

CURRICULUM VITAE: IRVING KUSHNER

e-mail: ixk2@case.edu

I. Education and Training

1946 Graduated, Bronx High School of Science
1950 B.A., with honors, Columbia College, Columbia University, New York
1954 M.D., cum laude, Washington University School of Medicine, St. Louis, Missouri
1954-55 Intern in Medicine, Grace - New Haven (Yale) Community Hospital, New Haven, Connecticut
1955-57 Clinical Associate, Laboratory of Clinical Investigation, NIAID, NIH, USPHS, Bethesda, Maryland
1957-58 Assistant Resident, 2nd and 4th (Harvard) Medical Services, Boston City Hospital, Boston, Massachusetts
1958-59 Public Health Service Research Fellow of the National Institutes of Allergy and Infectious Diseases (Cleveland Metropolitan General Hospital)
1959-62 Research Fellow of the Helen Hay Whitney Foundation (Cleveland Metropolitan General Hospital)
1960-61 Assistant Resident in Medicine, Cleveland Metropolitan General Hosp., Cleveland, OH
1962-63 Fellow, Laboratoire d'Immunochimie, Institut de Recherches Scientifiques sur le Cancer, Centre National de Recherche Scientifique, Villejuif, (Seine) France
1976 Senior International Fellow of the Fogarty International Center of the NIH, (Unité de Recherches de Physiopathologie Hépatique, INSERM U 24, Hôpital Beaujon, Clichy (Seine), France) June-September

II. Academic & Professional Appointments

(Appointments between 1958 and 1973 at Western Reserve and Case Western Reserve University)

1958-59 Demonstrator in Medicine
1959-61 Instructor in Medicine
1961-64 Senior Instructor in Medicine
1963-73 Director, Arthritis Clinic, Cleveland Metropolitan General Hospital
1964-69 Assistant Professor of Medicine
1969-73 Associate Professor of Medicine
1973-74 Professor of Medicine; Chairman, Division of Rheumatology, West Virginia University
1974-2010 Professor of Medicine, Case Western Reserve University
1974-85 Director, Division of Rheumatology, Cleveland Metropolitan General Hospital
1974-89 Associate Director, Department of Medicine, Cleveland Metropolitan General Hospital
1985-2010 Professor of Pathology, Case Western Reserve University
1985-91 Medical Director, Highland View Rehabilitation Center
1994-97 Acting Director, Division of Rheumatology, MetroHealth Medical Center
2010- Professor Emeritus of Medicine, Case Western Reserve University

III. Committees & Administrative Responsibilities

A. MetroHealth Medical Center (formerly Cleveland Metropolitan General/Highland View Hospital)

1966-73 Coordinator of Chronic Illness
1966-69 Utilization Committee
1974-75 Utilization Committee (departmental committee chairman)
1960-67 Infection Committee (chairman 1966-67)
1969-71 Agenda and Program Committee, Medical Staff (chairman)
1970-73 Transplantation Committee (chairman)
1972-73 Master Planning Committee, Program for Consolidation of the County Hospitals
1977-78 Committee to Plan Transfer of Highland View Professional Programs to

	West Side Campus (chairman)
1974-83	Numerous departmental ad hoc committees (chairman)
1980-81	President, Medical Staff
1980-85	Governing Board, Professional Staff Plan, Department of Medicine
1985	Search Committee, Director, Dept. of Physical Medicine and Rehabilitation
1986-88	Special Advisory Committee to the President
1989-93	Department of Medicine Executive Committee
1990-91	Search Committee, Department of Medicine, Director of Geriatrics (cochairman)
1990	Task Force, Human Investigation Committee
1991-93	Research Committee

B. Case Western Reserve University School of Medicine

1970-73	Ad hoc Committee to rewrite the by-laws of the Medical School
1971-73	Educational Counselor - senior medical students
1974-75	Options Committee - Department of Medicine
1975-76	Committee on Biomedical Sciences
1974-85	Ecker Lecture Committee, Lectureships Committee
1975-80	Dean's Committee on the VA Hospital
1976-80	Search Committee, Chairman Department of Psychiatry, CMGH
1976-78	Executive Committee for Extramural Medical Education, Department of Medicine
1979-80	Search Committee, Director, Department of Medicine, Cleveland VA Medical Center (chairman)
1980-82	Committee on Continuing Medical Education
1982-84	Committee on Faculty Appointment, Promotion and Tenure
1978-2000	Associate Director, Northeastern Ohio Multipurpose Arthritis Center
1981-86	Student Counselor
1984	Committee to consider whether rehabilitation medicine should be established as an academic department (chairman)
1985-88	Rehabilitation Medicine Committee (chairman)
1988-91	NIDRR Rehabilitation Engineering Center; University Advisory Committee
1989	Search Committee, Chairman, Department of Orthopaedics, CWRU; Director Department of Orthopaedics, University Hospitals
1990	Biomedical Research Support Grant Committee
1990	Immunology - Allergy Research Task Force
1990-92	Community Advisory Board - University Center on Aging and Health
1992-93	Search Committee, Director, Department of Medicine, MHMC

IV. Study Sections and Advisory Committees

A. NIH Study Sections and Site Visit Teams

1. Special study sections

- a. June 23, 1987 - Outside reviewer, NIH Pathobiological Chemistry Study Section
- b. March 31, 1988 - NIAMDD: (chairman of site visit team), Boston University
- c. July 27-28, 1988 - NIAMDD: (chairman of site visit team), Program Project, Massachusetts General Hospital
- d. Oct. 11-12, 1990 - Special reviewer, Grant review - NIH Medical Biochemistry Study Section
- e. July 13-15, 1992 - NIAMSD: (chairman of site visit team), University of California at San Diego
- f. July 16, 1993 - Outside reviewer, NIAMSD, Causal mechanisms in SLE - special study section for RFA.
- g. Nov. 29, 1993 - NIAMSD, chairman, review group, program project (UCSD)
- h. July 28, 1994 - NIAMSD, chairman, special review group for RFA-Fibromyalgia grants

2. Multipurpose Arthritis Center site visits
 - a. March 1980: University of Alabama in Birmingham
 - b. June 1985: SUNY Downstate, Brooklyn, N.Y.
 - c. June 1986: University of Alabama in Birmingham (chairman)
 - d. July 1991: Northwestern University, Chicago, IL (chairman)

