charpentier, T., Toth, E. Invention Title: “Dual site inhibition of the S100B protein to restore functional wild-type p53 tumor suppressor protein levels and function”; NIH EIR #: 0820104-07-0006; Date invention reported to PHS: 2/28/07; US Provisional Patent application number 60/859,794 reported to PHS on 11/7/07; UMB waived rights to PHS on 11/13/07 because it was decided not to pursue further patent protection for this invention.
5. **Weber, D.J.**, Wright, N., Cannon, B., Zimmer, D.B. Invention Title: “Inhibitors of S100A1”; NIH EIR#: 0820104-08-0037; Date invention reported to PHS: 10/21/08; US Provisional Patent application number 61/107,130 reported to PHS on 10/6/09; UMB waived rights to PHS on 10/6/09 because it was decided not to pursue further patent protection for this invention.
6. **Weber, D.J.**, Coop, A., MacKerell, A.D., Thompson, L., Wilder, P., Kudrimoti, S., Bezawada, P., Raman, E. P.  Invention Title: “Inhibitors of the S100B-p53 interaction”; NIH EIR #: 0820104-09-0025; Date invention reported to PHS: 10/21/09.
7. Weiss, M., **Weber, D.J.**, and Bachman, K. “TP53 Gene-Knockout in Human Epithelial Cells”; Biological Material. Reported to PHS: 01/05/10.

1. Vitolo, M., **Weber, D.J.** “S100A4 (mts1) Gene-Knockout in human MCF7 Cells’ Biological Material. Reported to PHS: 01/25/10 (for GM58888; CA107331).
2. **Weber, D.J.**, Wilder, P.T., Gianni, K. "Inhibiting the S100B-p53 protein-protein interaction with SC00931" NIH EIR# is 0820104-10-0012; Reported to PHS: 05/10/10; US Provisional Patent application number 61/333,431. Not converted.
3. **Weber, D. J.**, Cavalier, M.C., Wilder, P.T., Charpentier, T.H. “Pentamidine Analog Inhibitors of S100B and Uses Thereof”, US Provisional Patent Application Number 62/240,600. Not converted.
4. **Weber, D.J.**, Cavalier, M.C., Wilder, P.T., Kales, S.C., Simeonov, A., Maloney, D., Jansen, D.J., Hongmao, S., Luci, D., Jadhav, A. “Inhibitors of S100B and Methods using the Same” US Provisional Patent Application Number 62/459,830. One-year conversion deadline: 2/16/18.

**PUBLICATIONS.**

***Peer-reviewed Research Articles******.***

1. Coburn, K., Melville, Z., Aligholizadeh, E., Roth, B., Varney, K.M., Carrier, F., and **Weber, D.J.** (2017) Crystal structure of the human heterogeneous ribonucleoprotein A18 (hnRNP A18) RNA Recognition Motif, ***Acta Cryst***, F73, 209-214.
2. Melville, Z., Aligholizadeh, E., McKnight, L., Weber, D.J., Pozharski, E., **Weber, D.J.** (2017) Crystal structure of human calcium-bound S100A1, ***Acta Cryst***, F73, 215-221.
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18. **Weber, D.J.**, Rustandi, R.R., and Inman, K.G. The interaction between S100B and the negative regulatory domain of p53 is Ca-dependent (1999) ***SERMACS***, 50, 98.
19. Tenenholz, T.C., Klenk, K.C., Matteson D.R., Rogowski, R.S., **Weber, D.J**. and Blaustine, M.P. Structural and functional differences of two toxins from the scorpion *Pandinus imperator* (1999) ***Physiol***. 42, 26.
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22. **Weber, D.J.**, Serpersu, E.H., Gittis, A.G., Lattman, E.E., and Mildvan, A.S. NMR Docking of the inhibitor 3'5'-pdTp into the X-ray structure of staphylococcal nuclease (1992) ***Biochemistry*** 31, 2203.
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28. **Weber, D.J.**, Lebowitz, M.S., and Mildvan, A.S. Conformation of an enzyme-bound substrate on staphylococcal nuclease as determined by NMR (1990) ***FASEB J.*** 4, 1659.
29. **Weber, D.J.**, Serpersu, E.H., and Mildvan, A.S. Studies of single and double mutants at the active site of staphylococcal nuclease (1990) ***Biophys. J.*** 57, 39.
30. **Weber, D.J.** Investigation of gla-domain peptides of prothrombin binding to synthetic phospholipid membranes (1989) ***Disse. Abst. Int.*** 50, 947-B.
31. **Weber, D.J.** Berkowitz, P., Pedersen, L.G., and Hiskey, R.G. Calcium ion binding properties of acetylated bovine prothrombin fragment 1 proteins (1988) ***FASEB J.*** 2, 1161.

