

Curriculum Vitae

Steven R. Goodman, Ph.D.

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Date of Birth: December 29, 1949

Place of Birth: New York, New York

Home Address: 147 Avriel Dr., Fayetteville, NY 13066

Marital Status: Married to Cindy Goodman

Children: Laela, Christie, Gena, Jessie, Laurie, and David

Professional Appointments and Training:

2008-present Professor, Department of Biochemistry and Molecular Biology
Professor, Department of Pediatrics
SUNY Upstate Medical University

2009-present Executive Director, International Institute for Biomedical Sciences & Technology
(IIBMST)

2008-2013 Vice President for Research and Dean, College of Graduate Studies
SUNY Upstate Medical University

2008-2013 Executive Director, SUNY REACH (Research Excellence in Academic Health).

2009-2012 Guest Professor at Huazhong University of Science & Technology, Wuhan, China

2001-2008 C. L. and Amelia A. Lundell Professor of Life Sciences, University of Texas at Dallas

2001-2008 Professor, Department of Molecular and Cell Biology, University of Texas at Dallas

2001-2008 Adjunct Professor, Department of Cell Biology, UT Southwestern Medical Center

2003-2006 Director, Institute of Biomedical Sciences and Technology, University of Texas at Dallas

2001-2004 Director, UTD Sickle Cell Disease Research Center

2001-2003 Head, Department of Molecular and Cell Biology, University of Texas at Dallas

1999-2001 Professor and Chairman, Department of Cell Biology and Neuroscience, University of South Alabama, College of Medicine

1993-2001 Director, USA Comprehensive Sickle Cell Center, University of South Alabama, College of Medicine

1988-1999 Professor and Chairman, Department of Structural and Cellular Biology, University of South Alabama, College of Medicine

1987-1988	Professor of Physiology, Head of Multidisciplinary Laboratories, The Milton S. Hershey Medical Center, The Pennsylvania State University
1985-1988	Director, Cell and Molecular Biology Center, The Milton S. Hershey Medical Center, The Pennsylvania State University
1985-1988	Director, Interdepartmental Graduate Program in Cell and Molecular Biology, The Milton S. Hershey Medical Center, The Pennsylvania State University
1983-1987	Associate Professor of Physiology, Head of Multidiscipline Laboratories, The Milton S. Hershey Medical Center, The Pennsylvania State University
1979-1983	Assistant Professor of Physiology, Head of Multidiscipline Laboratories, The Milton S. Hershey Medical Center, The Pennsylvania State University
1977-1979	Research Fellow in Cell Biology, The Biological Laboratories, Harvard University
1976-1977	Research Fellow in Molecular Biology, The Sidney Farber Cancer Center, Harvard Medical School
1971-1976	Ph.D. in Biochemistry – Saint Louis University Medical School
1967-1971	B.S. in Chemistry – State University of New York at Stony Brook

Awards, Honors and National Service:

2011-12	Recipient of Distinguished Scientist Award, Society for Experimental Biology and Medicine
2006	Organizer, 2006 AACBNC meeting in Aruba
2005	American Association of Anatomists, Public Affairs Committee
2003-2005	Elected President of the Association of Anatomy, Cell Biology, and Neurobiology Chairs (AACBNC)
2001-2008	Invited member, Congressional Liaison Committee
2001-2008	Invited member, Joint Steering Committee for Public Policy
2001-2005	Elected representative, National Biomedical Caucus by the AACBNC
2001-2005	Elected representative to CAS of the AAMC by the AACBNC
2001	Co-organizer of the W. Mejbbaum-Katzenellenbogen Molecular Biology Seminar in Wroclaw-Szklarska Poreba, Poland
2000-2002	Councilor, Association of Anatomy, Cell Biology and Neuroscience Chairpersons
1999	Keynote Speaker, French Society of Hematology Meeting, Paris, France Co-chair, W. Mejbbaum-Katzenellenbogen's Molecular Biology Seminar Series "5. Membrane Skeleton. Regulatory Function in Normal and Abnormal Cells" in Wroclaw-Szklarska Poreba, Poland
1997-2001	Advisory Member, State of Alabama Sickle Cell Oversight and Regulatory Committee
1996	Host and Chair, Steering Committee, 21 st Annual Meeting of the National Sickle Cell Centers Program

1995-1997	Chair, Working Group that prepared the Cell Biology/Histology Section of the United States/Canadian curriculum in the Anatomical Sciences
1995-1996	President of Sigma Xi
1995	Advisory Member and Invited Lecturer, International Meeting on Membrane Skeleton Structure and Function, June 19-21, 1995, Wroclaw-Karpacz, Poland
1986	Organizer and chairperson for a major symposium on "Brain Spectrin: Structure, Location and Function" held at the 1986 Society for Neurosciences meeting
1982-1987	Established Investigator, American Heart Association
Summer 1982	Invited scientist to the Soviet Union as part of the US-USSR Scientific Exchange Program, supported by NIH and the Soviet Ministry of Exchange
1977-1979	NIH postdoctoral research fellow
1967	New York Regents Scholarship

Editorial Boards:

2006-Present	Editor-in-Chief , Experimental Biology and Medicine
2006-Present	Cellular and Molecular Biology
1995-Present	Cellular & Molecular Biology Letters
1995-Present	Brain Research Bulletin
1988-1993	Molecular and Cellular Biochemistry
1983-1990	American Journal of Physiology: Cell Physiology

Reviewer:

Acta Haematologia
 American Journal of Physiology
 Biochemistry
 Biochemistry Biophysics Acta
 Blood
 Brain Research
 Brain Research Bulletin
 Cancer Research
 Cellular and Molecular Biology Letters
 Cell Motility and Cytoskeleton
 Cell Proliferation
 Current Proteomics
 Developmental Biology
 Developmental Dynamics
 Diabetes Reviews
 European Journal of Biochemistry
 European Journal of Hematology
 European Journal of Pharmacology
 Experimental and Clinical Immunogenetics
 FASEB Journal

Genesis
 Genomics
 Gerontology
 Gynecologic Oncology
 Histochemistry and Cytochemistry
 International Journal of Biochemistry & Cell Biology
 Journal of Alzheimer's Disease
 Journal of Biological Chemistry
 Journal of Cell Biology
 Journal of Cell Physiology
 Journal of Clinical Investigation
 Journal of Comparative Neurology
 Journal of Histochemistry and Cytochemistry
 Journal of Investigative Dermatology
 Journal of Molecular Biology
 Journal of Molecular and Cellular Cardiology
 Journal of Neurochemistry
 Journal of Neurology
 Journal of Neuroscience
 Journal of Ocular Pharmacology & Therapeutics
 Journal of Proteome Research
 Life Sciences
 Molecular and Cell Proteomics
 Nature
 Physiology and Behavior
 Proceedings National Academy of Science
 Protein Science
 Proteomics
 Proteomics: Clinical Applications
 Science
 The Lancet
 Trends in Neuroscience
 Visual Neuroscience

Memberships:

2009-Present	Association of Anatomy Cell Biology and Neurobiology Chairpersons, Emeritus
2006-Present	Society for Experimental Biology and Medicine (SEBM)
1994-Present	Sigma Xi
1984-Present	American Association for the Advancement of Science
1984-Present	New York Academy of Sciences
1983-Present	American Society of Hematology
1983-Present	The American Physiological Society
1982-Present	The American Society of Biological Chemists
1980-Present	Biophysical Society
1980-Present	Red Cell Club
1980-Present	The American Association of Anatomists
1980-Present	The American Society for Biochemistry and Molecular Biology
1980-Present	The American Society for Cell Biology

Consultantships:

January 28-30, 1981	Ad hoc member, NIH National Heart, Lung and Blood Institute program project site visit Team
June 10-12, 1981	Member, NIH National Institute of Arthritis, Metabolism and Digestive Diseases program project site visit team

October 26-28, 1981	Ad hoc member, NIH National Heart, Lung and Blood Institute program project site visit team
December 4, 1981	Ad hoc consultant, NIH Heart, Lung and Blood Research Review Committee B review of program project grant applications in the area of Experimental Hematology
1983-1984	Member, Pennsylvania State University Project Grants Review Committee
1983-1987	Study Section member, American Heart Association Pennsylvania Affiliate Basic Science Subcommittee (Research Committee)
February 15-17, 1984	National Heart, Lung and Blood Institute, member, site visit team
May 14-16, 1984	National Heart, Lung and Blood Institute, member, site visit team
1985-1988	Member, Pennsylvania State University American Cancer Society Review Committee
1987-1988	Chairman, American Heart Association, Pennsylvania Affiliate Research Peer Review Committee
June 27, 1989	Member, NIH Hematology I site visit team which visited the University of California, San Francisco
1991-1993	Study Section member, American Heart Association Alabama Affiliate Basic Science Subcommittee (Research Committee)
July 18-20, 1993	Member, NIDDK Review Committee, Core Centers for Gene Therapy of CF and Other Genetic Diseases, Washington, DC
October 18, 1994	Ad hoc Member, NIH, National Institute of Neurological Disorders and Stroke, Neurological Disorders Program Project Review B Committee
May 15, 1995	Advisor, NIH Committee on the Future of the Sickle Cell Centers Program, Bethesda, Maryland
November 6-7, 1995	Member, NIH Special Study Section-2, Reviewer of STTR and SBIR applications
March 18-20, 1996	Member, External Review Committee for the Anatomy and Cell Biology Department at LSU, Shreveport
January 11-13, 1997	Member, Arizona Disease Control Research Commission, National Peer Review Panel
1997-2001	Member, Bay Health Plan Special Needs Ad Hoc Committee
January, 2000	Member, Arizona Disease Control Research Commission, National Peer Review Panel
September 11, 2001	Member, NINDS, Council ZNS1 SRB-KO3, RFA, Parkinson's Disease
November 1, 2001	Reviewer, Philip Morris External Research Grants
August 20, 2002	Member, NHLBI Special Emphasis Panel
May 21, 2004	Member, ZHL 1 CSR-G 01 Scientific Review Group, Review of Institutional National Research Service Awards (T32s)
August 12, 2005	Chairperson, NIH/National Human Genome Research Institute Special Emphasis Panel, Screening Assay Development for Sickle Cell Disease
2006-2009	Member, Review Panel for Israel Cancer Research Fund (ICRF)

January 8, 2007	Member, NIH NHLBI Special Emphasis Panel reviewing a Program Project Grant, Albert Einstein College of Medicine
April 16, 2007	Member, National AHA Basic Research Study Section Meeting, DFW Hiatt
October 15, 2007	Member, National AHA Basic Research Study Section Meeting, DFW Hiatt
October 20-21, 2008	Member, NIH Scientific Review Group ZRG1 HEME-C 02M- Thrombosis and Erythrocyte Biology
November 23-24, 2008	Member, International Business and Scientific Advisory Board of the Britton Chance Center for Biomedical Photonics
June 5, 2009	Reviewer, RFA-09-003 NIH Challenge Grants in Health and Science Research
2009- present	Member, International Business & Scientific Advisory Board, Wuhan, China
March 13, 2011	Reviewer, ZonMw Health Care Research, the Netherlands
2011, 2012	Mentor; PRIDE ("Programs to Increasing Diversity Among Individuals Engaged in Health-Related Research")
November 9, 2012	Reviewer, The Netherlands Science Center Converging Sciences Call Grant Application

Invited Speaker:

External Seminars

June 11-15, 1979	Invited Participant, Gordon Conference on Red Cells, Plymouth, NH
November 9-11, 1979	Invited Participant, Red Cell Symposium, Yale Medical School, New Haven, CT
February 18, 1981	Invited Speaker, "The Cytoskeleton of Abnormal Red Blood Cells," ICN-UCLA Symposia on Molecular and Cellular Biology, Keystone, CO
June 8-10, 1981	Invited Speaker, Vth US:USSR Symposium in Problem Area III, "Cellular Biology of the Heart," Hershey, PA
July 1-August 15, 1981	Invited to give a series of seminars and in 1982, carry out experiments in the Soviet Union as part of the US-USSR scientific exchange program supported by the NIH and the Soviet Ministry of Science. Experimental work was carried out in the Laboratory of Molecular and Cellular Cardiology, The All-Union Cardiology Research Center, Moscow, Academy of Medical Sciences of the USSR
July 12, 1982	"Cytoskeleton Membrane Interactions" Seminar at the All-Union Cardiology Research Center, Moscow, USSR
July 27, 1982	"The membrane skeleton of normal and abnormal human erythrocytes" Seminar, Institute of Protein Research, Poustchino, Moscow Region
July 28, 1982	"Spectrin-like protein in Non-erythroid Cells" Seminar to members of the Cancer Research Center and Laboratory of Molecular Biology and Bio-organic Chemistry, Moscow State University, USSR
August 3, 1982	"The Molecular Basis of Hereditary Spherocytosis" Seminar, Institute of Cytology, Leningrad State University, Leningrad, USSR
February 10, 1983	Invited Speaker, Jefferson Medical College, Cardeza Foundation for Hematologic Research, Philadelphia, PA, "Molecular Basis of Hereditary Spherocytosis"

April 10-12, 1983	Invited Speaker, Actin-Membrane Interaction Conference, "The Discovery of Spectrin-like Molecules in Nonerythroid Cells, and Recent Advances in Understanding the Structure, Localization, and Function of These Molecules," University of North Carolina, Chapel Hill, NC
June 1, 1983	Invited Speaker, American Red Cross Research Labs, Bethesda, MD, "The Spectrin Membrane Skeleton of Normal and Abnormal Human Erythrocyte"
August 15-19, 1983	Invited Speaker, Gordon Research Conference Red Cell program, "The Association Between Human Erythrocyte Protein 4.1 and the Erythrocyte Membrane," University of Rhode Island, Kingston, RI
October 2-5, 1983	Invited Speaker, Sixth International Conference on Red Cell Metabolism and Function, "The Red Cell Membrane Skeleton: A Mini Review," University of Michigan Medical School, Ann Arbor, MI
September 4, 1984	Invited Speaker, University of South Carolina, "Structure & Function of the Spectrin Membrane Skeleton"
November 12, 1986	Organizer, Chairperson and Speaker at a Symposium on "Brain Spectrin: Structure, Location and Function," 1986 Society of Neuroscience Meeting, Washington DC
December 16, 1986	Invited Speaker, University of Missouri, "Spectrin: The Journey from Red Cell to Synapse"
March 14, 1988	Invited Speaker, University of South Alabama, "Spectrin: From Red Cell to Synapse"
April 25, 1988	Invited Speaker, University of Colorado, "Spectrin: From Red Cell to Synapse"
March 9, 1990	Invited Speaker, University of Alabama at Birmingham, "Brain Spectrin Isoform Structure and Function"
April 17-23, 1990	Chaired a session entitled "Cytoskeleton, Axons, and Growth Cones" at the ICN-UCLA Colloquium on Cell and Molecular Aspects Of The Developing Nervous System (South Padre Island, TX) Seminar, "Development of the Neural Spectrin Membrane Skeleton"
May 10-15, 1990	Invited Speaker, 10 th School on Biophysics of Membrane Transport in Szczyrk, Poland, "The Interaction of Spectrin with Synaptic Vesicles"
May 19, 1990	Invited Speaker, USA Medical Alumni Association Annual Meeting, Perdido, AL, "What is Spectrin and Why Do We Care?"
September 3, 1990	Invited Speaker, First World Congress of Biomechanics, University of California, San Diego, CA, "Brain Spectrin: Structure and Function"
May 6, 1992	Invited Speaker, Chicago Medical School, "Unraveling the Spectrin Supergene Family"
April 22, 1993	Invited Speaker, University of Arizona, College of Medicine, "The Molecular Basis of the Irreversibly Sickled Cell"
March 24, 1994	Chair, Session on "Transgenic Mice/Genetics," National Sickle Cell Centers Meeting, NYC
April 4, 1994	Invited Speaker, Auburn University, Department of Biology, "The Molecular Basis of the Irreversibly Sickled Cell"
October 20, 1994	Invited Speaker, Shorter College, Department of Biological Sciences, "Reversing Irreversibly Sickled Cell"
June 19, 1995	Invited Speaker, W. Mejbaum-Katzenellenbogen's Seminars, Warclaw, Poland, "Membrane Skeleton Defects Leading to the Irreversibly Sickled Cell"