- B. The Arthritis Foundation (National)
 - Committee on Public Education 1974-82 (vice-chairman 1976-80)
 - Review Panel for Medical and Scientific Materials (chairman) 1978-81
 - Public Relations Committee 1981-82
 - House of Delegates 1982, 1984
 - Center Grant Subcommittee of the Research Committee 1984-1987
 - Patient and Community Services, National Subcommittee 1993-2000
 - Committee on Educational Monograph and Videotape 1994-1995

- C. Ohio Department of Health, Arthritis Care and Education Program
 - Advisory Committee 1981-1991

- D. Arthritis Foundation, Northeastern Ohio Chapter
 - Medical Advisory Committee 1966-73, 1974-88 (chairman 1979-1983), 1989-1993
 - Board of Trustees 1974-87, 1989-1991
 - Research Grants Review Committee (chairman) 1976
 - Vice President 1977-80, 1986
 - Project Director for Northeast Ohio Arthritis Care and Education Program, State of Ohio Department of Health 1981-85

- E. Ohio Lupus Foundation, Inc.
 - Medical Advisory Board 1978-87 (chairman 1978-79)

- F. Advisory Panels
 1. McNeil Pharmaceutical, "Current Advances in Inflammation and Arthritis" - Pittsburgh, PA - November 17-18, 1989
 2. Upjohn Company, Symposium: "The Effects of Flurbiprofen on the Immune Response"- Sonoma, CA - September 15, 1990
 3. Pfizer Inc., Central Research Advisory Board "Tenidap and Acute Phase Proteins"- Seattle, WA - October 28, 1990; April 30, 1993
 4. University of Texas, Southwestern Medical Center, Dallas -Steering committee for the development of the arthritic care algorithm- June-Oct, 1995
 5. Merck and Co., National Consultant "The Management of Arthritis and Pain" - Denver, CO - October 16-18, 1998

- G. Ph.D. Dissertation Defense - reviewer
 1. The Rockefeller University, Office of Graduate Studies - March 9, 1988
 2. State University of New York at Buffalo, Roswell Park Graduate Division - April 9, 1991

- H. Graduate Students Pre-thesis Committee and Co-Advisor

1991-1995	Dongxiao Zhang, Dept. of Biochemistry, CWRU
1993-1998	Christine Hilbert, Dept. of Biochemistry, CWRU
1995-1998	Ming Sun, Dept. of Biochemistry, CWRU
1997-2002	Hyunjoo Cha, Dept. of Biochemistry, CWRU
1998-2005	Steven Black, Dept. of Biochemistry, CWRU
2002-2008	Duprane Young, Dept. of Biochemistry, CWRU

I. Boards of Trustees and Visiting Committees

1. The Harold E. Brittingham Memorial Library, Board of Trustees – 2000- 2009
2. Cleveland Health Sciences Library, visiting committee - 2000-2009
3. Cleveland Medical Library Association, Board of Trustees – 2000 - ; Secretary/
Treasurer, 2005-2006; Vice President, 2006-2007, President, 2007-2009.
4. The Print Club of Cleveland, Board of Trustees - 2001-2007

V. Specialty Board Certification

Board of Internal Medicine - November 22, 1963

American Board of Rheumatology - October 19, 1976

VI. Professional Societies

American Association for the Advancement of Science

American Association of Immunologists

American College of Physicians (Fellow-1969)

American Federation for Clinical Research

American College of Rheumatology (formerly American Rheumatism Association)

1980 President, Central Region

1982-87 Affiliated Local Societies Committee

1985, 1987 Subsection Chairperson, Program Committee

American Society for Investigative Pathology

Central Society for Clinical Research

Cleveland Rheumatism Society (President 1969-70)

Gerontological Society of America

Groupe d'Etude et de Recherche sur les Marqueurs de l'Inflammation, Lyon, France (President

1985-1990)

Society for Experimental Biology and Medicine

The New York Academy of Sciences

International Cytokine Society

Society for Investigative Pathology

VII. Honors & Awards

phi beta kappa 1950

alpha omega omega 1954

Research Fellow of the Helen Hay Whitney Foundation, 1959-62

National Volunteer Award, The Arthritis Foundation, 1982

Listed, American Men and Women of Science, 12th Edition, 1972 to present

Listed, Who's Who in Frontier Science and Technology, First Edition, 1984 to present

Listed, Dictionary of International Biography, Volume XIX, 1985

Listed, Who's Who in the Midwest, 1985

Listed, Contemporary Authors, 1986

Listed, Who's Who in American Education – 1992-93

Author of Citation Classic cited in Current Contents, July 13, 1992 and April 19, 1993

Master, American College of Rheumatology, 1995

MetroHealth Department of Medicine

Teaching Excellence Award. 2004, 2006,

Teaching Excellence Career Achievement Award, 2007

Annals of Internal Medicine – among the best reviewers 2007, 2008.