**COMPUTER DATABASE ENTRIES.**

***Protein database entries (Protein Database/PDB files).***

1. MutT pyrophosphohydrolase enzyme (NMR, **1MUTT**).
2. Apo-S100B (NMR, **1SYM**).
3. Apo-S100B refined with dipolar couplings (NMR, **1BC4**).
4. Ca2+-S100B (NMR, **1QLK**).
5. Ca2+-S100B bound to a p53 peptide (NMR, **1DT7**).
6. Ca2+-S100B bound to the TRTK-inhibitory peptide (NMR, **1MWN**).
7. Apo-S100A1 (NMR, **1K2H**).
8. The apo-form of the metastasis protein Mts1 (S100A4) (NMR, **1M31**).
9. The olfactory marker protein, OMP (NMR, **1JYT**).
10. The K-channel blocking scorpion toxin TSTX-Kα (NMR, **1HP2**)
11. The K-channel blocking scorpion toxin PTX-Kα (NMR, **2PTA**)
12. The K-channel blocking scorpion toxin PTX-Kβ (NMR, **1C49**)
13. Zn2+,Ca2+-S100B (NMR, **1XYD**)
14. Ca2+-S100A1 (NMR, **1ZFS**)
15. The olfactory marker protein, OMP, refined with dipolar couplings (NMR, **1ZRI**)
16. IPI\* (with L. Black; NMR, **2JUB**, RCSB100299)
17. Zn2+,Ca2+-S100B (X-ray; **3CR2**, RCSB047111; 1.88 Å)
18. Pentamidine bound to Ca2+-S100B (X-ray; **3CR4**, RCSB047112; 2.15 Å)
19. Pentamidine bound to Zn2+,Ca2+-S100B (X-ray; **3CR5**, RCSB047113; 1.85 Å)
20. RyR12 bound to Ca2+-S100A1 (NMR; **2K2F**, RCSB100590)
21. Ca2+-S100B refined with dipolar couplings (NMR; **2K7O**, RCSB100779)
22. Ca2+-S1004 (mts1) (X-ray; 2Q91; 1.63 Å)
23. Ca2+-S100A1 bound to the TRTK-inhibitory peptide (NMR, **2KBM**, RCSB100918)
24. SBi523 bound to Ca2+-S100B (X-ray; **3GK4**, RCSB051960; 1.90 Å)
25. SBi279 bound to Ca2+-S100B (X-ray; **3GK2**, RCSB051958; 1.98 Å)
26. SBi132 bound to Ca2+-S100B (X-ray; **3GK1**, RCSB051957; 2.10 Å)
27. Ca2+-S100B (X-ray; **3IQO**, RCSB054744; 1.50 Å)
28. TRTK12-Ca2+-TRTK12 (X-ray; **3IQQ**, RCSB054746; 2.01 Å)
29. Chorpromazine (SC0067)-bound Ca2+-S100B (X-ray; 3**LK0**; 2.04 Å)
30. Thimersol(SC0332)-bound Ca2+-S100B (X-ray; 3**LK1**; 1.79 Å)
31. Sanguinarine(SC0844)-bound Ca2+-S100B (X-ray; 3**LLE**; 1.85 Å)
32. Human Ca2+-S100A5 (X-ray; **4DIR**, RCSB070380; 2.60 Å)
33. SBi4211-bound Ca2+-S100B (X-ray; **4FQO**, RCSB073234; 1.65 Å)
34. D63N mutant of bovine TRTK12-Ca2+-S100B (X-ray; **3RLZ** and RCSB065095; 2.01 Å)
35. Refined D63N mutant of TRTK12-Ca2+-S100B (X-ray; **3RM1**, RCSB065097; 1.24 Å)
36. TFP-S100A4 (X-ray, **3KO0**; 2.30 Å)
37. Dispersin (NMR, **2JVU**)
38. SBi29 bound to Ca2+-S100B (X-ray; **5DKR**; 1.74 Å)
39. SBi4172 bound to Ca2+-S100B (X-ray; **4PDZ**; 1.73 Å)
40. SBi4214 bound to Ca2+-S100B (X-ray; **5DKQ**; 1.59 Å)
41. SBi4225 bound to Ca2+-S100B (X-ray; **5DKN**; 1.53 Å)
42. SBi4434 bound to Ca2+-S100B (X-ray; **4PE0**; 1.08 Å)
43. SC0025 bound to Ca2+-S100B (X-ray; **5ER4**; 1.81 Å)
44. SC124 bound to Ca2+-S100B (X-ray; **4PE1**; 1.58 Å)
45. SC1475 bound to Ca2+-S100B (X-ray; **4PE4**;2.18 Å)
46. SC1982 bound to Ca2+-S100B (X-ray; **4PE7**; 1.65 Å)
47. SC1990 bound to Ca2+-S100B (X-ray; **5ER5**; 1.26 Å)
48. hnRNP A18 RNA Recognition Motif (X-ray; **5TBX**; 1.77 Å)
49. Ca2+-S100A1 (X-ray; **5K89**; 2.25 Å)
50. Ca2+-S100B bound to hdm4 peptide (X-ray; to be submitted)
51. Ca2+-Mn2+-S100B (X-ray; to be submitted)

#### Ca2+-S100B bound to SC0931 (X-ray; to be submitted)

#### Ca2+-S100B bound to SBi4872 (X-ray; to be submitted)

#### Ca2+-S100B bound to SBi4873 (X-ray; to be submitted)

#### Ca2+-S100B bound to SBi5205 (X-ray; to be submitted)

#### Ca2+-S100B bound to SBi5311 (X-ray; to be submitted)

#### Ca2+-S100B bound to SPB05355 (X-ray; to be submitted)

#### Ca2+-S100B bound to SBi5345 (X-ray; to be submitted)

#### Ca2+-S100B bound to SBi5349 (X-ray; to be submitted)

#### Ca2+-S100B bound to SBi5356 (X-ray; to be submitted)

***NMR Chemical Shift Database (BMRB files)***

1. Apo-S100B (entry 4285)
2. Ca2+-S100B (entries 15923, 4105)
3. Zn2+,Ca2+-S100B (entry 5895)
4. Ca2+-S100A1-RYRP12 (entry 15296)
5. Ca2+-S100A1 (entry 6583)
6. Apo-S100A4 (entry 4892)
7. Ca2+-S100B-TRTK12 (entry 17061)
8. ADP-ribosyltransferase toxin CDTA (entry 25665)

**PRESENTATIONS**

(Presentations listed as published abstracts or proceeding notes are not included in this section)