March 6, 1996	Invited Plenary Speaker, 21 st Annual Meeting of the National Sickle Cell Program, Mobile, AL, "The Role of the Membrane Skeleton in Formation of the Irreversibly Sickled Cell"
August 27, 1996	Chair, Session entitled "Signal Transduction & Transcriptional Regulation III," 25 th Meeting of the International Society for Experimental Hematology, New York, NY
August 27, 1996	"The Making and Breaking of the Irreversibly Sickled Cell," 25th Meeting of the International Society for Experimental Hematology, New York, NY, Abstract #713
October 4, 1996	Invited Speaker, 24th Annual Sickle Cell Association of America Convention, "How Red Blood Cells Become Sickle Cells," Little Rock, AR
October 9, 1996	Invited Speaker, Alabama Primary Health Care Association Meeting, "Advances in Research and Treatment of Sickle Cell Disease," Perdido Beach Resort, Orange Beach, AL
February 20, 1997	Invited Speaker, UAB Department of Cell Biology, "The Making and Breaking of the Irreversibly Sickled Cell"
January 27, 1998	Invited Speaker, Bishop State Community College, "Will NAC be an Effective Treatment for Sickle Cell Disease," Mobile, AL
June 11, 1998	Invited Speaker, 5. Membrane Skeleton. Regulatory Function in Normal and Abnormal Cells Conference – W. Meijbaum-Katzenellenbogen's Molecular Biology Seminar Series. "The Spectrin Membrane Skeleton: A Key Element in Sickle Cell Disease," Wroclaw-Szklarska Poreba, Poland
March 15, 1999	Keynote Speaker, French Society of Hematology Meeting, "New therapeutic approaches to sickle cell disease: targeting red blood cell membrane oxidative damage," Paris, France
February 18, 2000	Invited Speaker, UAB Department of Biochemistry and Molecular Genetics, "A Role for Spectrin in Synapse Transmission"
February 29, 2000	Invited Speaker, Bishop State Community College, "Finding a Cure for Sickle Cell Disease"
October 4, 2000	Invited Speaker, State University of New York, Upstate Medical University, College of Medicine. Cell and Developmental Biology Seminar Presentation: "Oxidative Stress and Sickle Cell Disease"
October 19, 2000	Invited Speaker, University of Medicine and Dentistry of New Jersey, New Jersey Medical School, Department of Pathology and Laboratory Medicine, "Erythrocyte Spectrin Is An E2 Ubiquitin Conjugating Enzyme"
November 13, 2000	Invited Speaker, University of Medicine and Dentistry of New Jersey, School of Osteopathic Medicine, "Oxidative Stress and Sickle Cell Disease"
March 15, 2001	Invited Speaker, University of Texas at Dallas, Department of Cell and Molecular Biology, "Oxidative Stress and Sickle Cell Disease"
April 23, 2001	Invited Speaker, U.T. Southwestern Medical School, "Oxidative Stress and Sickle Cell Disease"
May 14, 2001	Invited Speaker, University of Tennessee at Memphis, Department of Cell and Molecular Biology, "Oxidative Stress and Sickle Cell Disease"
May 23, 2002	Invited Speaker, Ohio State Medical School, Department of Molecular and Cellular Biochemistry, "The Cell Biology of Sickle Cell Disease"
October 4, 2002	Invited Speaker, NYS Institute for Basic Research in Developmental Disabilities,

"Spectrin Ubiquitination: Role in Sickle Cell and Neurologic Diseases"

- November 6, 2002 Invited Speaker, University of Texas Medical School at Galveston, "The Cell Biology of Sickle Cell Disease"
- February 8, 2003 Organizer, Thermo Finnigan Symposium on "The Cytoskeleton and Human Disease" AACBNC meeting in Panama, "The Sickle Cell Membrane Skeleton"
- May 27, 2003 "Sickle Cell Disease," 4th to 8th grade classes, West Dallas Community School
- January 17, 2004 Organizer, Thermo Electron/Amersham Biosciences Symposium on "New Age Proteomics" AACBNC Meeting, Key West, FL
- June 6, 2004 Invited Speaker, Emerging Pathways in Cytoskeletal Communication meeting, Umea, Sweden, "The Human Erythrocyte Proteome"
- July 15, 2004 "The Molecular Basis of Sickle Cell Severity," University of Texas Medical Branch at Galveston
- October 25-26, 2004 Invited Speaker, Center of Biotechnology at the Tecnologico de Monterrey, Mexico, "The Molecular Basis of Sickle Cell Severity"
- March 7-9, 2005 "The Molecular and Cellular Determinants of Sickle Cell Severity," Texas A&M University in College Station, TX
- March 25, 2005 Guest Lecturer, Texas A&M Health Sciences Center Baylor School of Dentistry, "The Molecular and Cellular Determinants of Sickle Cell Severity"
- April 4, 2005 Co-organizer, Symposium on Physiologic Proteomics, Experimental Biology Meetings in San Diego, Presentation on "Proteomics of Sickle Cell Disease"
- June 12, 2005 Invited Speaker, Red Cell Gordon Conference, Tilton, NH, "The Proteomics of Sickle Cell Disease"
- March 13, 2006 Guest Seminar, U. Louisiana at Monroe, "The Proteomics of Sickle Cell Severity"
- March 14, 2006 Guest Seminar, Louisiana Tech University, "The Proteomics of Sickle Cell Severity"
- March 23, 2006 Guest Seminar, U.C. Davis Health Science Center, "Understanding Sickle Cell Severity: A Proteomic Approach"
- April 20, 2006 Guest Seminar, UNT Health Science Center, "Sickle Cell Severity: A Proteomics Approach"
- April 30, 2006 Organizer and Chair, "New Functions of the Spectrin Membrane Skeleton" Symposium, 2006 Experimental Biology Meeting, San Diego, CA
- May 10, 2006 "IBMST" University of Oklahoma at Norman and Oklahoma State University
- September 27, 2006 Invited Speaker "Sickle Cell 101," Annual Meeting of the SCDAA in Dallas, TX
- December 6, 2006 Led a Dallas delegation to the Technion in Haifa, Israel. Invited lecture, Bruce and Ruth Rappaport School of Medicine, "Biochemical and Proteomic Approaches to Development of an Understanding of Sickle Cell Severity"
- January 9-11, 2007 Hosted a delegation from the Technion including President Yitzhak Apeloig, Nobel Laureate Aaron Ciechanover and Director of the Nanotech Institute Uri Sivan. On January 11, 2007, ran the UTD/Technion Symposium on Nanotechnology and the Life Sciences
- February 15, 2007 Guest Seminar, University of Puerto Rico School of Medicine entitled "A Molecular

Understanding of Sickle Cell Severity”

- March 17, 2007 Invited Speaker, AAMC CAS Annual meeting, “What value is there in medical students understanding proteomics?”
- April 13, 2007 Invited Speaker, Britton Chance Center for Biomedical Photonics of the Wuhan National Laboratory for Optoelectronics, Wuhan, China, “Publication Trends in 21st Century Biotechnology”
- April 17, 2007 Invited Speaker, Oklahoma State University, “The future of a Biochemistry and Molecular Biology Department in the Land Grant System”
- January 7, 2008 Participated in the Inauguration Ceremony for the Asian Office for the Society of Experimental Biology and Medicine (SEBM) and its journal Experimental Biology and Medicine at the National Cheng Kung University in Tainan, Taiwan, Invited lecture on “The Proteomics of Sickle Cell Disease”
- January 28, 2008 Invited Speaker, Texas State University, “Understanding Sickle Cell Severity”
- April 6, 2008 Invited Speaker, EB SEBM Symposium, “Pharmaco-proteomic Approaches towards Understanding The Mechanisms And Side Effects Of Sickle Cell Drug Therapy”
- April 28, 2008 Invited Speaker, SUNY Upstate Medical University, “Sickle Cell Disease: Beyond Hemoglobin S”
- July 2, 2008 Inaugurated the EBM European Office at King’s College London, “Sickle Cell Disease: Beyond Hemoglobin S”
- November 24, 2008 Invited Speaker, “Signatures of Sickle Cell Severity: A Proteomic Approach” 7th International Conference on Photonics and Imaging in Biology and Medicine, Wuhan, P.R. China
- March 26, 2009 Invited Speaker, Veterans Administration Medical Center, Syracuse, NY, “Proteomic Approaches to Personalized Medicine for Sickle Cell Disease”
- June 4, 2009 Invited Speaker, Association of Academic Health Centers, Executive Leadership Group for Vice Presidents for Research, “The Economic Impact of Research at Academic Health Centers,” Doubletree Hotel, Washington DC
- August 28, 2009 Invited Speaker, 2nd Annual Syracuse Biomaterials Institute (SBI) Offsite Meeting, “The Goal of Personalized Medicine for Sickle Cell Disease: Basic and Translational Research Approaches,” Renaissance Hotel, Syracuse, NY
- October 2, 2009 Visiting Scholar, Robert Wesleyan College, Rochester, NY, “Understanding Sickle Cell Severity”
- February 16, 2010 Invited Speaker, Syracuse University Student Forum, Life Sciences Building, Syracuse, NY, “Sickle Cell Disease”
- November 11, 2010 Invited Speaker, Welch Allyn, Skaneateles, NY, “Upstate’s Research Expansion”
- February 19, 2011 Keynote Speaker, Syracuse University, Syracuse, NY, “Sickle Cell Disease”
- March 9, 2011 Invited Speaker, Leadership Greater Syracuse, “The Health Legacy That We Leave Our Children Will Be Determined By Our Support of Research Today”
- December 5, 2011 Invited Speaker Lehman-CUNY, New York, “The Goal of Personalized Medicine for Sickle Cell Disease”.
- February 21, 2012 Invited Speaker, University of Buffalo, Buffalo, NY, “A Proteomic Approach to Personalized

Medicine for Sickle Cell Disease”

- October 11, 2012 Invited Panelist, “Innovative Aging Symposium on Industry,” Menorah Park, Syracuse, NY
- November 11, 2012 Keynote Speaker, International Symposium on Infectious Diseases and Signal Transduction, National Cheng Kung University, Tainan, Taiwan, “The Proteomics and Interactomics of Sickle Cell Disease”.
- November 12, 2012 Invited Speaker, Taipei Medical University, Taipei, Taiwan, “The Proteomics and Interactomics of Sickle Cell Disease”
- January 11, 2013 Invited Speaker, Clarkson University, Potsdam, NY, “The Proteomics and Interactomics of Sickle Cell Disease”
- February 12, 2013 Invited Panelist, Lupus and Sickle Cell Panel, Syracuse University
- March 13, 2013 Invited Speaker, TACNY Sweet Lecture Lecture Series, SUNY ESF, Syracuse, “Building Successful Research Partnerships: The Story of the Hill, SUNY Reach, and IIBMST Collaborations”

Internal Seminars

M.S. Hershey Medical Center

- November 26, 1979 “Investigation of a possible cytoskeleton membrane protein abnormality in hereditary spherocytosis” (joint conference with Harrisburg Hospital Hematology Section)
- May 5, 1980 “Spectrin-membrane interactions,” M.S. Hershey Medical Center, Physiology Department
- July 14, 1980 “Hemolytic Anemias: research advances,” Department of Medicine Grand Rounds
- November 17, 1980 “Occurrence of Spectrin in Nonerythroid Cells,” Physiology Department
- April 1, 1981 “Spectrin and the abnormality in hereditary spherocytosis,” Hematology Department
- April 26, 1982 “Identification of the Molecular Defect in the Erythrocyte Membrane Skeleton in Hereditary Spherocytosis,” Physiology Department
- February 13, 1983 “Brain Spectrin: Structure, Localization, and Function,” Physiology Department
- November 21, 1983 “Congenital Non-Spherocytic Hemolytic Anemia Due to a Previously Unrecognized Defect of the Red Cell Cytoskeleton,” Hematology Department
- January 14, 1985 “The Human Erythrocyte Spectrin Membrane Skeleton,” Cell & Molecular Biology Center
- January 18, 1985 “The Molecular Basis of Hereditary Spherocytosis,” Pharmacology Department
- April 3, 1985 “Brain Spectrin: Structure, Function and Localization,” Cell & Molecular Biology Center
- June 4, 1985 “Brain Protein 4.1: Identification, Structure Function, and Location of a Spectrin Binding Protein,” Neuroscience Center
- June 10, 1985 “Expression of Spectrin and Related Protein in Developing Mammalian Brain,” Biological Chemistry Department
- February 10, 1986 “Hereditary Elliptocytosis,” Hematology Department
- March 3, 1986 “Brain Spectrin: New Insights,” Physiology Department
- October 29, 1986 “Spectrin: The Journey From Red Cell to Synapse,” Cell & Molecular Biology Center

USA College of Medicine

June 10, 1989	"Molecular Basis of Synaptic Transmission," Neuroscience Group
February 22, 1990	"The identification and Sequence of the Actin-Binding Domain of Human RBC β Spectrin," Physiology Department
May 29, 1990	"The Molecular Basis of the Spectrin-Actin Interaction," Structural & Cellular Biology Department
May 4, 1993	"The Molecular Basis of the Irreversibly Sickle Cell," Structural & Cellular Biology Department
November 1, 1994	"Reversing the Irreversibly Sickled Cell," Structural & Cellular Biology Department
November 2, 1995	Sickle Cell Educator Certification Program, "Research Update," Structural & Cellular Biology Department
January 2, 1996	Sickle Cell Basic Science Research Meeting, "The Molecular Defect(s) within the Spectrin Membrane Skeleton of Irreversibly Sickled Cells," Structural & Cellular Biology Department
January 10, 1996	Hematology/Oncology Lecture, "Structure and Function of Red Cell Membranes," Structural & Cellular Biology Department
April 10, 1996	Sickle Cell Educator Certification Program, "Research Update," Structural & Cellular Biology Department
May 7, 1996	Sickle Cell Basic Science Research Meeting, "The Molecular Defect(s) within the Spectrin Membrane Skeleton of Irreversibly Sickled Cells," Structural & Cellular Biology Department
June 6, 1996	Sickle Cell Clinical/Psychosocial Meeting, "N-acetyl Cysteine: A Potential Therapy in Vaso-occlusive Crisis," Structural & Cellular Biology Department
March 18, 1997	"The Making and Breaking of the Irreversibly Sickled Cell," Structural & Cellular Biology Department
January 8, 1998	"Will NAC be an Effective Treatment for Sickle Cell Disease?" Medicine Department
January 20, 1998	Sickle Cell Basic Science Research Meeting, "The Molecular Defect(s) within the Spectrin Membrane Skeleton of Irreversibly Sickled Cells," Structural & Cellular Biology Department
March 20, 1998	"The Membrane Skeleton of Normal and Abnormal Erythrocytes," Surgery Department
April 29, 1999	"Spectrin: An Essential Role in Synaptic Transmission," Physiology Department
October 12, 1999	"Spectrin and Synaptic Transmission," Structural & Cellular Biology Department

University of South Alabama Sigma Xi Distinguished Lecture

May 10, 1995	"Reversing the Irreversibly Sickled Cell"
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UT Dallas