VIII. Ad Hoc Reviewer

A. Ad Hoc Reviewer for Journals: (since 1976)

1976	Ann Int Med		
1977	J Lab Clin Med	Am Rev Resp Dis	
1978	J Lab Clin Med		
1979	Am Rev Resp Dis	Ann Int Med	J Lab Clin Med
	J Rheumatol x 2	Arth & Rheum x 2	
1980	Am Heart J	JAMA	Arth & Rheum
1981	J Immunol x 4	J Rheumatol	Proc Natl Acad Sci
	Arth & Rheum x 3	Ann Int Med	
1982	Arth & Rheum	J Immunol	Immunol Commun
	Ann Int Med	J Lab Clin Med	
1983	Science	J Lab Clin Med	J Cell Biol x 2
	J Clin Investig	Hepatology	
1984	NEJM	Clin Exp Rheum	Arth & Rheum x 3
	Inflammation	Proc Soc Exp Biol & Med	Nucl Acid Res
1985	Arth & Rheum x 5	Brain Res Bull	Clin Exp Rheum x 4
	J Clin Investig	J Rheumatol	
1986	Clin Exp Rheum x 4	Arth & Rheum x 4	Science
	Proc Soc Exp Biol Med	J Rheumatol	
1987	J Rheumatol x 2	J Immunol x 2	Clin Exp Rheum x 3
	Proc Natl Acad Sci	J Lab Clin Med	Arth & Rheum
1988	J Clin Investig x 2	Proc Natl Acad Sci	Clin Exp Rheum x 3
	J Rheumatol x 2	Proc Soc Exp Biol Med	J Lipid Res
	Cleve Clin J Med	NEJM	J Immunol
1989	J Lab Clin Med x 3	J Biol Chem	J Immunol x 6
	J Rheumatol	Clin Exp Rheum x 6	J Leuk Biol
	Intl J Psych Med	Arth & Rheum	
1990	Clin Exp Rheum x 3	Proc Soc Exp Biol Med	J Lab Clin Med x 4
	Arth & Rheum x 2	J Rheumatol	Scand J Rheum
	Biochem Biophys Acta	J Clin Investig	
1991	J Lab Clin Med x 3	J Rheumatol x 2	Clin Exp Rheum x 2
	J Immunol x 2	Hepatology	Am J Physiol
	Biochemistry	Ann Int Med	J Clin Investig
	Proc Natl Acad Sci		
1992	Clin Exp Rheum x 2	Arth & Rheum	Cytokine
	Perspectives in Biol and Med	J Clin Investig	New York Academy of Sciences
	Scand J Rheumatol	J Immunol x 2	
1993	Ann Int Med	Intl. Immunopath & Pharm x2	Arthritis Rheum
	J Biol Chem	J Rheumatol	Clin Immunol & Immunopath
	J Clin Investig x2	Hepatology	J Inf Dis
	J Immunol x2	Clin Exp Rheumat	
1994	Amyloid	Clin Exp Rheumatol x 3	Glycosylation & disease
	Int'l J of Biochem	Immunology Today	J of Gerontology
	J Immunol	Immunopharmacology	NEJM
	J Rheumatol		
1995	Clin Exp Rheumatol x3	Human Molecular Genetics	J Rheumatol x 2
	Arthritis Rheum x 2	Ann Int Med	J Imm
	Blood		
1996	J Rheumatol	J Immunol x 2	Proc Soc Biol Med
	Archives Int Med	Clin Exp Rheumatol x 2	J Clin Invest
	Arthritis Rheum x 2	Lipid	J Clin Rheumat
1997	Clin Exp Rheumatol x 2	Immunology Today	Comp Biochem Physiol
	Cytokine	Arch Int Med	J Immunol x 2
	J Clin Investig		
1998	J Rheumatol x 2	Arth & Rheum x 2	Amyloid
	Scand J Rheumatol	J Lipid Res	BBA
	J Immunol	J Leuk Biol	J Exp Med
1999	Life Sciences	J Leuk Biol	J Immunol x 2

2000	J Rheumatol x 2 Clin Exp Rheum x 3 Molecular Med Today Cleveland Clinic J Med	J Rheumatol J Nutrition	Ann of the Rheum Dis JAMA
2001	J Immunol x 2 J Rheum x 2	Diabetology	J Clin Invest
2002	J Rheum Ann Int Med J Biol Chem	J Immunol x 2 Arthritis Research x 2	Clin Immunol Rev Arth & Rheum
2003	JAMA x 2 Brit J Cancer	J Immunol x 2 Arth & Rheum	Human Reproduction
2004	J Immunol x 2 Arch Int Med Annals Int Med	Arth & Rheum British J Cancer	NEJM Endocrinology
2005	J Immunol x 2 Ann Rheumat Dis	JCEM Eur J Imm	Kidney International Am J Med Sci
2006	Europ Cytokine Network J Rheum	Circulation J Clin Rheum	J Immunol JAMA
2007	Ann Int Med Arth Care & Research	J Biol Chem J Psychosomatic Research	J Imm
2008	Ann Int Med J Proteome Res Medical Letter	J Rheumat Expt Rev Clin Immunol	J Leuk Biol J Imm
2009	NEJM Ann Int Med Stress	J Hosp Med J Immunol Arth Care & Research	Tohoku J Exp Med Medical letter
2010	Biology Direct	Expert Review of Cardiovascular Therapy:	

B. Ad Hoc Reviewer for Foundations and other organizations

The Medical Research Council of Canada
The Wolfson Foundation
U.S.- Israel Binational Science Foundation
American Heart Association, Ohio Affiliate, & Kidney Foundation of Ohio
Research Grant Reviews - 1968-73
Scleroderma Foundation - Grant Review - 1990
New York Academy of Sciences - 1988, 1989, 1992, 1993, 1994, 1995
International Science Foundation - 1994
Department of Veteran's Affairs, medical research services - 1995, 1996
International Human Frontier Science Program - 1995, 1996, 1997
Arthritis and Rheumatism Council (UK) - 1997
Austrian Science Fund - 1997
Medical Research Council (UK) – 1998, 1999
National Science Foundation - 2000
21st Century Research and Technology Fund, State of Indiana - 2001
Research Grants Council of Hong Kong - 2002
Harvard Medical School, ad hoc evaluation committee - 2002
The Wellcome Trust - 2001, 2004

C. Expert consultant

NetWellness.com. 2006- 2008

IX. Editorial Boards

1984-1997 Clinical and Experimental Rheumatology
1987-1992 Postgraduate Advances in Rheumatology
1991- International Journal of Immunopathology & Pharmacology
1993-2002 Amyloid. A journal of experimental and clinical investigation

(member of founding editorial board)
2002- European Journal of Inflammation

X. Conference Organizer and Co-Chairman

Conference on C-Reactive Protein and the Plasma Protein Response to Tissue Injury,
Sept. 21-23, 1981, The New York Academy of Sciences, New York