***Honored Presentations***

1. **Weber, D.J.** Targeting protein-protein interactions (PPIs) in melanoma and the role of binding and functional folding (2017) Mid-Atlantic Meeting of Crystallography (MAMC). Invited speaker. June 6, 2017, Baltimore, MD.
2. **Weber, D.J.** Targeting S100B specifically in malignant melanoma (2016) Elizabeth City State University, NC. Host: Dr. Banerjee.
3. **Weber, D.J.** Structure, function, and inhibition of S100 proteins in disease (2016) University of Marylan School of Medicine, Department of Biochemistry & Molecular Biology, Department Seminar. Host: Dr. Richard Eckert.
4. **Weber, D.J.** The use of NMR for drug development (2016) FASEB meeting of the Association of Biomolecular Resource Facilities (ABRF*).* Fort Lauderdale, FL. Session Chair & Invited Speaker.
5. **Weber, D.J.** Session chair (2016) for the *IBBR & NIST NMR Day*, Institute of Biotechnology and Bioscience Research (IBBR) Rockville, MD. Host: Dr. John Marino.
6. **Weber, D.J.** Structure-based drug design for restoring p53 in malignant melanoma. Shnaper Translational Seminar Series (2016) University of Maryland School of Medicine, Baltimore, MD. Host: Brett Hassel.
7. **Weber, D.J.** The Center for Biomolecular Therapeutics: A new initiative at the University of Maryland School of Medicine (2015). Johns Hopkins School of Medicine, Department of Pharmacology, MD. Host: Dr. Philip Cole, Professor & Chair.
8. **Weber, D.J.** Structure, function and inhibition of S100B in melanoma (2015) International 19th International Symposium on Ca2+ and Ca2+ Binding Proteins in Health and Disease. Host: Professor Walter Chazin; invited speaker and session chair.
9. **Weber, D.J.** Structure, function and inhibition of S100 proteins (2015) Stanford Research Institute. Host: Dr. Nathan Collins.
10. **Weber, D.J.** Structure, function, and inhibition of S100 proteins in disease (2015). North Dakota State University, ND. Host: Drs. Leclerc, Vetter, and Singh.
11. **Weber, D.J.**, Binding and Functional Folding (BFF) and the development of highly specific S100B inhibitors (2015). University of Maryland, College Park, MD. Host: Professor Lai-Xi Wang.
12. **Weber, D.J.** Detecting residues involved specific protein-protein interactions via Nuclear Magnetic Resonance (NMR): A story of inhibiting S100B in melanoma (2014) University of Wisconsin School of Medicine. Host: Dr. Blake Hill.
13. **Weber, D.J.** Detecting residues involved specific protein-protein interactions via Nuclear Magnetic Resonance (NMR): A story of inhibiting S100B in melanoma (2014) University of Pennsylvania Department of Chemistry. Host: Graduate Student Lecture Series (A committee of graduate students organized and hosted this lecture).
14. **Weber, D.J.**  Inhibiting protein-protein interactions in maligant melanoma (2013) ACS Affiliates chapter at University of Maryland, College Park. Host: Dr. DeShong and students.
15. **Weber, D.J.** Inhibiting protein-protein interactions in malignant melanoma (2013) *IBBR & NIST NMR Day*, Institute of Biotechnology and Bioscience Research (IBBR) Rockville, MD. Host: Dr. John Marino.
16. **Weber, D.J.** Inhibiting protein-protein interactions in malignant melanoma (2013) *National Institutes of Health (NIH)*. Host: Dr. Nico Tjandra.
17. **Weber, D.J.** Structure, function, and drug design involving the S100B protein (2012) *Institute of Human Genomics (IGS)* University of Maryland, Baltimore, MD. Host: Dr. Claire Fraser.
18. **Weber, D.J.** The role of dynamics for inhibiting protein-protein interactions (2012) *North Carolina State University*, Raliegh NC. Host: Dr. John Cavanagh
19. **Weber, D.J.** Restoration of p53 in malignant melanoma: a new strategy for rational drug design (2012) *University of Kansas Cancer Center*, Kansas City KA. Host: Raymond Perez
20. **Weber, D.J.** The role of S100 proteins in calcium-signaling and cancer (2012) *University of North Carolina-Chapel Hill*, Chapel Hill, NC. Host: William Janzen
21. **Weber, D.J.** Structure, function and inhibition of S100 protein-protein interactions (2012) Drexel University Department of Biochemistry Seminar Series. Philadelphia, PA
22. **Weber, D.J.,** Functional binding and folding model for protein-protein interactions and implications for drug design (2011) *Keystone Symposium*, Big Sky MO. Hosts: Drs. David Wemmer, Dorothy Kern, and Michael Summers.
23. **Weber, D.J.**, Inhibiting S100B restores p53 in malignant melanoma (2010) *Johns Hopkins School of Medicine*, Keynote speaker at the *LEM symposium*. Host: Professor Craig Montell.
24. **Weber, D.J.**, Structure, function, and inhibition of the S100 protein, S100B (2009) *Hood College*, invited speaker. Host: Professor Dana C. Lawrence.
25. **Weber, D.J.** Structure/function and Inhibition of the tumor marker S100B (2009) University of Maryland School of Medicine Council meeting, Honarary speaker. Host: Dr. Albert Reece, Dean of the School of Medicine.
26. **Weber, D.J.** Structure/function and inhibition of S100B (2009) *First translational technologies and resources symposium*. Keynote lecturer. Host: Dr. Nicholas Ambulos.
27. **Weber, D.J.** Structure and function of S100 proteins (2008) *Symposium celebrating the 100th year of the Department of Biological Chemistry at the Johns Hopkins School of Medicine* (Invited Speaker). Baltimore, MD. Host: Professor Albert Mildvan.
28. **Weber, D.J.** Interaction of S100A1 with the Ryanodine Receptor (RyR12) as studied by NMR Spectroscopy (2008) Gordon Research Conference on computational aspects – Biomolecular NMR (Invited Presentation). Ciocco, Barga, Italy. Organizer: Professor Rafael Brüschweiler.
29. **Weber, D.J.** The inhibition of S100B restores p53 in melanoma (2008) *PepCon 2008, Protein & Peptide Technology: From Concept to Market* (Invited Plenary Speaker). Shenzen, China Organizer: Sally Song.
30. **Weber, D.J.** Structure and function of S100 proteins (2008) CARB NMR symposium (Invited Plenary Speaker). Rockville, MD. Organizer: Professor Nese Sari.