January 10, 2002	Opening Ceremonies of the UT Dallas Sickle Cell Disease Research Center – "Molecular Basis of the Irreversibly Sickled Cell"
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November 2, 2002 UTD Alumni Day Presentation – “Sickle Cell Disease Research”
 April 4, 2003 2003 Library Lecture Series – “The Sickle Cell Membrane Skeleton”
 March 19, 2005 UTD Scholar’s Weekend Presentation – “Sickle Cell Disease: The Basis for Its Severity”

UT Southwestern Medical Center

March 16, 2004 Presented “The Molecular Basis of the Irreversibly Sickled Cell” at Pediatric Grand Rounds
 April 26, 2007 “The Molecular Basis of the ISC and SC Severity”

SUNY Upstate Medical University

September 4, 2008 “A Proteomic View of Vasoocclusive Episodes in Sickle Cell Disease,” 8th Annual Biomedical Sciences Retreat
 November 5, 2008 “How to Prepare for Graduate School,” College of Health Professions
 April 10, 2009 “Proteomics,” College of Health Professions, Masters Med Tech and Senior Biotechnology Students
 July 22, 2009 “The Goal of Personalized Medicine for Sickle Cell Disease: Basic and Translational Research Approaches,” Biochemistry & Molecular Biology
 October 7, 2009 “Tutorial: Publishing Your Manuscript,” College of Graduate Studies, Postdocs & MD/PhD Students
 November 19, 2009 “Sickle Cell Disease: The Goal of Personalized Medicine,” Regional Oncology Center
 April 9, 2010 “Mass Spectrometry and Proteomics,” College of Health Professions, Masters Med Tech and Senior Biotechnology Students
 October 27, 2010 “Proteasomes in Mature RBCs? Yes Indeed,” Biochemistry & Molecular Biology
 April 8, 2011 “Proteomics and Mass Spectrometry,” College of Health Professions, Med T522, Advanced Microbiology & Immunology
 April 13, 2012 “Proteomics and Mass Spectrometry,” College of Health Professions, MedT522, Advanced Microbiology & Immunology
 May 21, 2012 “The CNY BRC – CNY New Bio-incubator and Business Accelerator,” 2012 CNY Biotechnology Symposium, Oncenter Complex, Syracuse, NY
 October 3, 2012 “Building Successful Research Partnerships: The Story of the Hill, SUNY Reach and IBMST Collaborations”, Deans’ Grand Rounds
 October 18, 2012 “Sickle Cell Presentation” College of Medicine 1st year medical students

Advising Responsibilities:

Medical Students’ (*Hershey*) Research Projects

1. Jeffrey L. Ettinger (1981)
2. Eilyn McIntosh (1984)
3. Theresa Laskiewicz (1984) First Place – Student Research Symposium
4. Jason Greenberg (1984-1984) NIHRSA
5. Bernadine Moglia (1984-1985) NIHRSA

Medical Students' (USA) Research Projects

1. Chris Heuerman, Summer Research Project (1992)
2. Bart Scott, MD/Ph.D. Candidate (1992)
3. Dwight Yoder, Summer Research Project (1993)
4. Sherry Morgan, Summer Research Project (1993)
5. Ken Shermer, Summer Research Project (1993)
6. Willard Korn, Summer Research Project (1994 and 1995)
7. Jonah McIntyre, Summer Research Project (1996 and 1997)
8. Aprile Brown, Summer Research Project (1998)

Graduate Students' (Hershey) Trained

1. Dr. Joseph Kesselring
Physician
168 Madison Court
Holland, PA 18966
Human erythrocyte cytoskeletal protein band 4.1- its isolation, purification, and function (1981)
2. Dr. Kathleen Shiffer
Research Scientist
San Francisco, CA
The characterization of protein 4-1's interaction with human erythrocyte membrane (1984)
3. Dr. Anne Karinch
Research Faculty
M.S. Hershey Medical Center
Hershey, PA 17033
The identification and partial purification of the actin-binding domain of human erythrocyte spectrin (1989)

Graduate Students (USA) Trained

1. Yupo Ma
Professor
Department of Pathology
SUNY Stony Brook College of Medicine
Cloning and sequencing of the β subunit of brain
Postdoctoral Fellow spectrin (240/235E) (1993)

Graduate Students (UT Dallas) Trained

1. Mahnoush Riahi
Ubiquitination and Spectrin dimer nucleation
MS degree May 2004
2. Swati Ghatpande
Ubiquitination and Spectrin-4.1- actin ternary complex Formation
Postdoctoral Fellow at UT Southwestern Medical Center
MS degree December 2003
PhD
3. Rashmi Mishra
Ubiquitination and the Spectrin-Adducin-Actin
Completed MS degree May 2004
4. Jessica Yu-Jung Hsu
Site directed mutagenesis of α Spl, E2, E3 and target sites
PhD December 2004
Postdoctoral Fellow at Harvard Medical School
Sponsor Dr. Stu Orkin
5. Tsui-Ling Chang
Identification of targets for spectrin's E2 activity

PhD December 2004
Postdoctoral Fellow at UT Southwestern Medical Center

6. Jose Chou
cICAT/nLC/MS/MS of severe versus mild SS membrane skeletons
MS Degree 2006
7. Jennie HaLuong
Proteomics of Sickle Cell Severity (2005)
8. Karis Hughes
Preparation of reticulocyte free RBCs for Proteomics
MS Degree 2006
9. Yung-Chia (Gena) Hao
Proteomics of Sickle Cell Severity
Protein profiling of RBC cytosol by 2D DIGE technique (2004-2006)
10. Deepa Shenoy
Protein profiling of plasma by the 2D DIGE technique (2004)
11. Diane Varghese
Proteomics of Sickle Cell Severity
Protein Profiling of RBC Cytosol by ICAT Technology
MS Degree 2006
12. Satish Nandakumar
Proteomics of Sickle Cell Disease
Protein Profiling of Plasma by 2D DIGE (2005-2006)
13. Anas Ismail
Alpha Spectrin Chimeric E2/E3 Ubiquitin Ligase Activity (2004-2006)
14. Nathan Mackenroth
Proteomics of Sickle Cell Severity
Protein Profiling of plasma by ICAT Technology (2005-2006)
15. Sarmistha Sen
Proteomics of Sickle Cell Severity
Protein Profiling of RBC Membrane Protein by ICAT Technology (2004-2008)
16. Kamala Vanarsa
Protein Profiling of RBC membranes by iTRAQ technology
MS Degree 2008
17. Taruna Sharma
Protein Profiling of reticulocyte membranes by 2D DIGE technology (2006-2008)

Graduate Students (*SUNY Upstate Medical University*) Trained

1. Sudha Neelam, PhD
Function of RBC Proteasomes (2004-2011)
Post doctoral Fellow in the Laboratory of Dr. Bill Kerr, Upstate Medical University
2. Onecia Hannibal, MA
Post-Translational Modification of Alpha Spectrin Cysteines in Control and Sickle Cell Erythrocytes (2012-2013)
Medical Student, SUNY Upstate Medical University

Postdoctoral Fellows (*Hershey*) Trained

1. Dr. Reidar Wallin
Associate Professor
Department of Medicine
Bowman Grey School of Medicine
Wake Forest University
Winston-Salem, North Carolina 27103
Structure of RBC Ankyrin (1983-1984)
2. Dr. Ram Sihag
Assistant Professor
Molecular Neuroscience Laboratory
McLean Hospital
Harvard Medical School
Belmont, MA 02178
Isolation and Characterization Protein 4.1 (1984-1985)
3. Dr. Keith Krebs
Staff Scientist
Biophysical Laboratory
NIH, Bethesda, MD
Studies on Amelin, Synapsin I and RBC Protein 4.1 (1984-1988)
4. Dr. Beat Riederer
Professor
Universite de Lausanne
1005 Lausanne Switzerland
Studies on Brain Spectrin Isoforms (1984-1988)

Postdoctoral Fellows (*USA*) Trained

1. Dr. Aleksander Sikorski
Professor (1988-1990)
University of Wroclaw (1997-1998)
Institute of Biochemistry
Ul. Tamka 2
50-137 Wroclaw, Poland
Interaction of Brain Spectrin with Synaptic Vesicles
2. Dr. Warren Zimmer
Professor
Department of Physiology
Texas A&M University
Cloning and Sequencing of Brain Amelin (1989-1990)
3. Dr. Grzegorz Terlecki
Professor
University of Wroclaw
Medical School of Wroclaw
Department of Biochemistry
Chalubinskiego 10
50-368 Wroclaw, Poland
Interaction of Spectrin with Insulin-Containing-Granules (1990-1992)
4. Dr. Archil Shartava
Research Assistant Professor
The Sickle Cell Membrane Skeleton (1991-2000)
5. Dr. Mary Blair Clark
Research Assistant Professor

Role of Spectrin-bound Heme in Neuronal Function (1992-1996)

6. Dr. Zari Aliabadi
Research Assistant Professor
The Molecular Basis of Sickle Cell Anemia (1992-1996)
7. Dr. Jose Sangerman
Assistant Professor
Yale University
The Synthesis, Assembly, and Turnover of Spectrin Subunits in Hippocampal Neurons (1997-2001)
8. Dr. Susan Xu
Associate Professor
Localization of the Synaptic Vesicle Binding Domain with Brain Spectrin (1997-1998)
9. Dr. David Kakhniashvili
Research Associate
Ubiquitination of α Spectrin (1998-2001)

Postdoctoral Fellows (*UT Dallas*) Trained

1. Dr. David Kakhniashvili
Laboratory Manager
Proteomics of Spectrin Ubiquitination (2001-2008)
2. Dr. Jose Sangerman
Proteomics of Globin Transcription Factors (2004-2005)
3. Dr. Anita Hryniewicz-Jankowska
Professor
University of Wroclaw
Protein Profiling on Monocyte Protein from Patients of Varying Sickle Cell Severity Studied by 2D DIGE and MS/MS

Thesis Committees (*SUNY Upstate*)

Tatyana Fedetova (major Professor Richard Wojcikiewicz, PhD) 2010-2013

Course Taught (*Hershey*)

Human Physiology, 705

- Blood Composition
- Blood Clotting

Neurophysiology, 797

- Cell Membrane
- Membrane Transport
- Muscle Biochemistry
- Muscle Mechanics

Physiology Laboratory, 523

- Lipolysis Laboratory

Advanced Topics, 597

- Membrane Structure and Function

Graduate Cell Biology, 540

Course Director

- Membrane Structure

- Membrane Asymmetry
- Membrane Dynamics
- Membrane Transport
- Spectrin Membrane Skeleton
- Microfilaments
- Intermediate Filaments
- Microtubule

Courses Taught (USA)

Medical Histology, GMS510

Course Director 1999-2001

- Cell Structure and Function
- Muscle I
- Muscle II
- Membranes I
- Membranes II
- Cytoskeleton I
- Cytoskeleton II
- rER
- Golgi & Lysosomes
- Mitochondria & Peroxisomes

Cell Biology, GMS509

Course Director 1989-2001

- How Cells are Studied I
- How Cells are Studied II
- The Birth, Assembly, and Death of Proteins
- Membrane Structure
- The Spectrin Membrane, Skeleton-Erythroid
- The Spectrin Membrane, Skeleton-Nonerythroid
- Actin Microfilaments-Muscle
- Actin Microfilaments-Nonmuscle
- Microtubules I
- Microtubules II
- Intermediate Filaments

Cytoskeleton & Membranes, GMS612

Course Director

- Erythrocyte Spectrin Membrane Skeleton
- RBC Spectrin: Structure
- RBC Spectrin: Interactions
- RBC Protein 4.1: Structure
- RBC Protein 4.1: Interactions
- RBC Adducin and Calmodulin
- RBC Actin, Tropomyosin, Myosin, Protein 4.9
- RBC Ankyrin: Structure
- RBC Ankyrin: Interactions
- RBC Band 3: Ankyrin Attachment
- Glycophorins: Which is the 4.1 attachment site?
- Synthesis, Assembly and Turnover of the Spectrin Membrane Skeleton
- Discovery of Nonerythroid Spectrin
- Brain Spectrin Structure
- Brain Spectrin Isoforms
- Brain Spectrin: Interactions: Calmodulin, Actin, Ankyrin, Adducin
- Amelin (Brain Protein 4.1) and Synapsin
- Suggested Functions of Brain Spectrin

BEAR Program
Molecular & Cellular Biology

Course Director

- Membrane Structure
- Membrane Transport
- Microfilaments
- The Spectrin Membrane Skeleton
- Intermediate Filaments
- ER-Roles in Protein & Lipid Synthesis
- Golgi-Posttranslational Modification & Sorting of Protein and Lipid
- Exocytosis & Endocytosis
- Mitochondria & Peroxisome Morphogenesis & Function

Courses Taught (UT Dallas)

Biochemistry I, BIO 3361

Course Director 2002

- Introduction, Weak Interactions
- Water: Acid/Base Properties
- Amino Acids
- Protein Primary Structure
- Protein Secondary Structure
- Protein Tertiary & Quaternary Structure
- Enzyme Purification
- Enzyme Kinetics
- Inhibition Kinetics
- Enzyme Regulation
- Hemoglobin & Sickle Cell Disease
- Mechanisms of Enzyme Actions
- Coenzymes

Graduate Cell Biology, BIO 5440

- Spectrin Membrane Skeleton
- Actin/Myosin in Muscle
- Nonmuscle Actin
- Intermediate Filaments
- Microtubules
- Membrane Structure
- Membrane Transport
- Membrane Biogenesis
- Membrane Targeting

Eukaryotic Molecular and Cell Biology, BIO 3302

Proteomics, BIO 6V29-BIO 4V40 002

Biotechnology Laboratory Course BIOL 5384

Courses Taught (SUNY Upstate Medical University)

Advanced Microbiology & Immunology, MEDT522

- Proteomics and Mass Spectrometry

Molecular & Cellular Principles of Medicine, MCP101

- Clinical Correlation on Sickle Cell Disease
- Sickle Cell Disease: Clinical Correlation
- The Goal of Personalized Medicine for Sickle Cell Disease: Basic and Translational Research Approaches

Research Opportunities Course, GS604
Course Coordinator

Responsible Conduct of Scientific Research I and II, GS618 and GS619

- Authorship and Peer Review
- Research Misconduct

Systems Biology of Genetics, Genomics and Proteomics, GS628

- The Proteome
- Overview of Analytical Proteomics
- Protein Sequence Analysis by Tandem Mass Spectrometry
- Protein Identification with Tandem Mass Spectrometry Data
- Mining Proteomes
- Protein Expression Profiling
- Identifying Protein-Protein Interactions & Protein Complexes
- Mapping Protein Modifications

National Medical School Review

- Taught entire course in Cell Biology over 16-18 hours

Service at the University of South Alabama

Basic Medical Sciences Graduate Program (Director)	1993-1994
Biochemistry Chair Search Committee (Member)	1990-1991
Biotechnical Core Advisory Committee (Member)	1995-1998
Cell & Molecular Biology Committee (Chair)	1989-1992
Curriculum Committee (Member)	1989-1990
Dean Search Committee (Member)	1990
Executive Council (Member)	1988-2001
Faculty Assembly (President)	1990-1991
Faculty Senate (Member)	1991-1994
Graduate Admission Committee (Member)	1990-2001
Graduate Bylaws Subcommittee (Chair)	1990
Graduate Executive Committee (Chair)	1998-1999
Graduate Executive Committee (Chair)	1993-1994
Graduate Executive Committee (Member)	1988-2001
LCME Self Study Research Subcommittee (Chair)	1994-1995
Mass Spectrometry and Protein Structure Core	1995-1998
Medical Admissions Committee (Chair)	1992-1993
Medical Admissions Committee (Member)	1990-1993
Research Advisory Committee (Chair)	1989-2001
Research Organization and Performance Evaluation (ROPE) Task Force (Member)	2000-2001
S. Alabama Medical Sci. Found. (Board Member)	1988-1998
S. Alabama Medical Sci. Found. (Secretary)	1998-2001
S. Alabama Medical Sci. Found. Advisory Committee (Chair)	2000-2001
Student Visitation Day and Research Forum Committee	1995-1997
Task Force on Biotechnical Services (Chair)	1994
USA Comprehensive Sickle Cell Center (Director)	1993-2001
USA Vice President for Academic Affairs Search Committee (Member)	1995