XI. Invited Lectures and Visiting Professorships

October 1976	Rush Medical College, Chicago, IL
October 20-21, 1977	University of Alabama in Birmingham, Birmingham, AL
October 28, 1977	Northeastern Ohio College of Medicine, Akron, OH
November 3, 1977	Brown University, Providence, RI
November 13, 1977	SUNY, Syracuse, NY
January 26, 1978	University of South. Florida, Tampa, FL
March 29, 1978	Hospital for Special Surgery, New York, NY
November 20, 1978	Damascus University Medical School, Damascus, Syria
April 2, 1979	Washington University, St. Louis, MO
April 3, 1979	St. Louis University, St. Louis, MO
January 9, 1980	Northeastern Ohio College of Medicine, Akron, OH
March 13, 1980	Albert Einstein College of Medicine, New York, NY
March 14, 1980	Seminar in Advanced Rheumatology, NYU Postgraduate Medical School, New York, NY
November 6, 1980	Central Region, American Rheumatism Ass'n., Chicago, IL
December 10, 1980	Wright State College of Medicine, Dayton, OH
March 13, 1981	Seminar in Advanced Rheumatology, NYU Postgraduate Medical School, New York, NY
June 25, 1981	Swiss Institute for Experimental Cancer Research, Lausanne, Switzerland
March 10, 1982	Seminar in Advanced Rheumatology, NYU Postgraduate Medical School, New York, NY
May 12, 1982	St. Thomas Hospital, Akron, OH
March 2, 1983	Hillcrest Hospital, Cleveland, OH
May 20, 1983	University of Tennessee, Memphis, TN
May 21, 1983	Tennessee Academy of Family Physicians, Memphis, TN
June 24, 1983	University of Paris, Faculty of Medicine, Paris, France
June 28, 1983	Symposium on Marker Proteins in Inflammation, Lyon, France
July 1, 1983	Inselspital Berne, Berne, Switzerland
July 4, 1983	Medical University of Cologne, Cologne, W. Germany
July 12, 1983	Universite Louis Pasteur, Strasbourg, France
November 11, 1983	Virginia Commonwealth University, Richmond, VA
December 3, 1983	Ohio State University, Columbus, OH
December 12, 1983	McMaster University, Hamilton, Ontario
March 21, 1984	Northeastern Ohio College of Medicine, Akron, OH
May 9, 1984	St. Elizabeth Hospital, Youngstown, OH
August 31, 1984	Jagiellonian University, Cracow, Poland
September 3, 1984	International Lectin Conference, Poznan, Poland
September 14, 1984	NIH Conference on Pentraxins, Hamilton, MT
October 4, 1984	Northeastern Ohio College of Medicine: Conference on Nutrition Related Chronic Disorders, Akron, OH
December 12, 1984	Northeastern Ohio College of Medicine, Akron, OH
January 24, 1985	Medical College of Ohio, Toledo, OH
March 26, 1986	Northeastern Ohio College of Medicine, Akron, OH

May 2, 1986	Colloquium on Protides of the Biological Fluids, Brussels, Belgium
February 25, 1987	Rheumatism Society of the District of Columbia, Washington, D.C.
March 25, 1987	Northeastern Ohio College of Medicine, Akron, OH
June 24, 1987	Symposium on Markers of Inflammation, Lyon, France
October 5-6, 1987	Dalhousie University, Halifax, NS
November 4, 1987	Karol Marcinkowski University School of Medicine, Poznan, Poland
December 5, 1987	American Rheumatism Ass'n. SE region, Nashville, TN
January 11, 1988	University of New Mexico, Albuquerque, NM
May 25, 1988	American Rheumatism Ass'n., Inflammation Study Group, Houston, TX
June 28, 1988	International Union of Immunologic Societies: Regulation in Immunity, Polczyn Zdroj, Poland
October 29, 1988	Princesse Liliane Cardiology Foundation 13th Argenteuil Symposium: Acute Phase Proteins and the Acute Phase Response, Brussels, Belgium
December 12, 1988	NYAS Conference on Regulation of the Acute Phase and Immune Responses: Interleukin 6, New York, NY
March 29, 1989	Indiana University School of Medicine - Alpha Omega Alpha Dinner Speaker & Research Conference, Indianapolis, Indiana
April 1-2, 1989	North Carolina Rheumatology Society, Durham, NC
April 19, 1989	Northeastern Ohio College of Medicine, Akron, Ohio
May 5, 1989	Washington University School of Medicine, St. Louis, Missouri
June 10, 1989	Societe Nationale Francaise De Medecine Interne, Lille, France
July 12, 1989	Medical College of Wisconsin, Milwaukee, Wisconsin
July 15, 1989	Mexican Society of Rheumatology, Mexico City, Mexico
November 14, 1989	Queens University, Kingston, Ontario, Canada
March 28-29, 1990	University of Texas Southwest Medical Center, Dallas, Texas
Sept. 25-27, 1990	Symposium sur les Marqueurs de l'Inflammation, Lyon, France
October 31, 1990	Basic Science Symposium, American College of Rheumatology, Chairman, Seattle, Washington
January 23, 1991	University Hospital, Geneva, Switzerland
January 25, 1991	XIth European Workshop for Rheumatology Research, Leysin, Switzerland
January 29, 1991	Great Poland Cancer Center, Poznan, Poland
March 12, 1991	The Handerson Medical Historical Society, Cleveland, OH
April 10, 1991	Roswell Park Cancer Institute, Buffalo, NY
April 16, 1991	University of New Mexico, Albuquerque, NM
July 30, 1991	American Association of Clinical Chemists, Washington, D.C.
October 22, 1991	Ares-Sero Symposium, Montreux, Switzerland
October 29, 1991	Long Island Rheumatism Association, Islip, NY
October 30, 1991	SUNY, Stonybrook, NY
November 18, 1991	Rush Medical School, Chicago, IL
November 19, 1991	University of Health Sciences/The Chicago Medical School, Chicago, IL
February 25, 1992	Indiana University, Indianapolis, IN
March 12, 1992	American College of Rheum. Amyloidosis Symposium, New Orleans, LA.
April 9, 1992	Long Island Jewish Medical Center, New Hyde Park, NY
May 5, 1992	Armed Forces Radiobiology Research Institute (AFRRI), Bethesda, MD
August 19, 1992	Satellite Symposium of the 8th International Congress of Immunology, Krakow, Poland
October 29, 1992	Toledo Society of Rheumatologists, Toledo, Ohio
April 1, 1993	Henry Ford Hospital, Detroit, Michigan
April 28, 1993	Cleveland Society of Rheumatology Symposium, Dinner speaker, Cleveland, Ohio
July 5, 1993	XVIIIth ILAR Congress of Rheumatology, Barcelona, Spain