31. **Weber, D.J.,** Wright, N.W., Prosser, B., Zimmer, D.B., and Schneider, M.L. Interaction of S100A1 with RyR1 (2008) *Gordon Conference on Computational Aspects – Biomolecular NMR.* (Invited Attendee). Ciucco, Italy. Organizer: Rafael Brüschweiler (Chair).
32. **Weber, D.J.** The calcium-dependent interaction of S100B with the tumor suppressor protein, p53, inhibits normal tumor suppressor function in malignant melanoma (2007). *Symposium 1: Calcium-activated Switches.* *The 2007 Annual Meeting of the Biophysical Society* (Invited Speaker). Organizer: Professor Madeline A. Shea.
33. **Weber, D.J.** Inhibition of the calcium-binding protein S100B restores functional p53 tumor suppression in malignant melanoma (2007). Center for Vascular and Inflammatory Disease (CVID) seminar series (invited speaker); University of Maryland School of Medicine. Host: Professor Dudley Strickland.
34. **Weber, D.J.** The American Cancer Society: The applicants viewpoint (2007). The ACS session at the *National Meeting of The American Society for Biochemistry & Molecular Biology (ASBMB)*, Washington D.C. Organizer: Dr. Christopher Widnell.
35. **Weber, D.J.** The role of S100B in down-regulating tumor suppression in malignant melanoma (2007). College of Veterinary Medicine Department of Veterinary Pathobiology, *Texas A & M University* (Invited Speaker). Host: Dr. Danna Zimmer.
36. **Weber, D.J.** S100B contributes to the degradation of the p53 tumor suppressor protein (2006). 9th *European Symposia on Calcium-binding Proteins in Normal and Transformed Cells, Strousberg Germany* (Invited speaker). Organizer: Professor Claus W. Heizmann.
37. **Weber, D.J.** S100B is a calcium-mediated switch that turns off the tumor suppressor protein in malignant melanoma (2006). *Center of Marine Biotechnology* *(COMB)* Invited speaker. Host: Professor Shil Dassarma.
38. **Weber, D.J.** Restoration of the p53 tumor suppressor in malignant melanoma (2006). *Grand Rounds Lecture Hematology/Oncology University of Maryland Medical System (UMMS)* Invited speaker. Host: Professor Barry Meisenberg & Professor Kevin Cullen.
39. **Weber, D.J.** S100B is a calcium-mediated switch that turns off the tumor suppressor protein in malignant melanoma (2006). *Translational Oncology Research Centre   
    Queen Alexandra Hospital*, *Portsmouth, England* (Invited speaker). Host: Professor Ian Cree.
40. **Weber, D.J.** S100B is a calcium-mediated switch that turns off the tumor suppressor protein in malignant melanoma (2006). *Magnetic resonance center (CERM), The University of Florence, Italy* (Invited speaker). Host: Professor Ivano Bertini.
41. **Weber, D.J.** The calcium-switch that turns off the tumor suppressor protein, p53 (2005). *21st International Conference of Magnetic Resonance in Biological Systems*, *Hyderabad, India* (Invited Speaker). Organizer: Professor K.V.R. Chary.
42. **Weber, D.J.** S100B is a calcium-switch that turns off the tumor suppressor protein, p53 (2005). *The University of Maryland at College Park, MD* (Invited Professor). Host: Professor Dorothy Beckett.
43. **Weber, D.J.** The calcium-dependent interaction between S100B and p53 down-regulates tumor suppression (2004). *The International Nuclear Magnetic Resonance Society Annual Meeting*: *Symposia on NMR, Drug Design, and Bioinformatics, Calcutta, India* (Invited Speaker) Organizer: Professor Siddhartha Roy.
44. **Weber, D.J.** Restoration of tumor suppression in malignant melanoma (2004). *Mayo Clinic, Rochester, MN* (Invited Professor). Host: Professor L. James Maher, III.
45. **Weber, D.J.** The calcium-dependent interaction between S100B and p53 down-regulates tumor suppression (2004). *Texas A&M University, College Station, TX* (Invited Speaker). Host: Professor Danna Zimmer.
46. **Weber, D.J.** The calcium-dependent interaction between S100B and p53 down-regulates tumor suppression (2004). *NMR as a Tool in Biotechnology: NMR symposium at CARB* (Invited Speaker). Organizer: Dr. Nesi Sari.
47. **Weber, D.J.** The link between transcription activation and intracellular Ca2+ levels (2003). *The University of Arkansas* (Invited speaker) Host: Dr. Wesley Stites.
48. **Weber, D.J.** The use of nuclear magnetic resonance (NMR) spectroscopy for cancer research (2003). *The University of Maryland School of Medicine Board of Visitors Meeting* (Invited speaker) Host: Dr. Donald E. Wilson, M.D., M.A.C.P.
49. **Weber, D.J.** The use of nuclear magnetic resonance (NMR) spectroscopy for cancer research (2003). *The University of Maryland Medical System Board of Visitors Meeting* (Invited speaker) Host: Mr. Edmond F. Notebaert, President and CEO of UMMS.
50. **Weber, D.J.** The use of nuclear magnetic resonance spectroscopy in biomedical research (2003). *Presentation to the Maryland House Appropriations Committee* (Invited speaker) Host: Dr. Donald E. Wilson, M.D., M.A.C.P.
51. **Weber, D.J.** The link between transcription activation and intracellular Ca2+ levels (2003). *Purdue University* (Invited speaker) Host: Dr. Carol Post.
52. **Weber, D.J.** The link between transcription activation and intracellular Ca2+ levels (2003). *The National Institutes of Health* (Invited speaker) Host: Dr. Nico Tjandra.
53. **Weber, D.J.** The Ca2+-dependent interaction of S100B with the tumor suppressor protein, p53 (2002). Regional Meeting of *The Lehigh Valley Chapter of the American Chemistry Society* (Invited speaker) Host: Dr. Marion Smith.
54. **Weber, D.J.** The Ca2+-dependent interaction of S100B with the tumor suppressor protein, p53 (2002). *McDanial College Lecture Series* (Invited speaker) Host: Students of βββ Biology honor society.
55. **Weber, D.J.** The Ca2+-dependent interaction of S100B with the negative regulatory domain of p53 (2001) *Pennsylvania Sate University School of Medicine* (Invited speaker) Host: Dr. George Makhatadze.
56. **Weber, D.J.** The Ca2+-dependent interaction of S100B with the tumor suppressor protein, p53 (2001) *The Midatlantic Regional Meeting of the American Chemical Society* (Inivited speaker). Organizer: Dr. Micheal Summers.
57. **Weber, D.J.** The Ca2+-dependent interaction of S100B with the tumor suppressor protein, p53 (2001) *The National Institutes of Health* (Inivited speaker). Host: Dr. Curt Harris.