Service at UT Dallas

Biochemistry Curriculum Committee (Member)	2001-2008
Campus Facilities Oversight Committee (Member)	2001-2008
Department of Molecular and Cell Biology (Head)	2001-2003
Institute of Biomedical Sciences and Technology (Director)	2003-2006
Institutional Review Board (IRB) (Vice Chair)	2001-2004
MCB Graduate Education Committee (Member)	2007
Mid Probationary Review Committee (Member)	2001-2008

School Council (Member)	2001-2008
Technion-UTD Alliance Committee (Chair)	2006-2008
UTD Sickle Cell Disease Research Center (Director)	2001-2004

Service at SUNY Upstate Medical University

Vice President for Research Committees (Internal)

Cancer Cabinet (Member)	2010-2013
Chancellor's Award for Excellence in Scholarship and Creative Activities	2011
Chancellor's Award Nominating Committee (Member)	2008-Present
College of Medicine Department Chairs Committee (Member)	2011-2013
College of Medicine Executive Committee (Member)	2008-2009
Confocal/Two Photon Imaging Research Core Advisory Committee (Ex Officio Member)	2008-2013
Dean's Leadership Team (Member)	2008-2013
DNA Sequencing Research Core Advisory Committee (Ex Officio Member)	2008-2013
Enterprise Strategic Planning Committee (Member)	2008-2013
Flow Cytometer Research Core Advisory Committee (Ex Officio Member)	2008-2010
Full Faculty Effort Committee (Member)	2012-2013
Industry Steering Committee (Member) and Task Force on Research (Chair)	2008-2009
Institutional Patent Committee (Ex Officio Member)	2008-Present
Institutional Space Committee (Ex Officio Member)	2008-Present
Jacobsen Scholar Award Committee (Chair)	2008-2009
LCME Self-Study Committee on Research and Graduate Education (Chair)	2008-2013
LCME Self-Study Steering Committee (Member)	2008-2013
Leadership Council (Member)	2008-2013
Middle States Self Study Steering Committee (Member)	2008-2009
Proteomics Research Core Advisory Committee (Ex Officio Member)	2009-Present
REGELT (Research & Graduate Education Leadership Team) (Chair)	2009-2013
Research Conflict of Interest Committee (Member)	2010-2013
Research Integrity Officer	2008-2011
Research Steering Committee (Chair)	2008-2013
Research Strategic Planning Subcommittee (Chair)	2008-2013
Senior VP and Dean, College of Medicine Search Committee (Member)	2011-2013
Upstate Council (Member)	2008-2013
Upstate Foundation Board of Directors (Ex Officio Member)	2008-2013
Upstate/Welch Allyn Committee (Member)	2012-Present

Service at SUNY Upstate Medical University

Vice President for Research Committees (External)

Advisory Council re: Technology Transfer to Taskforce on Diversifying the New York State Economy through Industry-Higher Education Partnerships (Member)	2009-2013
ARRA (Research Resilience Through Multidimensional Mentoring) Pathfinder Grant Group (Member)	2010-present
Association of Academic Health Centers (AAHC) Vice Presidents for Research Group (Member)	2008-2013
Central New York Biotechnology Research Center Board of Directors (Co-Chair)	2008-2012
CNY Biotech Accelerator Steering Committee (Member)	2012-Present
Executive Committee, International Institute for Biomedical Sciences & Technology (IIBMST) (Chair)	2009-2013
Jewish Federation Board of Directors (Member)	2011-Present
MedTech Science & Technology Committee (Member)	2008-Present
SUNY Global Advisory Council (Member)	2010-Present
SUNY Reach (Executive Director)	2009-2013
SUNY Research Allocation Model Subcommittee (Member)	2010-2013
SUNY Research Foundation Campus Research Officers (Member)	2011-2013
SUNY Vice Presidents for Research (Member)	2008-2013
SUNY Vice Presidents for Research, Strategic Planning Task Force (Member)	2008-2013
Syracuse Center of Excellence Board Development Task Force (Member)	2009-Present
Syracuse Center of Excellence Board of Directors (Member)	2008-Present
UNYTE Executive Committee (Member)	2009-Present
Veterans Administration Medical Center, Chief of Research Search Committee (Chair)	2008-2009

Veterans Administration Medical Center, Dean's Committee (Member)	2010-2013
Vice Presidents for Research (VPR) Hill Collaboration Group (Member)	2011-2013

Service at SUNY Upstate Medical University
Dean, College of Graduate Studies

Academic Council (Member)	2008-2009
Admissions/Recruitment Committee (Ex Officio Member)	2008-2013
Advising Committee (Ex Officio Member)	2008-2013
Career Development Committee (Chair)	2012-Present
Council of the Faculty Organization (Member)	2008-2013
Council of Graduate Schools (Member)	2008-2013
Curriculum Committee (Ex Officio Member)	2008-2013
Dean's Council (Member)	2008-2009
Elections Committee (Ex Officio Member)	2008-2013
Evaluations Committee (Ex Officio Member)	2008-2009
Graduate Council (Chair)	2008-2013
Graduate Faculty Organization (Member)	2008-Present
Postdoctoral Affairs Steering Committee (Ex Officio Member)	2009-2013
President's Student Excellence Learning Committee (Member)	2011-Present
President's Student Experience Steering Committee (Member)	2011-Present
Rules & Regulations Committee (Ex Officio Member)	2009-2013
Scholarship Funding Committee (Member)	2011-2013
Strategic Enrollment Committee (Member)	2008-2013
Student Research Day Committee (Co-Chair)	2008-2013

Research Support:

Current

- NIH Grant with University of Rochester, Research Resilience through Multidimensional Mentoring, Dr. Steven Goodman (PI, subcontract), 09/30/10 – 09/29/13, \$289,527 (TC), \$93,671 (Current Year).

Pending

- NIH application- New Pathways of Discovery in RBC Disorders, Multi-PI (Dr Steven R. Goodman and Dr. Diana Gilligan), 4/01/14-3/31/17, Annually \$224,665 (DC), \$91,509 (IDC), \$302,820 (TC), Total Grant Period \$908,460 (TC).

Past

Principal Investigator

- NIH Grant. Sickle Cell Disease Research Center (SCDRC) Summer Institute/Mentoring Program (Dr. Betty Pace, PI) (Dr. Steven R. Goodman, Co-I), 09/15/06 – 06/30/10, \$966,600 (TC).
- NIH Sickle Cell Center Grant HL070588 Project 1 Disregulation of the Sickle Cell Skeleton (Dr. Goodman, PI), 04/01/03 – 08/31/08, \$1,110,000 (TC).
- DOD Interdisciplinary Studies on the Combat Readiness and Health Issues Faced by Military Personnel USAMRMC #W81XWH-07-1-0492 (Dr. Steven Goodman, PI) 07/01/07 – 09/31/08, \$1,600,000. Steven R. Goodman, Project Head for Project 2 entitled "Ubiquitination of Proteins in the Normal and Pathological Brain."
- ORI-AAMC Grant Nobel Round-table Discussion on the Impact of Large Interdisciplinary & Inter-institutional Consortia on Conflict of Interest & Scientific Misconduct (Dr. Steven R. Goodman, PI), 06/01/05 – 01/22/06, \$10,000 (TC).
- Comprehensive Sickle Cell Center, NIH Grant 3P60 HL38639, 04/01/98 – 03/31/03, (Dr. Steven R. Goodman, PI), \$6,326,657 (TC).
- Federal Initiative, MIRROR Program 2003 (Dr. Steven R. Goodman, Project Director) \$550,000
- NIH Grant NS19357, Spectrin-like Proteins in Brain. (Dr. Steven Goodman, PI), 04/01/83 – 03/31/96, \$1,635,335 (DC), \$402,822 (IDC), \$2,038,157 (TC).
- NIH Grant NS26536, Structure, Location and Function of Brain Amelin, (Dr. Steven Goodman, PI), 01/01/89 – 07/31/94, \$560,129 (DC), \$263,270 (IDC), \$823,399 (TC).
- ADA Grant, Spectrin & The Regulation of Insulin Secretion. (Dr. Steven Goodman, PI), 07/01/91 – 06/30/92, \$80,000 (DC).

- NIH Grant HL26059, Protein Interactions in the Human Erythrocyte Membrane, (Dr. Steven Goodman, PI), 08/01/80 – 07/31/89, \$678,698 (DC), \$318,706 (IDC), \$996,804 (TC).
- NIH Postdoctoral Fellowship, F32HL0537, (Dr. Steven Goodman, PI), Dr. Daniel Branton (Sponsor) 06/01/77 – 05/31/79, \$28,400 Total Grand Period.

Co-Investigator

- NIH Grant PO HL66299, 09/01/01 – 08/31/06 (Dr. Troy Stevens, PI), (Steven R. Goodman, Consultant) Calcium Inhibition of cAMP in Lung Permeability \$1,460,000 (TC) \$90,000 (Goodman Subcontract)
- NIH Grant RO1 HL60024, 07/01/02 – 06/30/06 (Dr. Troy Stevens, PI), (Steven R. Goodman, Col) Store Operated Ca²⁺ Entry: Lung Endothelial Permeability - \$1,079,626 (TC) \$270,000 (Goodman Subcontract)
- NIH NCR Grant RR95-003, Extramural Research Facilities Construction. (Dr. Christian Abee, PI), (Dr. Steven Goodman, Col), 09/30/95 – 09/30/96, \$2,235,514 (DC), \$2,235,514 (TC)
- NIH Grant NS21246, Spectrin-like Protein in Developing Brain. (Dr. Ian Zagon, PI), (Dr. Steven Goodman, Col), 07/01/84 – 06/30/92, \$827,417 (DC), \$388,886 (IDC), \$1,216,303 (TC)
- American Health Assistance Foundation Alzheimer's Disease Research. (Dr. Gail A. Breen, PI), (Dr. Steven R. Goodman, Col), Proteomics of the Oxidative Phosphorylation System in AD \$100,000 (TC), \$50,000 (Current Year)

Publications:

Patents

1. Novel Sickle Cell Anemia Treatment
Approval Date: July 11, 2000
US Pat. No. 6,087,398

Books Published

1. Medical Cell Biology, First Edition, editor Steven R. Goodman, Lippincott Publishing Co., Philadelphia, PA, 1993.
2. Medical Cell Biology, Second Edition, editor Steven R. Goodman, Lippincott-Raven Publishing Co., Philadelphia, PA, 1997.
3. Medical Cell Biology, Third Edition, editor Steven R. Goodman, Academic Press/Elsevier, Burlington, MA, 2008.

Book Chapters

1. Olson, R.E., R.K. Kipfer, J.J. Morrissey and S.R. Goodman, 1974. Function of vitamin K in prothrombin synthesis. Physiology and Biochemistry of Prothrombin Conversion, Chapter 4, p. 31-55, F.K. Schattauer Verlag Stuttgart, New York.
2. Goodman, S.R. and D. Branton, 1978. Spectrin binding and the control of membrane protein mobility. Progress in Clinical and Biological Research; Normal and Abnormal Red Cell Membranes, Vol. 30, p. 177-185, Alan R. Liss, Inc., New York.
3. Goodman, S.R., C. Prezyna and W. Clough, 1978. Identification and Partial purification of two EBV associated DNA polymerases. Oncogenesis and Herpesvirus, III G. de The, F. Rapp, and W. Henle ed. International Agency for Research Against Cancer, Lyon.
4. Goodman, S.R., K. Shiffer, D.B. Coleman, and C.F. Whitfield, 1984. Erythrocyte membrane skeletal protein 4.1: A brief review. The Red Cell: Sixth Ann Arbor Conference, Progress in Clinical and Biological Research Vol. 165, p. 415-439 (George J. Brewer, editor), Alan R. Liss, Inc., New York.
5. Whitfield, C.F., D.B. Coleman, M.M.B. Kay, K.A. Shiffer, J. Miller and S.R. Goodman, 1984. Characterization and interrelationships of the polypeptides of human red cell membrane zone 4.5. Erythrocyte Membranes 3: Recent Clinical and Experimental Advances, Progress in Clinical and Biological Research Vol. 159, p. 31-45 (George J. Brewer, editor), Alan R. Liss, Inc., New York, NY.
6. Zimmer, W.E. and S.R. Goodman, 1990. Brain Spectrin. Encyclopedia Human Biol. (R. Dulbecco, Ed.) Academic Press, Vol. 2, p. 1-11.

7. Zimmer, W.E. and S.R. Goodman, 1996. Brain Spectrin. Encyclopedia Human Biol. (R. Dulbecco, Ed.) Academic Press, Vol. 3, B33: 1-13.
8. Goodman, S.R., 2002. Cell Biology. McGraw-Hill Encyclopedia of Science and Technology. 3:598-606.
9. Goodman, S.R., 2003. Brain Spectrin. Encyclopedia of Neuroscience, Elsevier Science, Third Edition.
10. Joiner, C.H. and S.R. Goodman, 2007. Damage to the RBC Membrane in Sickle Cell Disease. Pg Renaissance of Sickle Cell Disease Research in the Genome Era, Betty Pace, Ed., Imperial College Press, UK.
11. Goodman, S.R., 2007. Cell Biology. McGraw-Hill Encyclopedia of Science and Technology. Available online.

Articles Published:

Review Articles

1. Goodman, S.R. and K.A. Shiffer, 1983. The spectrin membrane skeleton of normal and abnormal human erythrocytes: a review. Am. J. Physiol: Cell Physiol. 244:C121-C141.
2. Goodman, S.R. and I.S. Zagon, 1984. Brain spectrin: A review. Brain Res. Bul. 13:813-832.
3. Goodman, S.R. and I.S. Zagon, 1986. The neural cell spectrin skeleton: A review. Am. J. Physiol: Cell Physiol. 250:C347-C360.
4. Goodman, S.R., B.M. Riederer and I.S. Zagon, 1986. Spectrin subtypes in mammalian brain. Bioessays 5:25-29.
5. Krebs, K.E., I.S. Zagon, R.K. Sihag and S.R. Goodman, 1987. Brain protein 4.1 subtypes: A working hypothesis. BioEssays 6:274-279.
6. Goodman, S.R., K.E. Krebs, C.F. Whitfield, B.M. Riederer and I.S. Zagon, 1988. Spectrin and related molecules. CRC. Critical Rev Biochem. 23:171-234.
7. Goodman, S.R., W.E. Zimmer, M.B. Clark, I.S. Zagon, J.E. Barker and M.L. Bloom, 1995. Brain spectrin: of mice and men. Brain Res. Bul. 36:593-606.
8. Goodman, S.R., 1996. The Role of the Membrane Skeleton in Formation of the Irreversibly Sickle Cell: A Review. Cellular & Molecular Biology Letters 1:105-112.
9. Goodman, S.R., 1999. Discovery of Nonerythroid Spectrin to the Demonstration of its Key Role in Synaptic Transmission. Brain Res. Bull. 50(5/6):345-346.
10. Sangerman, J., D. Kakhniashvili, A. Brown, A. Shartava and S.R. Goodman, 2001. Spectrin Ubiquitination and Oxidative Stress: Potential Roles in Blood and Neurological Disorders. Cell Biol. Lett.6:607-636.
11. Goodman, S.R., 2004. The Irreversibly Sickled Cell: A Perspective. Cellular and Molecular Biology. 50:53-58.
12. Hsu, J. and S.R. Goodman, 2005. Spectrin and Ubiquitination: A Review. Cellular and Molecular Biology 51:OL801-OL807.
13. Goodman, S.R., A. Kurdia, L. Ammann, D. Kakhniashvili and O. Daescu, 2007. The Human Red Blood Cell Proteome and Interactome, Exp. Biol. & Med. 232:1391-1408.
14. Denman, B. and S.R. Goodman, 2011. Emerging and Neglected Tropical Diseases: Translational Applications of Proteomics. Exp. Biol. & Med. 236: 972-976.