September 10, 1993	Workshop on Failure to thrive in old age, sponsored by National Institute on Aging, Tucson, AZ
February 7, 1994	Keystone symposium on the cellular and molecular regulation of the acute inflammatory response. Tamarron, CO.
June 23, 1994	NYAS Conference on IL-6-type cytokines. Poznan, Poland
October 24, 1994	American College of Rheumatology, Minneapolis, MN
November 2, 1994	Cleveland Clinic Foundation, Cleveland, OH
November 8, 1994	Bowman-Gray School of Medicine, Winston-Salem, NC
May 3, 1995	Cleveland Society of Rheumatology Symposium, Cleveland, OH
May 17-18, 1995	Université Rene Descartes (Paris V) - research seminar and grad. student lecture
May 25, 1995	Karol Marcinkowski Academy of Medicine, Poznan, Poland
February 2, 1996	Gordon Research Conference on SAA, Ventura, CA (invited senior discussant)
May 20, 1996	Jagiellonean University, Krakow, Poland
June 11, 1996	Cleveland Clinic Foundation Research Institute
April , 1997	Cleveland Society for Rheumatology
May 8, 1997	Roosevelt/St. Luke Hospital, New York, NY
May 9, 1997	New York Medical College, Vallhalla, NY
June 26, 1998	Gordon Research Conference on SAA, Hennepin, NH (invited senior discussant)
September 18, 1998	IFCC/Beckman European Conference on Inflammatory Diseases, Regensburg, Germany
June 11, 1999	Institute of Molecular Biology, Jagiellonian University, Krakow, Poland
June 16, 1999	Department of Rheumatology, Vilnius University, Vilnius, Lithuania
November 5, 1999	American Society of Nephrology, Miami Beach, FL
February 2, 2000	Northeastern Ohio College of Medicine, Akron, OH
June 20, 2000	Hillcrest Hospital, Cleveland, OH
September 11-12, 2000	University of Texas Southwest Medical Center, Dallas, TX
October 11, 2000	Deaconess Hospital, Cleveland, OH
February 16, 2001	Parma Community General Hospital, Parma, OH
July 12, 2001	University Hospital, Geneva, Switzerland
September 5, 2001	Baystate Medical Center, Springfield, MA
February 21, 2002	Glenn Research Center, NASA, Cleveland, OH
March 3, 2002	Cleveland Clinic Foundation, Cleveland, OH
September 25, 2002	Cardiology Update, Lake County Hospital System, Eastlake, OH
January 27, 2003	Huron Road Hospital, East Cleveland, OH
February 19, 2003	Deaconess Hospital, Cleveland, OH
April 15, 2005	Cleveland Society of Rheumatology Symposium, Cleveland, OH
April 28, 2005	Fairview General Hospital, Cleveland, OH
April 29, 2005	Parma Community Hospital, Cleveland, OH
April 21, 2006	Cleveland Medical Library Association, annual meeting
April 27, 2006	Waring Medical Library Society, Charleston SC
April 28, 2006	Medical University of South Carolina, Charleston SC
May 8, 2006	Huron Road Hospital, Cleveland, OH
January 17, 2007	St. Vincent Charity Hospital, Cleveland, OH
February 26-27, 2007	University of Colorado Medical Center, Denver, CO
March 28, 2007	Lakewood Hospital, Lakewood, OH
April 30, 2007	Institute of Biochemistry, Aachen, Germany
April 18, 2008	Cleveland Society of Rheumatology Symposium, Cleveland OH
September 3, 2009	Royal Free Hospital, University College London, UK
November 16, 2009	Fairview Hospital, Cleveland OH
January 17, 2011	Fairview Hospital, Cleveland OH

Major Grant Funding

NIH Grants

A. NIH RO-1 Research Grants – as principal investigator

<u>Dates</u>	<u>Grant #</u>	<u>Project Title</u>	<u>Total Direct Costs</u>
1/1/65-12/31/67	HE-09353	Immunochemical Analysis of Human Myocardial Antigens	\$34,648
1/1/68-8/31/79	AI-08366	Biosynthesis and Structure of Acute Phase Proteins	\$206,245
8/1/80-2/28/91	AI-12886	Induction of Acute Phase Protein Biosynthesis	\$785,801
3/1/91-2/28/96	AG-02467	Induction of Acute Phase Protein Biosynthesis	\$912,256
3/1/96-7/31/00	AG-02467	Induction of Acute Phase Protein Biosynthesis	\$642,626

B. NIH RO-1 Research Grants - as co-investigator

7/1/91-6/30/95	RO-1-AR40765	Studies of the in vivo role of CRP in transgenic mice	\$550,000
8/15/00-5/31/05	AG-02467	Induction of Acute Phase Protein Biosynthesis	\$1,000,000
9/30/99-4/15/05	NIAMS	Mapping Genes for Fibromyalgia Syndrome	\$2,000,000

(D. Samols, PI)
(D. Samols, PI)
(J. Olsen, PI)

C. NIH Research Grants - as associate director

NIH Multipurpose Arthritis Center

<u>Dates</u>	<u>Grant #</u>	<u>Project Title</u>
12/1/78-11/30/02	AR 20618	Northeast Ohio Multipurpose Arthritis Center, (R. Moskowitz, Director)

D. NIH Research Grants - as sponsor for NIH clinical investigator award

to Stanley P. Ballou, M.D.:

<u>Dates</u>	<u>Grant #</u>	<u>Project Title</u>
9/30/91-9/29/96	KO-1-AI-10162	Interaction of C-reactive protein with human monocytes

E. Research Grants - as US counterpart for Fogarty International Research Collaboration Awards

To Andrzej Mackiewicz, M.D., Ph.D., Academy of Medicine, Poznan, Poland:

<u>Dates</u>	<u>Grant name/#</u>	<u>Project Title</u>
7/1/93-6/30/96	Maria Sklodowska-Curie	Cytokine Regulation of Acute Phase Protein
	Joint Fund II	Glycosylation
	MZ/HHS-92-104	

F. The Kroc Foundation

10/1/80-12/31/83		Regulation of Biosynthesis of Murine Amyloid Associated Proteins	\$54,285
------------------	--	--	----------