58. **Weber, D.J.** The Ca2+-dependent interaction of S100 proteins with their targets (2000) *XIXth International Conference on Magnetic Resonance in Biological Systems*, Florence, Italy (Invited speaker) Meeting Organizer: Dr. Ivano Bertini.
59. **Weber, D.J.** The interaction of S100B and the tumor suppressor protein, p53 (2000) *University of Maryland Research Retreat*, Baltimore, MD (Session organizer/speaker) Meeting Organizer: Dr. Howard Dickler.
60. **Weber, D.J.** The Ca2+-dependent interaction of S100B with p53 (2000) *Albert Einstein College of Medicine* (Invited Speaker) Host: Dr. Anne Bresnick.
61. **Weber, D.J.**  The Ca-dependent interaction of S100B with p53 (1999) *The University of Virginia* (Invited speaker) Host: Dr. Sepideh Khorasanizadeh.
62. **Weber, D.J.** The Ca-dependent interaction of S100B with the tumor suppressor protein, p53 (1999) *International Symposium on calcium-binding proteins and calcium function in health and disease,* Tokyo, Japan (Invited Speaker) Meeting Organizer: Dr. Katsuhiko Mikoshiba.
63. **Weber, D.J.** The Ca2+-dependent interaction of S100B with the tumor suppressor protein, p53 (1999) *The American Chemical Society Southeastern Regional Meeting, Memphis*, TN (Invited speaker) Session Organizer: Dr. Engin Serpersu.
64. **Weber, D.J.** The Ca2+-dependent interactions of S100B with target proteins (1998) *The Johns Hopkins School of Medicine*, Baltimore, MD (Invited speaker) Host: Dr. Albert Mildvan.
65. **Weber, D.J.** The Ca2+-dependent interaction of S100B with the tumor suppressor protein, p53 (1998) *XVIIIth International Conference on Magnetic Resonance in Biological Systems*, Tokyo,Japan (Invited speaker) Meeting Organizer: Dr. Masatsune Kainosho.
66. **Weber, D.J.** A look at the interaction of S100B with target proteins using NMR spectroscopy (1998) *University of Alabama School of Medicine*, Mobile, AL (Invited speaker) Host: Dr. Danna Zimmer.
67. **Weber, D.J.** Structure/function studies of the Ca(II)-binding protein S100B (1997) *Center for Advanced Research and Biotechnology (CARB)*(Invited speaker), Host: Dr. James Stivers.
68. **Weber, D.J.** Structure/function studies of S100 proteins (1996) *University of Texas Southwest Medical Center*, October 13, 1996 (Invited speaker), Host: Dr. Philip Thomas.
69. **Weber, D.J.** Studies of the structure and function of S100B(ββ) (1996) *Washington Area NMR Group Lecture*, February 29, 1996 (Invited speaker), Host: Dr. Bruce Coxon.
70. **Weber, D.J.** The Three-dimensional solution structure of rat apo-S100β determined by heteronuclear multidimensional NMR spectroscopy (1996) *Fourth European Symposium on Calcium Binding Proteins in Normal and Transformed Cells,* *University of Perugia*, Perugia Italy, May 4, 1996 (Invited speaker), Meeting Organizer: Professor Roserio Donato.
71. **Weber, D.J.** Studies of the enzymes mutT and staphylococcal nuclease by NMR and site-directed mutagenesis. Department of Biochemistry, *Columbia University School of Medicine*, October 14, 1994 (Invited speaker). Host: Arthur Palmer, III.
72. **Weber, D.J.** Studies of the enzyme mutT by NMR and site-directed mutagenesis. Department of Biochemistry, *The Center of Marine Biotechnology (COMB)*, November 30, 1994 (Invited speaker). Host: Frank Robb.
73. **Weber, D.J.** Structure/function studies of the mutT enzyme by NMR. *The University of Maryland at Baltimore County*, Department of Chemistry and Biochemistry, May 1994 (Invited speaker). Host: Dr. Michael Summers.
74. **Weber, D.J.** Structural and mechanistic studies of staphylococcal nuclease by NMR and site-directed mutagenesis. *The Johns Hopkins School of Medicine Young Investigators' Day Awards*, April 1992 (oral and poster presentation).
75. **Weber, D.J.** Structural and mechanistic studies of staphylococcal nuclease by NMR and site-directed mutagenesis. *Dartmouth College*, Department of Chemistry, April 1992 (Invited speaker). Host: Dr. Dean Wilcox.
76. **Weber, D.J.** Structural and mechanistic studies of staphylococcal nuclease by NMR and site directed mutagenesis. *Lousiana State University School of Medicine*, Department of Biochemistry, March 1992 (Invited speaker). Host: Dr. Robert Rhoads.
77. **Weber, D.J.** Structural and mechanistic studies of staphylococcal nuclease by NMR and site-directed mutagenesis. *Tufts University School of Medicine*, Department of Biochemistry, March 1992 (Invited speaker). Host: Dr. William Bachovchin.
78. **Weber, D.J.** Structural and mechanistic studies of staphylococcal nuclease by NMR and site-directed mutagenesis. *National Cancer Institute, Division of Biophysics*, March 1992 (Invited speaker). Host: Dr. Andrew Byrd.
79. **Weber, D.J.** Structural and mechanistic studies of staphylococcal nuclease by NMR and site-directed mutagenesis. *University of Maryland School of Medicine*, Department of Biological Chemistry, March 1992 (Invited speaker). Host: Dr. Guiseppe Inesi.
80. **Weber, D.J.** Structural and mechanistic studies of staphylococcal nuclease by NMR and site-directed mutagenesis. *The City College of New York*, Department of Biochemistry and Chemistry, February 1992 (Invited speaker). Host: Dr. C.S. Russell.
81. **Weber, D.J.** Structural and mechanistic studies of staphylococcal nuclease by NMR and site-directed mutagenesis. *The Johns Hopkins School of Hygiene and Public Health* Department of Biochemistry, January 1992 (Invited speaker). Host: Dr. Roger McMacken.
82. **Weber, D.J.** The structure of an enzyme-bound substrate of staphylococcal nuclease as determined by NMR. Department of Nephrology, *The Johns Hopkins School of Medicine*. Host: Raymond Pratt, October 1990 (Invited speaker).
83. **Weber, D.J.** A Structure/function study of the double mutant D21E + R87G of staphylococcal nuclease. *NIH/Department of Food and Drug Administration*. Host: Elizabeth Zapata, February 1989 (Invited speaker).
84. **Weber, D.J.** The role of amino acid residues 1-45 in the binding of prothrombin to phospholipid membranes. *Western Maryland College*, Department of Chemistry. Host: Richard Smith and Donald Jones, February 1989 (Invited speaker).