15. Goodman, S.R., O. Daescu, D. Kakhniashvili, and M. Zivanic 2013. The Proteomics and Interactomics of Human Erythrocytes. *Exp. Biol. & Med.* In press.

Editorials

1. Goodman, S.R., Message from the New Editor-in-Chief. *Exp. Biol. & Med.* 231:1188, 2006
2. Goodman, S.R., The Alan. G. MacDiarmid Annual Award for Best Interdisciplinary Research Article. *Exp. Biol. & Med.* 232:845-846, 2007.
3. Goodman, S.R., Experimental Biology and Medicine Embraces our Scientific Colleagues in Asia. *Exp. Biol. & Med.* 232:1255-1257, 2007.
4. Goodman, S.R., EBM and SEBM Inaugurate a European Office: Dr. Farzin Farzaneh Named EBM European Editor. *Exp. Biol. & Med.* 223:777-778, 2008.
5. Goodman, S.R., Professor Huan-Yao Lei Appointed to the Newly Created Position of Asian Editor for Experimental Biology and Medicine. *Exp. Biol. & Med.* 233:1-2, 2008.
6. Goodman, S.R., The Experimental Biology and Medicine and Royal Society of Medicine Press Partnership. *Exp. Biol. & Med.* 235:1-2, 2010.
7. Goodman S.R., The Experimental Biology and Medicine's New Dual Submission Policy. *Exp. Biol. & Med.* 236:1-2, 2011.
8. Goodman S.R., I dedicate this issue of EBM to Professor Huan-Yao Lei. *Exp. Biol. & Med.* 237:471, 2012.
9. Goodman S.R, and R.T. Mallet, Plagiarism. *Exp. Biol & Med.* 237: 739, 2012.

Primary Research Articles

1974

1. Goodman, S.R., R.M. Houser and R.E. Olson, 1974. Ineffectiveness of phyllo-quinone epoxide as an inhibitor of prothrombin synthesis in the rat. *Biochem. Biophys. Res. Commun.* 61:250-257.

1976

2. Goodman, S.R., B. L. Marrs, R.J. Narconis and R.E. Olson, 1976. Isolation and description of a menaquinone mutant from bacillus licheniformis. *J. Barteriol.* 125:282-289.
3. Hirschberg, C.B., S.R. Goodman and C. Green, 1976. Sialic acid uptake by fibroblasts. *Biochemistry* 15:3591-3599.

1978

4. Goodman, S.R., C. Prezyna and W. Clough, 1978. Two Epstein-Barr Virus-associated DNA polymerase activities. *J. Biol. Chem.* 253:9617-8628.
5. Goodman, S.R. and D. Branton, 1978. Spectrin binding and the control of membrane protein mobility. *J. Supramolec. Struct.* 8:455-463.

1979

6. Yu, J. and S.R. Goodman, 1979. Syndeins: The spectrin-binding protein(s) of the human erythrocyte membrane. *Proc. Nat'l. Acad. Sci. USA* 76:2340-2344.

1980

7. Siegel, D., S.R. Goodman and D. Branton, 1980. The effect of endogenous proteases on the spectrin binding proteins of human erythrocytes. *Biochem. Biophys. Act* 598:517-527.

8. Goodman, S.R. and S.A. Weidner, 1980. Binding of spectrin α 2 – β 2 tetramers to human erythrocyte membranes. *J. Biol. Chem.* 255:8082-8086.
- 1981**
9. Goodman, S.R., S.A. Weidner, M.E. Eyster and J.J. Kesselrin, 1981. Binding of spectrin to hereditary spherocyte membranes. *J. Molecular and Cellular Cardiology*, 14:91-97.
10. Goodman, S.R., I.S. Zagon and R.R. Kulikowski, 1981. Identification of a spectrin-like protein in nonerythroid cells. *Proc. Nat'l Acad. Sci. USA*, 78:7570-7574.
- 1982**
11. Goodman, S.R., J. Yu, C.F. Whitfield, E.N. Culp and E.J. Posnak, 1982. Erythrocyte membrane skeletal proteins 4.1 a and b are sequence related phosphoproteins. *J. Biol. Chem.* 257:4564-4569.
12. Goodman, S.R., K.A. Shiffer, L.A. Casoria and M.E. Eyster, 1982. Identification of the molecular defect in the erythrocyte membrane skeleton of some kindreds with hereditary spherocytosis. *Blood* 60:772-784.
- 1983**
13. Whitfield, C.F., L.M. Mylin and S.R. Goodman, 1983. Species dependent variation in erythrocyte membrane skeletal proteins. *Blood* 61:500-506
14. Koteliansky, V.E, G.N. Gneushev, A.S. Shartava, V.P. Shirinsky, M.A. Glukhova and S.R. Goodman, 1983. The regulation by vinculin of filamin, α -actinin, and spectrin tetramer induced actin Sol-Gel transformation. *FEBS Letters* 51:206-210
15. Kay, M.M.B., S.R. Goodman, K. Sorensen, C.F. Whitfield, P. Wong, L. Zaki and V. Rudloff, 1983. Senescent cell antigen is immunologically related to band 3. *Proc. Nat'l Acad. Sci USA.*, 80:1631-1635
16. Goodman, S.R., I.S. Zagon, C.F. Whitfield, L.A. Casoria, P.J. McLaughlin and T. Laskiewicz, 1983. A spectrin-like protein from mouse brain membranes: Immunological and structural correlations with erythrocyte spectrin. *Cell Motility* 3:635-647.
- 1984**
17. Goodman, S.R., I.S. Zagon, C.F. Whitfield, L.A. Casoria, S.B. Shohet, S. Bernstein, P.J. McLaughlin and T.L. Laskiewicz, 1984. A spectrin-like protein from mouse brain membranes: phosphorylation of the 235,000 dalton subunit. *Am. J. Physiol:Cell Physiol.* 16:C61-C73.
18. Wallin, R., E.N. Culp, D.B. Coleman, and S.R. Goodman, 1984. A structural model of human erythrocyte band 2.1: alignment of chemical and functional Domains. *Proc. Natl. Acad. Sci.USA* 81:4095-4099.
19. Shiffer, K.A. and S.R. Goodman, 1984. Protein 4.1: its association with the human erythrocyte membrane. *Proc. Natl. Acad. Sci. USA.* 81:4404-4408.
20. Goodman, S.R., L.A. Casoria, D.B. Coleman and I.S. Zagon, 1984. Identification and location of Brain protein 4.1. *Science* 224:1433-1436.
21. Casoria, L.A., I.S. Zagon, S. Bernstein, S.B. Shohet, P.J. McLaughlin and S.R. Goodman, 1984. Normal content of brain spectrin-like protein in Sph/Sph mice. *Br. J. Haem.* 58:659-667.
22. Zagon, I.S., P.J. McLaughlin and S.R. Goodman. 1984. Localization of spectrin in mammalian brain. *J. Neurosci.* 4:3089-3100.
- 1985**
23. Whitfield, C.F., D.B. Coleman, M.M.B. Kay, K.A. Shiffer, J. Miller and S.R. Goodman, 1985. Human red cell membrane proteins of zone 4.5 exists as families of related proteins. *Am. J. Physiol.:Cell Physiol.* 248:C70-C79.

24. Borland, K., S. Osawa, D. Kew, D.B. Coleman, S.R. Goodman and P.F. Hall, 1985. Identification of a spectrin-like protein in sertoli cells. *Biology of Reprod.* 32:1143-1156.

1986

25. Riederer, B.M., I.S. Zagon and S.R. Goodman, 1986. Brain spectrin (240/235) and brain spectrin (240/235E): two distinct spectrin subtypes with different locations within mammalian neural cells. *J. Cell Biol.* 102:2088-2096.
26. Osawa, S., D. Kew, K. Borland, D.B. Coleman, S.R. Goodman and P.F. Halls, 1986. Occurrence of spectrinlike protein in Y-1 adrenal tumor cells. *Endocrinology* 118:2458-2463.
27. Goodman, S.R., I.S. Zagon, D.B. Coleman and P.J. McLaughlin, 1986. Spectrin expression in neuroblastoma cells. *Br. Res. Bul.* 16:597-602.
28. Zagon, I.S., R. Higbee, B. M. Riederer and S.R. Goodman, 1986. Spectrin subtypes in mammalian brain: an immunoelectrin microscopic study. *J. Neurosci.* 6:2977-2986.
29. Krebs, K.E., I.S. Zagon and S.R. Goodman, 1986. A rapid purification of synapsin I: a neuron specific spectrin binding protein. *Br. Res. Bul.* 17:237-241.

1987

30. Riederer, B.M., I.S. Zagon and S.R. Goodman, 1987. Brain spectrin (240/235) and brain spectrin (240/235E): differential expression during mouse brain development. *J. Neurosci.* 7:864-874.
31. Goodman, S.R. and I.S. Zagon, 1987. Brain spectrin: structure, location and function, a symposium overview. *Brain Res. Bul.* 18:773-776.
32. Goodman, S.R., I.S. Zagon and B.M. Riederer, 1987. Spectrin isoforms in mammalian brain. *Brain Res. Bul.* 18:787-792.
33. Zagon, I.S., B.M. Riederer and S.R. Goodman, 1987. Spectrin expression during mammalian brain ontogeny. *Brain Res. Bul.* 18:799-807.
34. Krebs, K.E., I.S. Zagon and S.R. Goodman, 1987. Amelin and synapsin I are 4.1 related spectrin binding proteins in brain. *Brain Res. Bul.* 18:793-798.
35. Pollerberg, G.E., K. Burrige, K.E. Krebs, S.R. Goodman and M. Schachner, 1987. The 180 kD component of the neural cell adhesion molecule N-CAM is involved in cell-cell contacts and cytoskeleton-membrane interactions. *Cell and Tissue Res.* 250:227-236.
36. Krebs, K.E., S.M. Prouty, I.S. Zagon and S.R. Goodman, 1987. The structural and functional relationship of RBC protein 4.1 to synapsin I. *Am. J. Physiol. Cell Physiol.* 22:C500-C505.
37. Cioe, L., P. Laurila, M. Pacifico, K. Krebs, S. Goodman and P.J. Curtis, 1987. Cloning and nucleotide sequence of a mouse erythrocyte- β spectrin cDNA. *Blood* 70:915-920.
38. Weisenberg, R.C., J. Glynn, B. Gao, S. Awodi, F. Skee, S.R. Goodman and B.M. Riederer, 1987. Microtubule gelation-contraction: Essential components and relationship to slow axonal transport. *Science* 238:1119-1122.
39. Zagon, I.S., P.J. McLaughlin, S.R. Goodman and R.E. Rhodes, 1987. Opioid receptors and endogenous opioids are present in diverse human and animal cancers. *J. Natl. Cancer Inst.* 79:1059-1065.
40. Krebs, K.E., I.S. Zagon and S.R. Goodman, 1987. Amelin: A 4.1-related spectrin binding protein found in neuronal cell bodies and dendrites. *J. Neurosci.* 7(12):3907-3914.
41. Riederer, B.M. and S.R. Goodman, 1987. Immunological detection of high molecular weight proteins by gel and blot overlay. *Brain Res. Bul.* 19:715-722.

1988

42. Zagon, I.S., S.R Goodman and P.J. McLaughlin, 1988. Characterization of opioid binding sites in murine neuroblastoma. *Brain Res.* 449:80-88.
43. Riederer, B.M, L.L. Lopresti, K.E. Krebs, I.S. Zagon and S.R. Goodman, 1988. Brain spectrin (240/235) and brain spectrin (240/235E): Conservation of structure and location within mammalian neural tissue. *Brain Res. Bul.* 21:607-616.

1989

44. Zagon, I.S., S.R. Goodman and P.J. McLaughlin, 1989. Characterization of zeta (ζ): A new opioid receptor involved in growth. *Brain Res.* 482:297-305.
45. Zagon, I.S. and S.R. Goodman, 1989. Absence of brain spectrin (240/235) in dendrites of mammalian brain. *Brain Res. Bul.* 23:19-24.
46. Goodman, S.R., L.L. Lopresti, B.M. Riederer, A. Sikorski and I.S. Zagon, 1989. Brain Spectrin (240/235A): A novel astrocyte specific spectrin isoform. *Brain Res. Bul.* 23:311-316.

1990

47. Zagon, I.S., S.R. Goodman and P.J. McLaughlin, 1990. Demonstration and characterization of zeta (ζ), a growth-related opioid receptor, in a neuro-blastoma cell line. *Brain Res.* 511:181-188.
48. Kay, M.M.B., J. Goodman, S.R. Goodman and C. Lawrence, 1990. Membrane Protein Band 3 Alteration Associated with Neurologic Disease and Tissue Reactive Antibodies. *Expl. Clin. Immunogenet.* 7:191-204.
49. Karinch, A.M., W.E. Zimmer and S.R. Goodman, 1990. The Identification and Sequence of the Actin-Binding Domain of Human Red Blood Cell β -Spectrin. *J. Biol. Chem.* 265:11833-11840.
50. Sikorski, A.F. and S.R. Goodman, 1990. The Role of Spectrin and Synapsin I in Synaptic Transmission. *Biophys. Memb. Transport* 2:129-137.

1991

51. Riederer, B.M. and S.R. Goodman, 1991. Association of Brain Spectrin Isoforms with Microtubules. *FEBS Lett.* 277:49-52.
52. Sikorski, A.F., G. Terlecki, I.S. Zagon and S.R. Goodman, 1991. Synapsin I- mediated Interaction of Brain Spectrin with Small Synaptic Vesicles. *J. Cell Bio.* 114:313-318.
53. Isayama, T., S.R. Goodman and I.S. Zagon, 1991. Spectrin Isoforms in the Mammalian Retina. *J. Neurosci.* 11:3531-3538.
54. Sikorski, A.F. and S.R. Goodman, 1991. The Effect of Synapsin I Phosphorylation Upon Binding of Synaptic Vesicles to Spectrin. *Br. Res. Bul.* 27:195-198.
55. Zimmer, W.E., Y. Ma and S.R. Goodman, 1991. Tissue Distribution of Brain β -spectrin mRNAs. *Br. Res. Bul.* 27:187-193.

1992

56. Yang, Y.M., C. Donnell, W. Wilborn, S.R. Goodman, B. Files, R.B. Moore, N. Mohandas and V. Mankad, 1992. Splenic Sequestration Associated with Sickle Cell Trait and Hereditary Spherocytosis. *Am. J. Hematology* 40:110-116.
57. Zimmer, W.E., I.S. Zagon, L.A. Casoria and S.R. Goodman, 1992. Identification of an Amelin Isoform Located in Axons. *Brain Research* 582:94-100.
58. Bloom, M.L., B.K. Lee, C. Birkenmeier, Y. Ma, W.E. Zimmer, S.R. Goodman, E.M. Eicher and J.E. Barker, 1992. The Gene for Brain Beta-Spectrin Isoform (235) Maps to Mouse Chromosome 11 and Defines a New Region of Synteny to Human Chromosome 2. *Mammal. Genome* 3:293-295.
59. Zimmer, W.E., Y. Ma, I.S. Zagon and S.R. Goodman, 1992. Developmental Expression of Brain β -Spectrin Isoform Messenger RNAs. *Brain Research* 594:75-83.