BIBLIOGRAPHY

I. ORIGINAL REFEREED ARTICLES

1. Kushner I: Effects of ACTH on plasma iron levels in normal human subjects. *Proc Soc Exp Biol and Med* 101: 246-247, 1959
2. Kaplan MH, Meyeserian M, Kushner I: Immunologic studies of heart tissue. IV. Serologic reactions with human heart tissue as revealed by immunofluorescent methods: isoimmune, Wassermann, and autoimmune reactions. *J Exp Med* 113: 17-36, 1961
3. Kushner I and Kaplan MH. Studies of acute phase protein. I. An immunohistochemical method for the localization of Cx-reactive protein in rabbits. Association with necrosis in local inflammatory lesions. *J Exp Med* 114: 961-974, 1961
4. Goldstone J, Kushner I, Harris JW: Studies on the regulation of plasma iron in dogs with turpentine abscesses. *Proc Soc Exp Biol Med* 110: 285-287, 1962
5. Kushner I, Rakita L, Kaplan MH. Studies of acute phase protein. II. Localization of Cx-reactive protein to sites of myocardial necrosis. *J Clin Invest* 42: 286-292, 1963
6. Kushner I and Kaplan MH: Studies of acute phase protein. III. Elicitation of Cx-reactive protein in relation to immune elimination of antigen and appearance of circulating antigen-antibody complexes. *J Immunol* 92: 55-60, 1964
7. Kushner I, Rapp W, Burtin P: Electrophoretic and immunochemical demonstration of the existence of four human pepsinogens. *J Clin Invest* 43: 1983-1993, 1964
8. Kushner I and Kaplan MH. Antigenic analysis of extracts of human heart tissue. Cardiac antigens with limited distribution in other organs. *J Immunol* 99: 526-533, 1967
9. Keiser HD, Ruben F, Wolinsky E, Kushner I: Clinical forms of gonococcal arthritis. *NEJM* 279: 234-240, 1968
10. Espinosa E, Kushner I, Kaplan MH. Antigenic composition of heart tissue. *Amer J Cardiology* 24: 508-513, 1969
11. Kushner I and Somerville J: Estimation of molecular size of CRP and CxRP in serum. *Biochem Biophys Acta* 207: 105-114, 1970
12. Keiser H, Kushner I, Kaplan MH: "Non-specific" stimulation of lymphocyte transformation by cellular fractions and acid extracts of group A streptococci. *J Immunol* 106: 1593-1601, 1971
13. Kushner I and Somerville J: Permeability of human synovial membrane to plasma proteins: Relationship to molecular size and inflammation. *Arthritis Rheum* 14: 561-570, 1971
14. Kushner I, Edgington TS, Trimble C, Liem HH, Muller-Eberhard U. Plasma hemopexin homeostasis during the acute phase response. *J Lab Clin Med* 80: 18-25, 1972
15. Kushner I and Somerville-Volanakis J, Studies of synovial and serum C-reactive protein in experimental arthritis in rabbits. *Proc Soc Exper Bio Med* 142: 112-114, 1973
16. Yen-Watson B and Kushner I: Rabbit CRP response to endotoxin administration: Dose-response relationship and kinetics. *Proc Soc Exp Bio and Med* 146: 1132-1136, 1974
17. Greco FA and Kushner I: Loss of symptoms of pulmonary hypertrophic osteoarthropathy after laparotomy. *Ann Int Med* 81: 555-56, 1974
18. Kushner I and Somerville-Volanakis J: Molecular size of rabbit C-reactive protein synthesized in vitro. *J Lab Clin Med* 87: 617-623, 1976
19. Ballou SP, Khan MA, Kushner I: Diffuse intervertebral disc calcification in primary amyloidosis. *Ann Int Med* 85: 616-617, 1976
20. Khan MA, Braun WE, Kushner I, Grecek DE, Muir WA, Steinberg AG: HLA-B27 in ankylosing spondylitis: Differences in frequency and relative risk in American Blacks and Caucasians. *J Rheumat* 4 (supp No. 3): 39-43, 1977
21. Khan MA and Kushner I: Marked and sustained improvement of rheumatoid arthritis following splenectomy for Felty's syndrome. *JAMA* 237: 1116-1118, 1977
22. Crowe WE and Kushner I: An immunofluorescent method using Crithidia Luciliae for the detection of antibodies to double stranded DNA. *Arthritis Rheum* 20: 811-814, 1977
23. Ballou SP, Khan MA, Kushner I, Harris JW: Secondary gout in hemoglobinopathies. *Am J Hemat* 2: 397-402, 1977
24. Khan MA, Kushner I, Braun WE: A comparison of clinical features of HLA-B27 positive and negative patients with ankylosing spondylitis. *Arthritis Rheum* 20: 909-912, 1977
25. Kushner I, Broder MI, Karp D: Control of the acute phase response. Serum C-reactive protein kinetics after acute myocardial infarction. *J Clin Invest* 61: 235-242, 1978
26. Ballou SP, Khan MA, Kushner I: Giant cell arteritis in a Black patient. *Ann Int Med* 88:659, 1978
27. Khan MA, Kushner I, Braun WE, Zachary AA, Steinberg AG: HLA-B27 homozygosity in ankylosing spondylitis: relationship to risk and severity. *Tissue Antigens* 11: 434-438, 1978