***Other presentations:***

1. Cavalier, M.C., **Weber, D.J.** (2015) Targeting Melanoma with Small Molecules: Inhibitors of the Calcium-Binding Protein S100B. UMB Department of Biochemistry Scientific Retreat, Baltimore, MD (poster presentation).
2. Cavalier, M., Wilder, P., Charpentier, T., and Weber, D. (2015). X-ray crystallographic study of small-molecules within the persistent binding sites of S100B. UMB 6th Annual Cancer Biology Research Retreat, Baltimore, MD (poster presentation).
3. Alasady, M.J., Wilder, P.T., and **Weber, D.J.** (2015) Identification and characterization of S100B targets in melanoma. 4th Annual Biochemistry Retreat. Baltimore, MD. January 2015.
4. Melville, Z. and **Weber, D.J.** (2014) Characterizing a New Metal Binding Site in S100B. Poster presented at the UMB Dept. of Biochemistry Scientific Retreat, Baltimore, MD.
5. **Weber, D.J.** Center for Biomolecular Therapeutics (Update). Oral presentation to the “University of Maryland Executive Committee Meeting of the School of Medicine Council (2014), Baltimore, MD. Host: E. Albert Reece, MD, PhD, MBA and V.P. for Medical Affairs & Dean, University of Maryland School of Medicine.
6. Cavalier, M.C., Wilder, P.T., Pierce, A., Raman, E.P., Varney, K., Lapidus, R., Sausville, E., Zimmer, D.B., Coop, A, MacKerell Jr., A.D., and **Weber, D. J.** Covalent inhibitors of S100B (SBiXs) in malignant melanoma (2014). UMB Department of Biochemistry & Molecular Biology Scientific Retreat, Baltimore, MD (poster presentation).
7. Cavalier, M.C., Wilder, P.T., Pierce, A., Raman, E.P., Varney, K., Lapidus, R., Sausville, E., Zimmer, D.B., Coop, A, MacKerell Jr., A.D., and **Weber, D.J.** (2014) Covalent inhibitors of S100B (SBiXs) in malignant melanoma. UMB Fifth Annual Cancer Biology Research Retreat, Baltimore, MD (poster presentation).
8. Melville, Z. and **Weber, D.J.** S100B Manganese Coordination. UMB Dept. of Biochemistry Scientific Retreat (2013), Baltimore, MD.
9. Cavalier M.C., Wilder, P.T., Pierce A., McKnight, L.E., Bezawada, P., Charpentier, T., Hartman, K.G., Toth, E.A., Coop, A., MacKerell Jr., A.D., and **Weber, D. J.** Structure/Function Characterization of Inhibitors of the Calcium-Binding Protein S100B (2013). UMB Fourth Annual Cancer Biology Research Retreat, Baltimore, MD.
10. Cavalier, M.C.; McKnight, L.E., Raman, E.P., Bezawada, P., Kudrimoti, S., Wilder, P.T., Hartman, K.G., Toth, E.A., Coop, A., MacKerell Jr., A.D., and **Weber, D. J.** Structure/Function Characterization of SBi4225, a Novel Inhibitor of the Calcium-Binding Protein S100B (2013) UMB Dept of Biochemistry Scientific Retreat, Baltimore, MD.
11. Liriano, M. and **Weber, D.J.** Protein dynamics of the calcium-binding protein S100A5 in the presence and absence of target (2009) MD/PhD Annual Conference in Keystone, Colorado.
12. **Weber, D.J.** Structure/function and Inhibition of the tumor marker S100B (2009) Greenebaum Cancer Center MSB Retreat. Host: Dr. Alan Tomkinson.
13. Zhong, S., Wilder, P.T., Charpentier, T.H., Liriano, M., **Weber, D.J.**, and MacKerell, A.D. Identification of inhibitors for blocking the S100B-p53 interaction using virtual database screening. Annual meeting of the American Chemical Society (New Orleans, LA), April 2008.
14. Wright N.T., Prosser B.L., Varney K.M., Schneider, M.F., **Weber, D.J**., The Structure of S100A1 bound to the CaM binding site on RyR1 (2008) Graduate student research symposium, UMB, Baltimore MD.
15. Song, H., Kotlikoff, M.I., Lingrel, J.B., Mohler, P.J., **Weber, D.J.**, and Blaustein, M.P. Linkage of α2 Na+/Ca2+ exchanger expression (2008) P-ATPase meeting, Aarhus, Denmark.
16. Liriano, M. and **Weber, D. J.** Structure activity relationships of small molecules interfering with the S100B and p53 interaction. Graduate Research Symposium at the University of Maryland, School of Medicine (Baltimore, Maryland), March 2008.
17. Liriano, M. and **Weber, D.J.** Structure activity relationships of small molecules interfering with the S100B and p53 interaction. Meyerhoff 20th Anniversary Symposium, (Baltimore, Maryland), March 2008.
18. Ling. J., Wilder, P.T., Vitolo, M., Carrier, F., and **Weber, D.J.** The calcium-binding protein S100B inhibits p53-dependent apoptosis in malignant melanoma. 14th Congress of Ca2+-Binding Proteins and Ca2+ Function in Health and Disease, La Palma (Canary Islands, Spain), October 2007.
19. Charpentier, T.H., Wilder, P.T., Varney, K.M., Toth, E.A. and **Weber, D.J.** The 3D structures of Ca2+-S100B in Zn2+- and pentamidine-bound complexes as determined by X-ray crystallography. A Look Ahead XI: Futures in Biomedical Research, University of Maryland, Baltimore County, November 14, 2007.
20. Charpentier, T.H., Wilder, P.T., Varney, K.M., Toth, E.A., and **Weber, D.J.** The 3D structures of Ca2+-S100B in Zn2+- and pentamidine-bound complexes as determined by X-ray crystallography. 2007 Chemistry-Biology Interface Training Summit, Bethesda, MD. June 21 – June 22, 2007.
21. Wright N.T., Prosser B.L., Varney K.M., Schneider M.F., **Weber D.J.**, Structure-Function studies on S100A1, a putative regulator of E-C coupling (2007) Graduate student research symposium, UMB, Baltimore MD.
22. Charpentier, T.H. Wilder, P.T., Varney, K.M., Toth, E.A., **Weber, D.J**. Preliminary Crystal Data of Small compounds Bound to Ca2+-S100B. A Look Ahead X: Futures in Biomedical Research, University of Maryland, Baltimore County, November 1, 2006.
23. Charpentier, T.H. Wilder, P.T., Varney, K.M., Toth, E.A., **Weber, D.J.** Crystal Structure of Pentamidine Bound to Ca2+-S100B. 28th Annual Graduate Research Conference, University of Maryland, Baltimore County, April 28, 2006.
24. **Weber, D.J.** The restoration of the p53 tumor suppressor in malignant melanoma using inhibitors of the calcium-binding protein, S100B (2006) *University of Maryland School of Medicine Department of Biochemistry & Molecular Biology* (Departmental Seminar).
25. Wright N. T., Varney K.M., **Weber D.J.**, The Three-Dimensional Solution structure of Ca-

S100A1(2005) 46th Exp. NMR Conf., Providence RI.