1993

60. Zagon, I.S., S.R. Goodman and P.J. McLaughlin, 1993. Zeta (ζ), the Opioid Growth Factor Receptor: Identification and Characterization of Binding Subunits. *Brain Research* 605:50-56.
61. Warren, J.C., G. Murdock, Y. Ma, S.R. Goodman and W.E. Zimmer, 1993. Molecular Cloning of Testicular 20 α Hydroxysteroid Dehydrogenase: Identify with Aldose Reductase. *Biochem.* 32:1401-1406.
62. Ma, Y., W.E. Zimmer, B.M. Riederer, M.L. Bloom, J.E. Barker and S.R. Goodman, 1993. The Complete Amino Acid Sequence for Brain β Spectrin (β fodrin): Relationship to Globin Sequences. *Mol. Brain Res.* 18:87-99.
63. Isayama, T., S.R. Goodman and I.S. Zagon, 1993. Localization of Spectrin Isoforms in the Adult Heart. *Cell & Tissue Research* 274:127-133.

1994

64. Lengeling, A., W.E. Zimmer, S.R. Goodman, Y. Ma, M.L. Bloom, G. Gruneau, M. Krieger, J. Thibault, K. Kaupmann and H. Jockusch, 1994. Exclusion of Two Candidate Genes, Spnb-2 and Ddc, for the Wobbler Spinal Muscular Atrophy Gene on Proximal Mouse Chromosome 11. *Mammalian Genome* 5:163-166.
65. Clark, M.B., Y. Ma, M. Bloom, J. Barker, I. Zagon, W. Zimmer and S.R. Goodman, 1994. Brain α Erythroid Spectrin: Identification, compartmentalization, and β - Spectrin Associations. *Brain Research* 663:223-226.

1995

66. Shartava, A., C.A. Monteiro, F.A. Bencsath, K. Schneider, B.T. Chait, R. Gussio, L.A. Casoria-Scott, A.K. Shah, C.A. Heuerman and S.R. Goodman, 1995. A Posttranslational Modification of β -Actin Contributes to the Slow Dissociation of the Spectrin-Protein 4.1-Actin Complex of Irreversibly Sickled Cells. *J. Cell Biol.* 128:805-815.

1996

67. Shartava, A., P. Miranda, A. Shah, C.A. Monteiro and S.R. Goodman, 1996. High Density Sickle Cell Erythrocyte Core Membrane Skeletons Demonstrate Slow Temperature Dependent Dissociation. *Am. J. Hematol.* 51:215-220.
68. Bencsath, F.A., A. Shartava, C.A. Monteiro and S.R. Goodman, 1996. Identification of the β -Actin Disulfide-Linked Peptide Which Leads to the Slow Dissociation of the Irreversibly Sickled Membrane Skeleton. *Biochemistry* 35:4403-4408.

1997

69. Shartava, A. W. Korn, A.K. Shah and S.R. Goodman, 1997. Irreversibly Sickled Cell β -Actin: Defective Filament Formation. *Am. J. Hematology* 55:97-103.

1998

70. Monteiro, C.A., X.A. Gibson, A. Shartava and S.R. Goodman, 1998. Preliminary Characterization of a Structural Defect in Homozygous Sickled Cell Alpha Spectrin Demonstrated By A Rabbit Autoantibody. *Am. J. Hematology* 58:200-205.
71. Gibson, X.A., A. Shartava, J. McIntyre, C.A. Monteiro, Y. Zhang, A. Shah, N. Campbell and S.R. Goodman, 1998. The Efficacy of Reducing Agents or Antioxidants in Blocking the Formation of Irreversibly Sickled Cells In Vitro. *Blood* 91(11):4373-4378.

1999

72. Goodman, S.R., B.S. Pace and A. Shartava, 1999. New Therapeutic Approaches to Sickle Cell Disease: Targeting RBC Membrane Oxidative Damage. *Cell Mol. Biol. Lett.* 3:403-411.
73. Wang, G., X. Xu, B.S. Pace, D.A. Dean, P.M. Glazer, P. Chan, S.R. Goodman and I. Shokolenko, 1999. Peptide nucleic acid (PNA) binding-mediated induction of human γ -globin gene expression. *Nucleic Acids Res.* 27(13):2806-2813.

74. Shartava, A., A.K. Shah and S.R. Goodman, 1999. N-acetylcysteine and Clotrimazole Inhibit Sickle Erythrocyte Dehydration Induced by 1-Chloro – 2,4-Dinitrobenzene. *Am. J. Hematology* 62:19-24.
75. Sangerman, J., A.L. Gard, A. Shah and S.R. Goodman, 1999. Synthesis, assembly and turnover of α and β -erythroid and nonerythroid spectrins in rat hippocampal neurons. *Brain Res.* 849:128-138.
- 2000**
76. Sikorsky, A., J. Sangerman, S.R. Goodman and S. Critz, 2000. Spectrin (β Spl Σ 1) is an essential component in synaptic transmission. *Brain Res.* 852:161-166.
77. Pace, B.S., Y.R. Chen, A. Thompson and S.R. Goodman, 2000. Butyrate Inducible Elements in the Human α Globin Gene Promoter. *Experimental Hematology* 28:283-293.
78. Shartava, A., J. McIntyre, A.K. Shah and S.R. Goodman, 2000. The Gardos Channel is Responsible for CDNB Induced Dense Sickle Cell Formation. *Amer. J. Hematol.* 64(3):184-189.
79. Zimmer, W.E., Y. Zhao, A.F. Sikorski, S. Critz, J. Sangerman, L. Elferink, X.S. Xu and S.R. Goodman, 2000. The Domain of β -Spectrin Responsible for Synaptic Vesicle Association is Essential for Synaptic Transmission. *Brain Res.* 881:18-27.
- 2001**
80. Sangerman, J. and S.R Goodman, 2001. Measurement of the Synthesis, Turnover, an Assembly of α and β Erythroid and Nonerythroid Spectrin in Hippocampal Neurons. *Brain Res. Protocols* 6:141-147.
81. Sangerman, J., A.S. Killilea, R. Chronister, M.A. Pappolla and S.R. Goodman, 2001. α Spectrins are Major Ubiquitinated Proteins in Hippocampal Neurons and Components of Ubiquitinated Inclusions in Neurodegenerative Disorders. *Brain Res. Bul.* 54:405-511.
82. McMahon, L.W., J. Sangerman, S.R. Goodman and M.W. Lambert, 2001. Human Alpha Spectrin II, in Association with the FANCA, FANCC and FANCG Proteins, Binds to DNA Containing Psoralen Interstrand Cross-links. *Biochemistry* 40:7025-7034.
83. Wu, S., J. Sangerman, M. Li, G.H. Brough, S.R. Goodman and T. Stevens, 2001. Essential Control of an endothelial cell Isoc by the spectrin membrane skeleton. *J. Cell Biol.* 154:1-11.
84. Kakhniashvili, D.G., T. Chaudhary, W.E. Zimmer, F.A. Bencsath, I. Jardine and S.R. Goodman, 2001. Spectrin is an E2 Ubiquitin Conjugating Enzyme. *Biochemistry.* 40:11630-11642.
85. Kakhniashvili, D.G. and S.R. Goodman, 2001. Isolation of Spectrin Subunits by Reverse Phase High Performance Liquid Chromatography. *Prot. Exp. Purif.* 23:249-251.
- 2002**
86. Abraham, A. F.A. Bencsath, A. Shartava, D.G. Kakhniashvili and S.R. Goodman, 2002. Preparation of irreversibly sickled cell β -actin from normal red blood cell β -actin. *Biochemistry* 41:292-296.
- 2003**
87. Pace, B.S., A. Shartava, A. Pack-Mabien, M. Mulekar, A. Ardia and S.R. Goodman, 2003. Effects of N-Acetylcysteine On Vaso-occlusive Episodes in Sickle Cell Disease. *Am. J. Hematol.* 73:26-32.
- 2004**
88. Chang, T.L., F.F. Cubillos, D.G. Kakhniashvili and S.R. Goodman, 2004. Ankyrin is a target of spectrin's E2/E3 ubiquitin-conjugating/ligating activity. *Cellular and Molecular Biology* 50:59-66.
89. Ghatpande, S.S. and S.R. Goodman, 2004. Effect of Spectrin Ubiquitination on the Dissociation of the Spectrin-Protein 4.1-Actin Ternary Complex in Erythrocytes. *Cellular and Molecular Biology* 50:67-74.
90. Mishra, R. and S.R. Goodman, 2004. Ubiquitination of Spectrin Regulates the Dissociation of the Spectrin-Adducin-F-Actin Ternary Complex In Vitro. *Cellular and Molecular Biology* 50:75-80.

91. Goodman, S.R., 2004. Preface: Thematic Issue on Sickle Cell Disease. *Cellular and Molecular Biology* 50:1-4
92. Kakhniashvili, D.G., L.E. Bulla and S.R. Goodman, 2004. The Human Erythrocyte Proteome: Analysis by Ion Trap Tandem Mass Spectrometry. *Molecular and Cellular Proteomics* 3:501-509.
93. Chang, T.C., F.F. Cubillos, D.G. Kakhniashvili and S.R. Goodman, 2004. Band 3 is a Target of Spectrin's E2/E3 Activity: Implications for Sickle Cell Disease and Normal RBC Aging. *Cellular and Molecular Biology* 50:171-177.
94. Blake, C.A., D.G. Kakhniashvili and S.R. Goodman, 2004. Analysis of the Golden Syrian Hamster Anterior Pituitary Gland Proteome by Ion Trap Mass Spectrometry. *Neuroendocrinology*, 80: 355-367.

2005

95. Riahi, M.H., D.G. Kakhniashvili and S.R. Goodman, 2005. Ubiquitination of Red Blood Cell α -Spectrin Does Not Effect Heterodimer Formation. *Am. J. Hematol.* 78:281-287.
96. Chang, T.L., D.G. Kakhniashvili and S.R. Goodman, 2005. Spectrin's E2/E3 Ubiquitin Conjugating/Ligating Activity is Diminished in Sickle Cells. *Am. J. Hematol.* 79:89-96.
97. Blake, C.A., D.G. Kakhniashvili and S.R. Goodman, 2005. The Mouse Anterior Pituitary Gland: Analysis by Ion Trap Mass Spectrometry. *Neuroendocrinology* 81:229-243.
98. Wu, S., E. Cioffi, D. Alvarez, S. Sayner, H. Chen, D. Cioffi, J. King, J. Creighton, M. Townsley, S.R. Goodman and T. Stevens, 2005. Essential Role of a Ca^{2+} Selective, Store Operated Current (ISOC) in Endothelial Cell Permeability. Determination of the Vascular Leak Site. *Circulation Res.* 96:856-863.
99. Hsu, J., W.E. Zimmer and S.R. Goodman, 2005. Erythrocyte Spectrin's Chimeric E2/E3 Ubiquitin Conjugating/Ligating Activity. *Cellular and Molecular Biology* 51:187-193.
100. Kakhniashvili, D.G., N.B. Griko, L.A. Bulla Jr. and S.R. Goodman, 2005. The Proteomics of Sickle Cell Disease: Profiling of Erythrocyte Membrane Proteins by 2D-DIGE and Tandem Mass Spectrometry. *Exper. Biol. Med.* 230:787-792.
101. Cioffi, D.L., S. Wu, M. Alexeyev, S.R. Goodman, M.X. Zhu and T. Stevens, 2005. Activation of the Endothelial Store-Operated $I_{\text{soc}}\text{Ca}^{2+}$ Channel Requires Activation of Protein 4.1 with TRPC4. *Circulation Res.* 197:1164-1170.

2006

102. Chou, J., P.K. Choudhary and S.R. Goodman, 2006. Protein Profiling of Sickle Cell Versus Control RBC Core Membrane Skeletons by ICAT Technology and Tandem Mass Spectrometry. *Cell Mol. Biol. Lett.* 11:326-337.
103. Goodman, S.R. and C.A. Blake, 2006. The Future of Interdisciplinary Research and Training: Defeating the Silo Guardians. *Exp. Biol. & Med.* 231:1189-1191.
104. Goodman, S.R., 2006. The Future of Interdisciplinary Research and Training: Nobel Roundtable Discussion. *Exp. Biol. & Med.* 231:1225-1239.

2007

105. Hryniewicz-Jankowska, A., P.A. Choudhary and S.R. Goodman, 2007. Variation in the Monocyte Proteome. *Exp. Biol. & Med.* 232:967-976.
106. Goodman, S.R., K.M.H. Hughes, D.G. Kakhniashvili and S. Neelam, 2007. The Isolation of Reticulocyte Free Human Red Blood Cells. *Exp. Biol. & Med.* 232:1470-1476.
107. Kurdia, A., O. Daescu, L. Ammann, D. Kakhniashvili and S.R. Goodman, 2007. Centrality Measures for the Human Red Blood Cell Interactome. *IEEE Proc.*, pp. 98-101.

2008

108. Yin, K., P.K. Choudhary, D. Varghese and S.R. Goodman, 2008. A Bayesian Approach for Sample Size Determination in Method Comparison Studies. *Statist. Med.* 27:2273-2289.
109. Palkar, P.S., D.G. Kakhniashvili, S.R. Goodman and H.M. Mehendale, 2008. The rat red blood cell proteome is altered by 2-butoxyethanol priming. *Toxicology and Applied Pharmacology* 230:338-345.
110. Ghatpande, S.S., P.K. Choudhary, C.T. Quinn and S.R. Goodman, 2008. Pharmac-Proteomic Study of Hydroxyurea- Induced Modifications in the Sickle Red Blood Cell Membrane Proteome. *Exper. Biol. & Med.* 233:1510-1517.

2009

111. Hryniewicz-Jankowska, A., P.K. Choudhary, L. Ammann, C.T. Quinn and S.R. Goodman, 2009. Monocyte protein signatures of disease severity in sickle cell anemia. *Exper. Biol. & Med.* 234:210-221.
112. Ammann, L. and S.R. Goodman, 2009. Cluster analysis for the impact of sickle cell disease on the human erythrocyte protein interactome. *Exper. Biol. & Med.* 234:703-711.

2010

113. Ghatpande, S.S., P.K. Choudhary, C.T. Quinn and S.R. Goodman, 2010. In Vivo Pharmac-Proteomics Analysis of Hydroxyurea Induced Changes in the Sickle Red Blood Cell Membrane Proteome. *J. Proteomics* 73:619-626

2011

114. Chou, J.L., D.V. Shenoy, N. Thomas, P.K. Choudhary, F.M. LaFerla, S.R. Goodman and G.A.M. Breen, 2011. Early dysregulation of the mitochondrial proteome in a mouse model of Alzheimer's disease, *Journal of Proteomics* 74:466-479.
115. Neelam, S., D. Kakhniashvili, S. Wilkens, S. Levene and S.R. Goodman, 2011. Proteasomes in Mature Human RBCs. *Exper. Biol. & Med.* 236: 580-591.
116. Trief P, Cleary L, Goodman S, Duggan D, Van Nortwick M, Scheinman S. 2011 A Case-Based Approach to Chair Development. *MedEdPORTAL*; 2011. Available from: www.mededportal.org/publication/8606.

2012

117. Zivanic, M., A. Kurdia, O. Daescu and S.R. Goodman, 2012. The Voronoi diagram for graphs and its application in Sickle Cell Disease Research. *J. Comput. Sci.* 3: 335-343.