28. Khan MA, Kushner I, Braun WE: A subgroup of ankylosing spondylitis associated with HLA-B7 in American Blacks. *Arthritis Rheum* 21:528-530, 1978
29. Kushner I, Feldmann G: Control of the acute phase response: Demonstration of C-reactive protein synthesis and secretion by hepatocytes during acute inflammation in the rabbit. *J Exper Med* 148: 466-477, 1978
30. Lam M, Ricanati ES, Khan MA, Kushner I: Reversal of severe renal failure in systemic sclerosis. *Ann Int Med* 89:642-643, 1978
31. Ballou SP, Kushner I: Anti-native DNA detection by the *Crithidia Lucifera* method: An improved guide to the diagnosis and clinical management of systemic lupus erythematosus. *Arthritis Rheum* 22: 321-327, 1979
32. Zein N, Ganuza C, Kushner I: Significance of serum C-reactive protein elevation in patients with systemic lupus erythematosus. *Arthritis Rheum* 22: 7-12, 1979
33. Ballou SP, Kushner I: Immunochemical characteristics of antibodies to DNA in patients with active SLE. *Clin Exper Immunol* 37:58-68, 1979
34. Khan MK, Kushner I, Freehafer AA: Sacroiliac joint abnormalities in paraplegics. *Ann Rheum Dis* 38: 317-319, 1979
35. Khan MA, Kushner I: Ankylosing spondylitis and multiple sclerosis. a possible association. *Arthritis Rheum* 22: 784-786, 1979
36. Schoenberg LM, Kushner I, Khan MA. Concanavalin A-induced transformation of mononuclear cells: influence of plasma from patients receiving anti-inflammatory agents. *Proc Soc Exper Biol Med* 164: 192-195, 1980
37. Kushner I, Ribich WN, Blair JB: Control of the acute phase response: C-reactive protein synthesis by isolated perfused rabbit livers. *J Lab Clin Med* 96: 1037-1045, 1980
38. Khan MA, Kushner I, Braun WE: Genetic heterogeneity in primary ankylosing spondylitis. *J Rheumatol* 7: 383-386, 1980
39. Khan MA, Kushner I, Khan MK. Survival among patients with ankylosing spondylitis: a life-table analysis. *J Rheumatol* 8: 86-90, 1981
40. Khan MA, Kushner I, Braun WE: Association of HLA-A2 with uveitis in HLA-B27 positive patients with ankylosing spondylitis. *J Rheumatol* 8: 295-298, 1981
41. Khan MA, Braun WE, Steinberg AG, Kushner I, DeJelo CL, Ballou SP. Clinical and HLA studies in familial rheumatoid arthritis. *Tissue Antigens* 18: 136-138, 1981
42. Ballou SP, Khan MA, Kushner I: Clinical features of systemic lupus erythematosus. Differences related to race and age of onset. *Arthritis Rheum* 25: 55-60, 1982
43. Ballou SP, Kushner I. Lupus patients who lack detectable anti-DNA: clinical features and survival. *Arthritis Rheum* 25: 1126-1129, 1982
44. Khan MA, DeJelo CL, Kammer G, Kushner I, Braun WE, Ballou SP: Study of HLA antigens in familial and sporadic rheumatoid arthritis. *Tissue Antigens* 21: 35-38, 1983
45. Macintyre SS, Schultz D, Kushner I. Synthesis and secretion of C-reactive protein by rabbit primary hepatocyte cultures. *Biochem J* 210: 707-715, 1983
46. Russell J, Papaioannou C, McDuffie F, Macintyre SS, Kushner I: Effect of IgG and C-reactive protein on complement depletion by monosodium urate crystals. *J Rheumatol* 10: 425-433, 1983
47. Chelladurai M, Macintyre SS, Kushner I: *In vivo* studies of serum C-reactive protein turnover in rabbits. *J Clin Invest* 71: 604-610, 1983
48. Iannuzzi L, Dawson N, Zein N, Kushner I: Does drug therapy slow radiographic deterioration in rheumatoid arthritis? *N Engl J Med* 309: 1023-1028, 1983
49. Khan MA, Kushner I, Weitkamp LR: Genetics of HLA-associated disease: rheumatoid arthritis. *Tissue Antigens* 22:182-185, 1983
50. Miron SD, Khan MA, Wiesen EJ, Kushner I, Bellon EM: The value of quantitative sacroiliac scintigraphy in detection of sacroiliitis. *Clin Rheumatol* 2: 407-414, 1983
51. Ballou SP, Morley JJ, Kushner I: Pregnancy and systemic sclerosis. *Arthritis Rheum* 27:295-298, 1984
52. Khan MA, van der Linden S, Kushner I, Valkenburg HA, Cats A: Spondylitic disease without radiological sacroiliitis in relatives of HLA-B27 positive patients with ankylosing spondylitis. *Arthritis Rheum* 28:40-43, 1985
53. Macintyre SS, Kushner I, Samols D: Secretion of C-reactive protein becomes more efficient during the course of the acute phase response. *J Biol Chem* 260:4169-4173, 1985
54. Samols D, Macintyre SS, Kushner I: Studies of translatable mRNA for rabbit C-reactive protein. *Biochem J* 227:759-765, 1985
55. Yue CC, Regier A, Kushner I: Heterotopic ossification presenting as arthritis. *J Rheumatol* 12:769-772, 1985