1. Wright N.T., Varney K.M., **Weber D.J.**, The Three-Dimensional Solution structure of Ca-S100A1 (2005) Graduate student research symposium, UMB, Baltimore MD.
2. Charpentier, T.H. Wilder, P.T., Varney, K.M., Toth, E.A., **Weber, D.J.** Crystal structure of pentamidine bound to Ca2+-S100B. A Look Ahead IX: Futures in Biomedical Research, University of Maryland, Baltimore County, November 15, 2005.
3. Wright N.T., Ellis K.C., Vallely K.M., Gitti R., **Weber D.J.**, Assignment and Secondary Structure of Calcium-bound S100A1 (2004) Biophysical Society Meeting, Baltimore, MD
4. **Weber, D.J.** The calcium-dependent interaction of S100B with the tumor suppressor protein, p53 (2003) *Grand rounds, University of Maryland Medical System* (invited lecture)*.*

1. Markowitz, J., Chen, I-J., Carrier, F., Mackerell, A.D., **Weber, D.J.** Design of S100B Inhibitors (2003) *The Eighteenth Annual National M.D./Ph.D. Student Conference*, pp. 58(oral presentation).
2. Inman, K.G., Lee, A.L., Wand, A.J., and **Weber, D.J.** Sidechain dynamics of the Ca2+-signaling protein, S100B(), as determined by 2H-NMR relaxation (2001) *Twenty-third University of Maryland Graduate Research Conference*, pp. 26. (Winning poster in Biochemistry B section).
3. Markowitz, J., Chen, I-J., Mackerell, A.D., and **Weber**, **D.J.** Investigations of potential inhibitors of the S100B()-p53 interaction (2001) *Twenty-third University of Maryland Graduate Research Conference*, pp. 44.
4. Fialcowitz, E.J., **Weber, D.J.**, Black L.W. Nuclear magnetic resonance studies of the small-subunit of T4 phage terminase enzyme (2001) *Twenty-third University of Maryland Graduate Research Conference*, pp. 60.
5. Ellis, K.C., Hayhurst, M., Gilly, W.F., Blaustein, M.P., and **Weber, D.J.** Interactions of a toxin from the scorpion *Tityus serrulatus* with a cloned K+ channel from squid (SqKv1A) (2001) *Twenty-third University of Maryland Graduate Research Conference*, pp. 61.
6. Vallely, K.M., Rustandi, R.R., Varlamova, O., Klein, M.G., Almo, S.C., Bresnick, A.R., and **Weber, D.J.** Chemical shift assignments and secondary structure of human apo-Mts1 (S100A4) (2001) *Twenty-third University of Maryland Graduate Research Conference*, pp. 61. (Winning poster in Biochemistry C section).
7. **Weber, D.J.**, Rustandi, R.R., Carrier, F. The interaction of S100B with the tumor suppressor protein p53 (2000) *European Calcium Society Meeting*, Paris, France (poster presentation).
8. **Weber, D.J.** Rustandi, R.R., Inman, K.G., and Baldisseri, D.M. The Ca2+-dependent interaction of S100 proteins with their targets (2000) Book of Abstracts for the *XIXth* .*International Conference on Magnetic Resonance in Biological Systems*, pp. 104.
9. Inman, K.G., Baldisseri, D.M., Miller, K.E., and **Weber, D.J.** Backbone dynamics of the calcium-signalling protein, S100B() as determined by 15N NMR relaxation (2000) Book of Abstracts for the *XIXth* .*International Conference on Magnetic Resonance in Biological Systems*, pp. 153.
10. Klenk, K., Tenenholz, T., Blaustein, M.P. **Weber, D.J.** Sequence-specific assignments and secondary structure determination of a toxin form *Tityus serrulatus* (TsTX-K) using NMR spectroscopy(TsTX-K). *Twenty-second Annual Graduate Research Day, UMB-UMBC,* (Winning poster in the Biochemistry I section).
11. Inman, K.G., Baldisseri, D.M., Miller, K.E., and **Weber, D.J.** Backbone dynamics of the calcium-signaling protein apo-S100B as determined by 15N NMR relaxation. *Twenty-second Annual Graduate Research Day, UMB-UMBC*  (Winning poster in the Biochemistry II section).
12. **Weber, D.J.** Interaction of S100 proteins with p53 (1999) *Student Research Forum*, University of Maryland School of Medicine, Baltimore, MD (invited speaker) Host: Dr. Jordon Warnick.
13. Markowitz, J., Chen, I.-J., Mackerell, A.D., **Weber, D.J.** Computer search for potential inhibitors of the S100-p53 interaction (1999) *Research Forum for Medical Students*, University of Maryland School of Medicine, Baltimore, MD (oral presentation).
14. Garbuglia, M., Verzini, M., Rustandi, R.R., **Weber, D.J**., Gerke, V., and Donato, R. The C-terminal extension is essential for S100A1 to interact with GFAP, tubulin, the S100A1 and S100B-inhibitory peptide , TRTK-12, and a peptide derived from p53, and for S100A1 to inhibit GFAP polymerization (1998) *Fifth European Symposium on Calcium Binding Proteins in Normal and Transformed Cells,* Muenster, Germany (poster presentation).
15. Inman, K.G., Rustandi, R.R., Baldisseri, D.M., Miller, K.E., **Weber, D.J.** Backbone dynamics of the calcium-binding protein S100B() by heteronuclear NMR relaxation. *NMR Technologies: Development and Applications for Drug Design and Characterization* (1998) Cambridge Healthtech Institute (Cambridge, MA; poster presentation).
16. Zimmer, D.B., Landar, A.L., Rustandi, R.R., and **Weber, D.J**. S100A1 interaction with calcium-dependent and calcium-independent target proteins (1998) *Fifth European Symposium on Calcium Binding Proteins in Normal and Transformed Cells,* Muenster, Germany (poster presentation).
17. Klenk, K., Tennenholz, T. Rogowski, R.S., Collins, J.J. Gustafson, T.A., Blaustein, M.P. and **Weber, D.J.**  Solution structure determination of a toxin from pandinus imperator (PiTX-K) using NMR spectroscopy (1997) *University of Maryland Membrane Training Program*. Second Annual Retreat, Harpers Ferry, WVA. October 9-10, 1997.
18. Drohat, A.C., Nenortas, E., Beckett, D., and **Weber, D.J.** S100B Oligomerization state at nanomolar concentration (1997). The Tenth International Symposium on Calcium-Binding Proteins and Calcium Function in Health and Disease (poster presentation), sponsored by *The Nobel Committee for Chemistry and The Eric K. Fernström Foundation*; June 17-21, 1997 in Lund, Sweden, p. 60.