2013

118. Lee, M.H., W-P Su, S-R Lin, J-Y Chang, L-J Hsu, Y-T Chou, S-S Huang, C-S Chung, D. Subhan, W-J Wang, P-Y Chou, S-J Chen, Y-A Chen, S-R Y, H. He, C-Y Lu, T-H Liu, F-J Lai, S-J Chen, D. Kakhniashvili, S. R. Goodman, and N-S Chang, 2012. Self-polymerizing Zfra activates memory Hyal-2-positive spleen cells to block cancer initiation, progression and metastasis. Manuscript submitted.

Abstracts:

1974

1. Goodman, S.R., 1974. Ineffectiveness of vitamin K oxide as an inhibitor of prothrombin biosynthesis in the rate. *Fed. Proc.* 33:1500.

1975

2. Goodman, S.R., B.L. Marrs, S. Bose and R.E. Olson, 1975. Occurrence of squalene and menaquinone-7 in bacillus licheniformis. *Am. Soc. Microbiol.* P.157.

1976

3. Goodman, S.R., R.R. Goewert and B.L. Marrs, 1976. Menaquinone dependent alterations in the membrane protein profile of bacillus licheniformis. *Fed. Proc.* 35:1763.

4. Hirschberg, C.B. and S.R. Goodman, 1976. Free Sialic Acid uptake by fibroblasts and subsequent incorporation into glycoproteins and glycolipids. *J. Cell Biol.* 70:149a.

1977

5. Walker, M.N., S.R. Goodman and B.L. Marrs, 1977. Carotenoid biosynthesis in *rhodospseudomonas capsulata*. *Am. Soc. Microbiol.*, p. 193.
6. Goodman, S.R., C. Prezyna and W. Clough, 1977. Identification and partial purification of two EBV associated DNA polymerases. *International Symposium on Oncogenesis and Herpesvirus*, p. 71.

1978

7. Clough, W., C. Prezyna and S.R. Goodman, 1978. Epstein-Barr virion associated enzymes. *J. Supramol. Struct. Suppl.* 2:264.

1979

8. Yu, J. and S.R. Goodman, 1979. Syndein(s): The spectrin binding protein(s) of human erythrocytes. *Fed. Proc.* 38:798.
9. Yu, J. and S.R. Goodman, 1979. Identification of the binding protein(s) for human erythrocyte spectrin. *J. Supramol. Struct. Suppl.* 3:263.

1980

10. Goodman, S.R. and S.A. Weidner, 1980. Binding of spectrin $\alpha 2$ - $\beta 2$ tetramers to human erythrocyte membranes. *Fed. Proc.* 39:1918.

1981

11. Goodman, S.R., J.J. Kesselring, S.A. Weidner and E.M. Eyster, 1981. The molecular alteration in the cytoskeleton of hereditary spherocytes. *J. Supramol. Struct. and Cell. Biochem. Suppl.* 5:131.
12. Goodman, S.R. and R.R. Kulikowski, 1981. Identification of spectrin in nonerythroid cells. *J. Supramol. Struct. and Cell. Biochem. Suppl.* 5:261.
13. Goodman, S.R., J.J. Kesselring, M.E. Eyster and S.A. Weidner, 1981. The molecular alteration in the spectrin cytoskeleton of hereditary spherocytes. *Fed. Proc.* 40:1746.
14. Goodman, S.R. and M.E. Eyster, 1981. Alteration of the spectrin-protein 4.1 interaction in hereditary spherocytosis. *Blood* 5:42a.

1982

15. Goodman, S.R., J. Yu, C.F. Whitfield, E.N. Culp and E.J. Posnak, 1982. Human erythrocyte membrane skeletal proteins 4.1 a and 4.1 b are sequence related phosphoproteins. *Fed. Proc.* 41:657.
16. Whitfield, C.F., L.M. Mylin and S.R. Goodman, 1982. Membrane skeletal adaptations to cell size in small and large mammalian erythrocytes. *Fed. Proc.* 41:657.
17. Goodman, S.R. and I.S. Zagon, 1982. Purification and characterization of membrane-associated mouse brain spectrin. *J. Cell. Biol.*, 95:241a.
18. Kay, M.M.B., S.R. Goodman, K. Sorensen, C.F. Whitfield, P. Wong, L. Zaki and V. Rudloff, 1982. The senescent cell antigen is immunologically related to band 3. *J. Cell Biol.* 95:244a.
19. Shiffer, K.A. and S.R. Goodman, 1982. The molecular interaction of erythrocyte membrane skeletal protein 4.1. *Blood* 60 Suppl. 1:24a.
20. Kay, M.M.B., S.R. Goodman and C. Cone, 1982. A polypeptide immunologically related to red cell band 3 is present in white blood cells. *Blood* 60 Suppl. 1:64a.

1983

21. Whitfield, C.F., M.M.B. Kay, J. Miller and S.R. Goodman, 1983. The heterogeneous band 4.5 of human erythrocyte membranes contains several polypeptides which are immunologically and structurally related to band 3. *Fed. Proc.* 42:2566.
22. Shiffer, K.A. and S.R. Goodman, 1983. The association between human erythrocyte protein 4.1 and the erythrocyte membrane. *Fed. Proc.* 42:2700.
23. Goodman, S.R., I.S. Zagon, C.F. Whitfield, L.A. Casoria, P.J. McLaughlin and T.L. Laskiewicz, 1983. The discovery of spectrin-like molecules in nonerythroid cells, and recent advances in understanding the structure, localization, and function of these molecules. *Second International Conference on Biological Structure*:34.
24. Goodman, S.R., I.S. Zagon, C.F. Whitfield, L.A. Casoria, P.J. McLaughlin and T.L. Laskiewicz, 1983. Nonerythroid spectrin-like proteins: structural characterization of a spectrin analogue from mouse brain. *Society for Neuroscience, 13th Annual Meetings* 9:757.
25. Zagon, I.S., S.R. Goodman, P.J. McLaughlin and L.A. Casoria, 1983. Nonerythroid spectrin-like proteins: immunocytochemical localization in mouse brain tissue. *Society for Neuroscience, 13th Annual Meetings* 9:757.
26. Goodman, S.R., I.S. Zagon, C.F. Whitfield, L.A. Casoria and P.J. McLaughlin, 1983. Nonerythroid spectrin-like proteins: phosphorylation of a spectrin analogue from mouse brain. *J. Cell. Biol.* 97:286A.

1984

27. Goodman, S.R., I.S. Zagon, L.A. Casoria and D.B. Coleman, 1984. Identification of an immunoreactive analogue of erythrocyte skeletal protein 4.1 in pig brain. *Fed. Proc.* 43:2017.
28. Wagner, G.M., M.R. Clark, S.R. Goodman and S.B. Shoheit, 1984. Spectrin-related smaller peptides in circulating red cells. *Clinical Research* 32:326A.
29. Goodman, S.R., I.S. Zagon, R.K. Sihag, L.A. Casoria and D.B. Coleman, 1984. Brain protein 4.1: Identification, structural and functional characterization, and localization within mammalian brain. *J. Cell Biol.* 99:300A.
30. Goodman, S.R., I.S. Zagon, L.A. Casoria and D.B. Coleman, 1984. Identification of an immunoreactive analogue of erythrocyte skeletal protein 4.1 in pig brain. *Society for Neurosciences 14th Annual Meeting* 10:1178.

1985

31. Goodman, S.R. and I.S. Zagon, 1985. Spectrin expression in neuroblastoma cells. *Twelfth International Anatomical Congress London, England*.
32. Goodman, S.R., I.S. Zagon, D.B. Coleman and P.J. McLaughlin, 1985. Mouse neuroblastoma cells: A model system for studying spectrin expression. *Society for Neurosciences 15th Annual Meetings* 11:1137.
33. Riederer, B.M., I.S. Zagon and S.R. Goodman, 1985. Distinct spectrin subtypes in mammalian brain. *J. Cell Biol.* 101:286a.
34. Krebs, K.E., R.K. Sihag, R. Higbee, I.S. Zagon and S.R. Goodman, 1985. Synapsin I, a species of brain protein 4.1, binds to the ends of brain spectrin tetramer. *J. Cell. Biol.* 101:287a.
35. Goodman, S.R., I.S. Zagon, D.B. Coleman and P.J. Laughlin, 1985. Neuro-blastomaspectrin. *J. Cell Biol.* 101:286a.

1986

36. Riederer, B.M., I.S. Zagon and S.R. Goodman, 1986. Differential expression of two brainspectrin subtypes during mouse brain development. *European Neuroscience Meeting, Marseille, France, Neuroscience Letters* 26:S611.

37. Goodman, S.R., I.S. Zagon, V. Bennett, G. Lynch and M. Willard, 1986. Symposium brain spectrin: structure, location, and function. Society for Neuroscience 16th Annual Meeting 12:942.
38. Krebs, K.E., I.S. Zagon and S.R. Goodman, 1986. A rapid isolation of synapsin I: a neuron specific spectrin binding protein. Society for Neuroscience 16th Annual Meeting 12:1501.
39. Riederer, B.M., I.S. Zagon and S.R. Goodman, 1986. Expression of brain spectrin subtypes during mammalian brain development. Society for Neuroscience 16th Annual Meeting 12:766.
40. Krebs, K.E., A.C. Nairn, M. Bahler, W. Schiebler, I.S. Zagon, P. Greengard and S.R. Goodman, 1986. The relationship of erythrocyte protein 4.1 to the neuron specific phosphorylation synapsin I. J. Cell Biol. 103:542a.
41. Krebs, K.E., B.K. McAvoy, I.S. Zagon and S.R. Goodman, 1986. A rapid isolation of synapsin I: a neuron specific binding protein. J. Cell Biol. 103:77a.
42. Krebs, K.E., I.S. Zagon and S.R. Goodman, 1986. Synapsin I stimulates the spectrin (240/235)/F-actin interaction in a phosphorylation dependent manner. J. Cell Biol. 103:292a.
43. Krebs, K.E., I.S. Zagon and S.R. Goodman, 1986. Amelin, a brain protein immunologically related to erythrocyte protein 4.1. J. Cell Biol. 103:543a.
44. Whitfield, C.F., E.N. Culp and S.R. Goodman, 1986. Transfer of label from protein 4.1-crosslinker complex to 4.1 membrane binding sites. J. Cell Biol. 103:542a.
45. Riederer, B.M., I.S. Zagon and S.R. Goodman, 1986. Spectrin subtype expression during mammalian brain ontogeny. J. Cell Biol. 103: 77a.
46. Zagon, I.S., B.M. Riederer, R. Higbee and S.R. Goodman, 1986. Localization of brain spectrin subtypes by immunoelectron microscopy. J. Cell Biol. 103:540a.

1987

47. Riederer, B.M., L.L. Lopresti, K.E. Krebs, I.S. Zagon and S.R. Goodman, 1987. Brain spectrin (240/235) and brain spectrin (240/235E): conservation of structure and location within mammalian neural tissue. J. Cell Biol. 105:316a.
48. Krebs, K.E., S.M. Prouty, N.L. Wagner, I.S. Zagon and S.R. Goodman, 1987. The interaction of brain spectrin (240/235) with synaptic vesicles. J. Cell Biol. 105:38a.
49. Laurilla, P., L. Cioe, P. Meo, K. Krebs, S.R. Goodman and P.J. Curtis, 1987. Cloning, sequencing, tissue expression and chromosomal mapping of a mouse erythrocyte β -spectrin cDNA. J. Cell Biol. 105:37a.
50. McLaughlin, P.J., I.S. Zagon and S.R. Goodman, 1987. Endogenous opioid systems in diverse human and animal tumors. Fed. Proc. 46:953.
51. Zagon, I.S., S.R. Goodman and P.J. McLaughlin, 1987. Human and animal tumors exhibit endogenous opioids and opioid receptors. Anat. Rec. 218:152A.

1988

52. Lopresti, L.L., B.M. Riederer, I.S. Zagon, L.A. Casoria and S.R. Goodman, 1988. Brain spectrin (240/235A): a novel astrocyte specific spectrin isoform. J. Neurosci. 14:290.
53. Zagon, I.S., S.R. Goodman and P.J. McLaughlin, 1988. Zeta (ζ): a new opioid receptor related to growth. J. Cell Biol. 107:301a.
54. Karinch, A.M. and S.R. Goodman, 1988. Identification and isolation of an actin-binding domain of spectrin. J. Cell Biol. 107:468a.
55. Zagon, I.S., S.R. Goodman and P.J. McLaughlin, 1988. Zeta (ζ): a new opioid receptor related to growth. Soc. Neurosci. Abstract 14:15.

1989

56. Riederer, B.M., L.L. Lopresti, I.S. Zagon and S.R. Goodman, 1989. Novel brain spectrin's identification by monoclonal antibodies. *European J. Neurosci. Suppl.*:144.
57. Zagon, I.S., S.R. Goodman and P.J. McLaughlin, 1989. Identification and characterization of the zeta (ζ) opioid receptor in neuroblastoma cells in culture. *Soc. Neurosci. Abstract* 15:346.
58. Goodman, S.R. and I.S. Zagon, 1989. Absence of brain spectrin (240/235) in dendrites of mammalian brain. *Soc. Neurosci. Abstract* 15:892.
59. Riederer, B.M. and S.R. Goodman, 1989. Brain Spectrin-Microtubule Interaction. *European Neuroscience Association, 12th Annual Meeting*.

1990

60. Ma, Y., W.E. Zimmer and S.R. Goodman, 1990. Cloning and Nucleotide Sequence of Mouse Brain β -Spectrin cDNA. *The Journal of the Alabama Academy of Science* 61:202.
61. Sikorski, A.F., I.S. Zagon and S.R. Goodman, 1990. Brain Spectrin Interacts with Small Synaptic Vesicles. *The Journal of the Alabama Academy of Science* 61:212.
62. Ma, Y., W.E. Zimmer and S.R. Goodman, 1990. Cloning and Nucleotide Sequence of Mouse Brain β -Spectrin cDNA. *J. Cellular Biochem.* 14F:28.
63. Sikorski, A.F., I.S. Zagon and S.R. Goodman, 1990. Brain Spectrin Interacts with Small Synaptic Vesicles. *J. Cellular Biochem.* 14F:12.
64. Goodman, S.R., 1990. Development of the Neural Spectrin Membrane Skeleton. *J. Cellular Biochem.* 14F:76.
65. Sikorski, A.F. and S.R. Goodman, 1990. The Interaction of Spectrin with Synaptic Vesicles. *Biophys. Memb. Transport* 10:51.
66. Goodman, S.R., 1990. Brain Spectrin: Structure and Function. *First World Congress of Biomechanics Vol. II*:286.
67. Zimmer, W.E., C.A. Melton, Y. Ma, I.S. Zagon and S.R. Goodman, 1990. Differential Regulation of α and β Spectrin mRNA's during Mouse Brain Development. *J. Cell Biol.* 111:505a.
68. Ma, Y., W.E. Zimmer and S.R. Goodman, 1990. Cloning and Sequencing of cDNAs encoding a Mouse Brain β -spectrin. *J. Cell Biol.* 111:47a.

1991

69. Zagon, I.S., S.R. Goodman, G. Allison and P.J. McLaughlin, 1991. Isolation and Identification of the Zeta (ζ) Receptor Binding Site. *Soc. Neurosci.* 17:361.
70. Zimmer, W.E., L.A. Casoria, I.S. Zagon and S.R. Goodman, 1991. Brain Tissue Contains Two Isoforms of the Spectrin Binding Protein Amelin. *Soc. Neurosci.* 17:378.
71. Isayama, T., S.R. Goodman and I.S. Zagon, 1991. Immunolocalization and Characterization of Spectrin (240/235) and (240/235) in the Mouse Visual System. *Soc. Neurosci.* 17:1564.
72. Zimmer, W.E. and S.R. Goodman, 1991. Expression of the Actin Binding Domain of Human Erythrocyte Spectrin. *Am. Soc. Cell Biol.* 115:42a.
73. Yang, Y.-M., C. Donnell, W. Wilborn, S.R. Goodman, B. Files, R.B. Moore, N. Mohandas and V. Mankad, 1991. Splenic Sequestration Associated with Sick Cell Trait and Hereditary Spherocytosis. *Am. Soc. Hematology 33rd Annual Meeting* 78:93a.