19. Drohat, A.C., Nenortas, E., Beckett, D., and **Weber, D.J.** S100B Oligomerization state at nanomolar concentration (1997). Nineteenth Annual Graduate Research Day, *UMAB-UMBC*, p. 46. (Winning poster in the Biochemistry section).
20. Tenenholz, T., Klenk, K., Rogowski, R.S., Collins, J.J., Gustafson, T.A., Blaustein, M.P., and **Weber, D.J.** NMR solution structure determination of a toxin from *Pandinus imperator* (PiTX-Kβ) using NMR Spectroscopy (1997) Nineteenth Annual Graduate Research Day, *UMAB-UMBC*, p. 47. (Honorable mention in the Biochemistry section).
21. Drohat, A.C., Amburgey, J.C., Abildgaard, F., Starich, M.R., **Weber, D.J.** Three-dimensional solution structure of apo-S100β determined by multidimensional NMR spectroscopy (1996) Celebration of the *Opening of the UMAB NMR Center*, October 7, 1996 (poster session).
22. Tenenholz, T., Rogowski, R.S., Amburgey, J.C., Collins, J.C., Gustafson, T.A., Blaustein, M.P., and **Weber, D.J.** Solution structure determination of a toxin from *Pandinus Imperator* (PiTX-K) using NMR spectroscopy (1996) Celebration of the *Opening of the UMAB NMR Facility*, October 7, 1996 (poster session).
23. Hall, G., Wilder, P.T., and **Weber, D.J.** Production of mutant S100β for fluorescence spectroscopy studies (1996) *University of Maryland School of Medicine*, Abst. #96.65, Student Res. Forum, UMAB, p. 31.
24. **Weber, D.J.** Studies of the structure and function of S100B(ββ) (1996) Colloquium on Science, *University of Maryland School of Medicine*, June 26, 1996 Invited speaker), Host: Dr. Jordan Warnick.
25. **Weber, D.J.** Studies of the structure and function of S100β (1996) Dept. of Biochemistry and Molecular Biology *University of Maryland School of Medicine*, April 29, 1996 (Seminar speaker), Host: Professor Martin Schneider.
26. Hall, G., Wilder, P.T., and **Weber, D.J.** Production of mutant S100β for fluorescence spectroscopy studies (1995) *University of Maryland School of Medicine*, Abst. #95.25, Student Res. Forum, (1995) UMAB, p. 22.
27. Amburgey, J.C., Drohat, A.C., Abildgaard, F., Starcih, M.R., Shah, S., Hilt, D.C., **Weber, D.J.** 1H, 13C and 15N Resonances assignments and secondary structure of S100β by NMR spectroscopy (1995) *First Symp. of the Joint Biochemistry Program: Molecular Recognition in Biochemistry*, *University of Maryland at Baltimore County*, p. 9.
28. Drohat, A.C., Amburgey, J.C., **Weber, D.J.** Effects of Ca(II) on Heteronuclear 1H-15N NMR correlations in reduced S100β (1995) *Seventeenth Annual Graduate Research Day*, *UMAB-UMBC*, p. 31.
29. Abeygunawardana, A., **Weber, D.J.**, Gittis, A.G., Frick, D.N., Miller, A.F., Bessman, M.J., and Mildvan, A.S. Heteronuclear NMR studies of the structure of the mutT enzyme and its interactions with substrate analogs (1995) *Keystone Symp*. *Frontiers of NMR in Molecular Biology-IV*, Keystone CO.
30. Abeygunawardana, A., **Weber, D.J.**, Gittis, A.G., Frick, D.N., Miller, A.F., Bessman, M.J., and Mildvan, A.S. Heteronuclear NMR studies of the structure of the mutT enzyme and its interactions with substrate analogs (1995) *14th Enzyme Mechanism Conference*, Scottsdale, AZ.
31. **Weber, D.J.**, Libson, A.M., Gittis, A.G., Lebowitz, M.S., and Mildvan, A.S. NMR docking of a substrate into the X-ray structure of the asp-21 to glu mutant of staphylococcal nuclease. *Gordon Conference* #94-S-KUA-4 entitled *Enzymes, Coenzymes, and Metabolic Pathways*, July 1994 (poster presentation).
32. **Weber, D.J.** Studies of the mutT enzyme by NMR. *The University of Maryland School of School of Pharmacy*, Department of Biomedicinal Chemistry, April 1993 (Invited speaker). Host: Dr. Ronald Guiles.
33. Abeygunawardana, C., **Weber, D.J.**, Frick, D.N., Bessman, M.J., and Mildvan, A.S. Complete sequence-specific NMR assignments of backbone 1H, 13C, and 15N resonances of the mutT enzyme. *Experimental NMR Conference*, March 1993 (poster presentation).
34. **Weber, D.J.**, Bhatnagar, S.K., Bullions, L.C., Bessman, M.J., and Mildvan, A.S., NMR and isotopic exchange studies of the site of bond cleavage in the mutT reaction. *Gordon Conference* #92-S-KUA-4 entitled *Enzymes, Coenzymes, and Metabolic Pathways*, June 1992 (poster presentation).
35. **Weber, D.J.** Gittis, A., Mullen, G.P., Abeygunawardana, C., Lattman, E.E., and Mildvan, A.S. Conformation and location of the enzyme-bound substrate dTdA on staphylococcal nuclease. *Experimental NMR Conference*, April 1992 (poster presentation).
36. **Weber, D.J.**, Gittis, A., Mullen, G.P., Abeygunawardana, C., Lattman, E.E., and Mildvan, A.S. Conformation and location of the enzyme-bound substrate dTdA on staphylococcal nuclease. *Gordon Conference* #91-S-KUA-4 entitled *Enzymes, Coenzymes, and Metabolic Pathways*, July 1991 (poster presentation).
37. **Weber, D.J.**, Kuliopulos, A., Mildvan, A.S. Diverse interactions between the acid and base catalysts on enzymes as detected by double mutations. *The 12th Enzyme Mechanism Conference*, January 1991 (poster presentation).
38. **Weber, D.J.**, Serpersu, E.H., Meeker, A.K., Shortle, D., and Mildvan, A.S. Studies of the double mutants D21E + R87G and E43S + R87G of staphylococcal nuclease. *Gordon Conference* #90-S-KUA-4 entitled *Enzymes, Coenzymes, and Metabolic Pathways*, July 1990 (poster presentation).
39. Serpersu, E.H., **Weber, D.J.**, Shortle, D., and Mildvan, A.S. The study of the double mutant (D21E + R87G) of staphylococcal nuclease and the structure determination of a competitive inhibitor in the ternary enzyme-metal-nucleotide complex. *ASBMB/ASCB Joint Meeting*, January 1989 (poster presentation of Serpersu, E.H., Shortle, D., and Mildvan, A.S., J. Cell Biol. 107, 830 (1988).
40. Pollock, J.S., Shepard, A.J., **Weber, D.J.**, Olson, D.O., Pedersen, L.G., and Hiskey, R.G. Calcium and phospholipid binding properties of bovine prothrombin gla domain peptides. Seventeenth *Steenbock Symposium*, June 1987 (poster presentation).