1992

74. Warren, J.C., G.L. Murdock, S.R. Goodman and W.E. Zimmer, 1992. Molecular Cloning of Testicular 20 α -Hydroxysteroid Dehydrogenase. *Society Gynecologic Investigation* 215.
75. Wilson, G.L. and S.R. Goodman, 1992. Spectrin in Pancreatic Beta Cells. *Diabetes* 41:148a.
76. Ma, Y., W.E. Zimmer, B.M. Riederer and S.R. Goodman, 1992. Primary Structure of β Spectrin (β Fodrin): Relationship to Globin Sequences. *Alabama Academy of Science Sixty-Ninth Annual Meeting* 63:67.
77. Ma, Y., W.E. Zimmer, B.M. Riederer and S.R. Goodman, 1992. The Complete Sequence for Brain β -Spectrin Indicates a Relationship with Heme Binding Proteins (Globins). *Soc. Neurosci.* 18:69.
78. Ma, Y., W.E. Zimmer, B.M. Riederer and S.R. Goodman, 1992. The Complete Amino Acid Sequence of Nonerythroid β Spectrin (β Fodrin): Indication of a Heme Binding Domain. *Mol. Biol. Of the Cell* 3:264a.

1993

79. Clark, M.B. and S.R. Goodman, 1993. Neuronal Compartmentalization Demonstrates Distinct α Subunits of Brain Spectrin Isoforms. *Mol. Biol. of the Cell* 4:172a.
80. Ma, Y., M.B. Clark, M.L. Bloom, J.E. Barker, I.S. Zagon, W.E. Zimmer and S.R. Goodman, 1993. Neuronal Compartmentalization of Brain β Spectrin Isoforms. *Mol. Biol. of the Cell* 4:172a.
81. Shartava, A., A. Bencsath, L.A. Casoria-Scott, C.A. Monteiro and S.R. Goodman, 1993. A Posttranslational Modification of β -Actin Causes the Locked Membrane Skeleton of the Irreversibly Sickled Cell. *Blood* 82:179a.

1994

82. Shartava, A., C.A. Monteiro, A. Bencsath, L.A. Casoria-Scott and S.R. Goodman, 1994. The Molecular Basis of the Locked ISC Membrane Skeleton. 19th Meeting of the National Sickle Cell Program.
83. Bencsath, F.A., A. Shartava, C.A. Monteiro, L.A. Casoria-Scott, B.T. Chait, K. Schneider and S.R. Goodman, 1994. The Position of the Disulfide Bridge in Membrane-Actin that Locks Red Blood Cells into a Sickled Shape. *Am. Society for Mass Spectrometry 42nd Annual Meeting*, Abstract #175.
84. Shartava, A., P. Miranda, A. Shah, C.A. Monteiro and S.R. Goodman, 1994. Slow Dissociation Rates of Membrane Skeletons from High Density Sickle Cells during Extraction in High Salt Triton Buffer. *Blood* 84:404a.
85. Campbell, N.F., W. Korn, A. Shartava and S.R. Goodman, 1994. Inhibition of the In Vitro Formation of Irreversibly Sickled Cells Using Dithiothreitol. *Blood* 84:404a.

1995

86. Goodman, S.R., N.F. Campbell, A. Shartava and W. Korn, 1995. Formation of Irreversibly Sickled Cells Can Be Blocked By A Membrane Permeable Reducing Agent. 20th Meeting of the National Sickle Cell Programs Meeting, Abstract #26.
87. Schwartz, R.S., A. Shartava, S. Musto, R.L Nagel and S.R. Goodman, 1995. Slow Dissociation Rates of Membrane Cytoskeletons From Hydrated Irreversibly Sickled Cells. 20th Meeting of the National Sickle Cell Programs Meeting, Abstract #60.
88. Bencsath, F.A., A. Shartava, C.A. Monteiro and S.R. Goodman, 1995. Synthesis of Disulfide Linked β -Actin Peptides. *Am. Society for Mass Spectrometry & Allied Topics 43rd Annual Meeting*, Pg. 1273.
89. Goodman, S.R., F.A. Bencsath, C.A. Monteiro and A. Shartava, 1995. Membrane Skeleton Defects Leading to the Irreversibly Sickled Cell. *Cell & Molecular Biol. Letters* Vol. 1 (1995).
90. Clark, M.B., S.D. Critz and S.R. Goodman, 1995. Erythroid and Nonerythroid Spectrin in Rat Hippocampal Neurons in Cell Culture. *Mol. Biol. of the Cell* 6:372a.

1996

91. Shartava, A., W. Korn and S.R. Goodman, 1996. In vitro Study of Actin Polymerization and Binding to Spectrin: Comparison of ISC and Control β -Actins. 21st Meeting of the National Sickle Cell Programs Meeting. Abstract #P50.
92. Gibson, X.A., Y. Zhang and S.R. Goodman, 1996. Blocking the Formation of Irreversibly Sickled Cells with N-acetyl Cysteine. 21st Meeting of the National Sickle Cell Programs Meeting. Abstract #P49.
93. Bencsath, F.C., A. Shartava, C.A. Monteiro, B.A. Baggenstross and S.R. Goodman, 1996. Identification of the Disulfide-linked Peptide in the Irreversibly Sickled Cell β -Actin. 21st Annual Meeting of National Sickle Cell Programs Meeting. Abstract #043.
94. Goodman, S.R., 1996. The Role of the Membrane Skeleton in Formation of the Irreversibly Sickled Cell. 21st Annual Meeting of the National Sickle Cell Programs Meetings. Abstract #02.
95. Goodman, S.R., 1996. The Making and Breaking of Irreversibly Sickled Cell. 25th Annual Meeting of the International Society for Experimental Hematology Abstract #713.

1997

96. Monteiro, C.A., X. Gibson, A. Shartava and S.R. Goodman, 1997. A Structural Defect in Sickle Cell α Spectrin. 25th National Sickle Cell Programs Meeting 313:256a.
97. Miller, M.E., S.R. Goodman, A. Davis and S.H. Goldstein, 1997. Purification and Characterization of a 240KD Rat Brain Protein and Its Relationship to Brain Myosin II and Brain Spectrin. Soc. Neurosci. 1465:578.6a.
98. Pace, B.S., C. Monteiro and S.R. Goodman, 1997. Butyrate downregulates nuclear protein binding to inducible elements in the upstream γ -gene promoter. Blood Vol 90 (10) Part I, 444a:1969.
99. Wang, G., X. Xu, B.S. Pace and S.R. Goodman, 1997. Induction of human γ -globin gene expression via peptide nucleic acids (PNAs). Blood, Vol 90 (10) Part 2, 419b:4637.

1998

100. Critz, S.D., A.F. Sikorski, J. Sangerman and S.R. Goodman, 1998. Nonerythroid Spectrin-Specific Antibody Inhibits Synaptic Transmission in Hippocampal Neurons. Soc. Neurosci. Vol 24 (2) 1568:619.6a.
101. Goodman, S., 1998. The Spectrin Membrane Skeleton: A Key Element in Sickle Cell Disease. Cell. Molecular Biol. Letters Vol 3 (2), pg. 168.
102. Shartava, A., A.K. Shah and S.R. Goodman, 1998. N-acetylcysteine and Clotrimazole Inhibit Sickle Erythrocyte Dehydration Induced by 1-Chloro-2, 4-Dinitrobenzene. 23rd Annual Meeting of National Sickle Cell Programs Meeting pg. 46.
103. Sangerman, J., A. Brown, A. Shartava, D. Kakhniashvili and S.R. Goodman, 1998. α -Spectrin Contains a Covalently Linked Ubiquitin-Like Protein Which is Vastly Diminished in Sickle Cell α -Spectrin. 23rd Annual Meeting of National Sickle Cell Programs Meeting pg. 42.

1999

104. Sangerman, J., A. Shah and S.R. Goodman, 1999. Synthesis, Assembly, and Turnover of α and β -Erythroid and Nonerythroid Spectrins in Rat Hippocampal Neurons. Soc. Neurosci. Vol 25 (1) 995:400.2.

2000

105. Wu, S., G. Brough, J. Creighton, M. El-Menshawi, S. Goodman and T. Stevens, 2000. Disruption of F-Actin Binding to Non-Erythroid Spectrin Induces Focal Inter-Endothelial Cell Gaps. FASEB J. 14 (4):A694.
106. Wu, S., S. Goodman and T. Stevens, 2000. Non-Erythroid Spectrin Physically Links Calcium Store Depletion to Activation of Calcium Entry in Endothelial Cells. FASEB J. 14(4):A411.
107. Shartava, A., X. Gibson, J. McIntyre, A. Shah and S.R. Goodman, 2000. NAC Blocks Dense Cell and ISC Formation In Vitro by Protecting the Gardos Channel and β -actin from Oxidative Damage. 24th Annual Meeting of the National Sickle Cell Program Abstract #18a.

108. Abraham, A., A. Bencsath, A. Shartava, D. Kakhniashvili and S.R. Goodman, 2000. Preparation of irreversibly sickled cell β -actin from normal red blood cell β -actin verified by liquid chromatography and off-line mass spectrometry. Proceedings of the 48th ASMS Conference pg. 58.

2001

109. Cioffi, D., M. Zhu, S.R. Goodman and T. Stevens, 2001. Association of Trp-1 and -4 Store Operated Ca^{2+} Entry Channels With The Spectrin Membrane Skeleton In Endothelium. FASABJ 15:A161.
110. Goodman, S.R., D.G. Kakhniashvili, J. Sangerman, T. Chaudhary, W.E. Zimmer, F.A. Bencsath and I. Jardine, 2001. Erythrocyte spectrin is an E2 ubiquitin conjugating enzyme that is blocked in sickle cells. 25th Annual Meeting of the National Sickle Cell Program Abstract #86.
111. Goodman, S.R., D.G. Kakhniashvili, J. Sangerman, T. Chaudhary, W.E. Zimmer, F.A. Bencsath and I. Jardine, 2001. Erythrocyte Spectrin is an E2 Ubiquitin Conjugating Enzyme. Cell Mol. Biol. Lett. 6:205, 210.

2002

112. Chang, T.L. and S.R. Goodman, 2002. Identification of Target Proteins for AA Spectrin E2/E3 Ubiquitin Conjugating/Ligating Activities. 30th Anniversary Convention of the National Sickle Cell Disease Program Abstract #194.

2004

113. Riahi, M.H. and S.R. Goodman, 2004. Ubiquitination of Spectrin Does Not Effect Heterodimer Formation. National Sickle Cell Center Disease Program, #121.
114. Mishra, R. and S.R. Goodman, 2004. Ubiquitination of Erythrocyte Spectrin Regulates the Dissociation of the Spectrin-Adducin-Actin Ternary Complex In Vitro. National Sickle Cell Disease Program, #120.
115. Ghatpande, S.S. and S.R. Goodman, 2004. Ubiquitination of Spectrin Regulates the Erythrocyte Spectrin-4.1-Actin Ternary Complex Dissociation: Implications for the Sickle Cell Membrane Skeleton. National Sickle Cell Disease Program, #71.
116. Chang, T.L., F.F. Cubillos, D.G. Kakhniashvili and S.R. Goodman, 2004. Ubiquitination of Targets of Spectrin's E2/E3 Activity is Diminished in Sickle Cells. National Sickle Cell Disease Program, #119.
117. Kakhniashvili, D.G., L.A. Bulla and S.R. Goodman, 2004. The Human Erythrocyte Proteome: Analysis by Ion Trap Mass Spectrometry. National Sickle Cell Center Disease Program, #100.
118. Hsu, J., W.E. Zimmer and S.R. Goodman, 2004. A Recombinant α Spectrin Peptide Containing Repeat α 20 to the C-Terminus Contains E2/E3 Ubiquitin Conjugating/Ligating Activity and Ubiquitin Target Site(s). National Sickle Cell Disease Program #122.
119. Goodman, S.R., 2004. The Human Erythrocyte Proteome. Emerging Pathways in Cytoskeletal Communication Meeting, Umea, Sweden pg. 17.
120. Cioffi, D.L., M. Alexeyev, S. Wu, M.X. Zhu, S.R. Goodman and T. Stevens, 2004. Protein 4.1 gates the TRPC4-dependent endothelial ISOC channel. AHA Grover Conference, Sep 9-12, 2004.
121. Blake, C.A., D.G. Kakhniashvili and S.R. Goodman, 2004. Analysis of the Hamster Anterior Pituitary Gland Proteome. The FASEB Journal 18:A680.

2005

122. Hsu, Y.J. and S.R. Goodman, 2005. Erythrocyte Spectrin is a Chimeric E2/E3 Ubiquitin Conjugating/Ligating Enzyme and the Impact of this Activity on Sickle Cell Disease. National Sickle Cell Disease Program pg. 136.
123. Kakhniashvili, D.G., N.B. Griko, L.E. Bulla Jr. and S.R. Goodman, 2005. Proteomic Analysis of Changes in Normal Versus Sickle Red Blood Cell Membrane Proteins. National Sickle Cell Disease Program pg. 129.

124. Cioffi, D.L., M. Alexeyev, S. Wu, M.X. Zhu, S.R. Goodman and T. Steven, 2005. The Endothelial I_{SO}C Channel is Gated by Interaction of Protein 4.1 with TRPC4. The FASEB Journal A694.2.

2006

125. Hryniewicz-Jankowska, A., P.K. Choudhary and S.R. Goodman, 2006. Sick Cell Disease: Protein Profiling of Monocytes by 2D DIGE. National Sick Cell Disease Program abstract 22.
126. Neelam, S.N., D.G. Kakhniashvili and S.R. Goodman, 2006. The Discovery of Proteasomal Subunits in Human Erythrocytes: Relationship to Sick Cell Disease. National Sick Cell Disease program. Abstract 42.
127. Prasain, N., S. Wu, S.R. Goodman and T. Stevens, 2006. Disruption of spectrin-f-actin binding is sufficient to induce inter-endothelial gaps. University of South Alabama and University of Texas at Dallas. Experimental Biology Meeting #469.21.
128. Goodman, S.R., 2006. Spectrin is a chimeric E2/E3 ubiquitin conjugating/ligating enzyme. University of Texas at Dallas. Experimental Biology Meeting #563.4.

2007

129. Ghatpande, S. and S.R. Goodman, 2007. Protein Modifications of the Sick Cell RBC Membrane Caused by Hydroxyurea Treatment. Sick Cell Disease Program Abstract 149.
130. Kakhniashvili, D.G., K.M.H. Hughes, S. Neelam and S.R. Goodman, 2007. The Isolation of Reticulocyte Free Human Red Blood Cells For The Proteomic Study of Sick Cell Disease. Sick Cell Disease Program Abstract 155.

2008

131. Goodman, S.R., 2008. Signatures of Sick Cell Severity: A Proteomic Approach. PIBM Abstract 6-9, pg. 29.

2012

132. Gibson, T.M, Kakhniashvili, D.G and S.R. Goodman, 2012 Purification of Human T-cell Leukemia Virus Type 1 for Mass Spectrometry Analysis, ASCB Meeting abstract submitted.
133. Goodman, S.R. 2012. The Proteomics and Interactomics of Sick Cell Disease, International symposium on Infectious Diseases and Signal Transduction. Page 5.

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