56. Ballou SP, Khan MA, Kushner I: Intravenous pulse methylprednisolone followed by alternate-day, corticosteroid therapy in lupus erythematosus: A prospective evaluation. *J Rheumatol* 12:5, 944-948, 1985
57. Yamashita TS, Khan MA, Kushner I: Genetic analysis of families with multiple cases of rheumatoid arthritis. *Disease Markers*, 4:113-119, 1986
58. Yue CC, Park CH, Kushner I. Apical fibrocavitary lesions of the lung in rheumatoid arthritis. Report of 2 cases and review of the literature. *Am J Med*, 81:741-746, 1986
59. Mackiewicz A, Marcinkowska-Pieta R, Ballou S, Mackiewicz S, Kushner I. Microheterogeneity of alpha 1-acid glycoprotein in detection of intercurrent infection in system lupus erythematosus. *Arthritis & Rheumatism* 30:513-518, 1987
60. Mackiewicz A, Ganapathi MK, Schultz D, Kushner I. Monokines regulate glycosylation of acute phase proteins. *J Exp Med* 166:253-258, 1987
61. Hu S-I, Macintyre SS, Schultz D, Kushner I, Samols D. Secretion of rabbit C-reactive protein by transfected human cell lines is more rapid than by cultured rabbit hepatocytes. *J Biol Chem* 263:1500-1504, 1988
62. Mackiewicz A, Ganapathi M, Schultz D, Samols D, Reese J, Kushner I. Regulation of rabbit acute phase proteins by monokines. *Biochemical J* 253:851-857, 1988
63. Ganapathi M, Schultz D, Mackiewicz A, Samols D, Hu S-I, Brabenec A, Macintyre S, Kushner I. Heterogenous nature of the acute phase response: differential regulation of SAA, CRP and other acute phase proteins in Hep 3B cells by cytokines. *J Immunol* 141:564-569, 1988
64. Ganapathi MK, May LT, Schultz D, Brabenec A, Weinstein J, Sehgal PB, Kushner I. Role of Interleukin-6 in regulating synthesis of C-reactive protein and serum amyloid A in human hepatoma cell lines. *Biochem. Biophys. Res. Commun.* 157:271-277, 1988
65. Mackiewicz A, Schultz D, Mathison J, Ganapathi MK, Kushner I. Effect of cytokines on glycosylation of acute phase proteins in human hepatoma cell lines. *Clin Exp Immunol* 75:70-75, 1989
66. Mackiewicz A, Kushner I. Interferon- γ /BSF-2/IL-6 affects glycosylation of acute phase proteins in human hepatoma cell lines. *Scand J Immunol* 29:265-271, 1989
67. Mackiewicz A, Khan MA, Reynolds TL, van der Linden S, Kushner I. Serum IgA, acute phase proteins and glycosylation of α 1-acid glycoprotein in ankylosing spondylitis. *Ann Rheum Dis* 48:99-103, 1989
68. Zanetakis E, Khan MA, Yagan R, Kushner I. Ochronotic arthropathy, post-traumatic spinal pseudoarthrosis and HLA-B-27. *J Orthopaedic Rheumatol* 2:48-53, 1989
69. Mackiewicz A, Kushner I. Affinity electrophoresis for studies of mechanisms regulating glycosylation of plasma proteins. *Electrophoresis* 10: 830-835, 1989
70. Ganapathi MK, Mackiewicz A, Samols D, Brabenec A, Kushner I, Hu S-I, Schultz D. Induction of C-reactive protein by cytokines in human hepatoma cell lines is potentiated by caffeine. *Biochemical J* 269:41-46, 1990
71. Mackiewicz A, Ganapathi MK, Schultz D, Brabenec A, Kushner I. Transforming growth factor β 1 regulates production of acute phase proteins. *Proc Nat Acad Sci (USA)* 87:1491-1495, 1990
72. Mackiewicz A, Kushner I. Transforming growth factor β 1 influences glycosylation of α 1-protease inhibitor in human hepatoma cell lines. *Inflammation* 14:485-497, 1990
73. Mackiewicz A, Speroff T, Ganapathi MK, Kushner I. Effects of cytokine combinations on acute phase protein production in two human hepatoma cell lines. *J Immunol* 146:3032-3037, 1991
74. Ganapathi MK, Rzewnicki D, Samols D, Jiang S-L, Kushner I. Effect of combinations of cytokines and hormones on synthesis of serum amyloid A and C-reactive protein in Hep 3B cells. *J Immunol* 147:1261-1265, 1991
75. Liepnieks JJ, Dwulet FE, Benson MD, Kluve-Beckerman B, Kushner I. The primary structure of serum amyloid A (SAA) protein in rabbit. *J Lab Clin Med* 118:570-575, 1991
76. Lozanski G, Ballou S, Kushner I. Effect of flurbiprofen on cytokine production by human monocytes and U-937 and THP-1 cell lines. *J Rheum* 19:921-926, 1992
77. Kushner I, Dawson NV. Changing perspectives in the treatment of rheumatoid arthritis. (editorial) *J Rheum* 19:1831-1834, 1992
78. Galve-de Rochemonteix B, Wiktorowicz K, Kushner I, Dayer J-M. C-reactive protein increases IL-1 α , IL-1 β and TNF α production and expression of mRNA by human alveolar macrophages. *J Leukocyte Biology* 53:439-445, 1993
79. Damtew B, Rzewnicki D, Lozanski G, Kushner I. IL-1 Receptor antagonist affects the plasma protein response of Hep 3B cells to conditioned medium from LPS-stimulated monocytes. *J Immunol* 150:4001-4007, 1993
80. Kushner I. Regulation of the acute phase response by cytokines. *Perspectives in Biol and Med.* 36(4):611-622, 1993

81. Jiang S-L, Samols D, Rzewnicki D, Macintyre SS, Greber I, Sipe J, Kushner I. Kinetic modeling and mathematical analysis indicate that acute phase gene expression in Hep 3B cells is regulated by both transcriptional and post-transcriptional mechanisms. *J Clin Invest* 95:1253-1261, 1995
82. Jiang S-L, Lozanski G, Samols D, Kushner I. Induction of human serum amyloid A in Hep 3B cells by IL-6 and IL-1 β involves both transcriptional and post-transcriptional mechanisms. *J Immunol* 154:825-831, 1995
83. Zhang D, Jiang S, Rzewnicki D, Samols D, Kushner I. The effect of interleukin-1 on C-reactive protein expression in Hep 3B cells is exerted at the transcriptional level. *Biochem J* 310:143-148, 1995
84. Zhang D, Sun M, Samols D, Kushner I. STAT3 participates in transcriptional activation of the C-reactive protein gene by IL-6. *J Biol Chem* 271:9503-9509, 1996
85. Ballou SP, Lozanski GB, Hodder S, Rzewnicki D, Mion LC, Sipe JD, Ford AB, Kushner I. Quantitative and qualitative alterations of acute phase proteins in healthy elderly persons. *Age and Aging* 25:224-230, 1996
86. Drenth JPH, Van Der Meer JWM, Kushner I. Unstimulated peripheral blood mononuclear cells from patients with the Hyper-IgD Syndrome produce cytokines capable of potent induction of CRP and SAA in Hep3B cells. *J Immunol* 157:400-404, 1996
87. Lozanski G, Jiang S-L, Samols D, Kushner I. C-reactive protein and serum amyloid A mRNA stability following induction by cytokines. *Cytokine* 8:534-540, 1996
88. Lozanski G, Berthier F, Kushner I. The sphingomyelin-ceramide pathway participates in cytokine regulation of C-reactive protein and serum amyloid A, but not α -fibrinogen. *Biochem J* 328:271-275, 1997
88. Gabay C, Kushner I. Acute phase proteins and other systemic responses to inflammation. *N England J Med* 340:448-454, 1999
89. Cha-Molstad H, Agrawal A, Zhang D, Samols D, Kushner I. The Rel family member p50 mediates cytokine-induced C-reactive protein expression by a novel mechanism. *J Immunol* 165:4592-4597, 2000.
90. Agrawal A, Cha H, Samols D, Kushner I. Transactivation of C-reactive protein by IL-6 requires synergistic interaction of C/EBP beta and Rel p50. *J Immunol* 166:2378-2384, 2001.
91. Leon J, Majerle A, Soinski J, Kushner I, Ohri-Vachaspati P, Sehgal A. Can a nutrition intervention improve albumin levels among hemodialysis patients? A pilot study. *J Renal Nutrition* 11:9-15, 2001.
92. Kushner I, Sehgal A. Is high sensitivity C-reactive protein an effective screening test for cardiovascular risk? *Arch Internal Med* 162:867-869, 2002.
93. Pincus T, Ferraccioli G, Sokka T, Larsen A, Rau R, Kushner I, Wolfe F. Evidence from clinical trials and long-term observational studies that disease-modifying anti-rheumatic drugs slow radiographic progression in rheumatoid arthritis: updating a 1983 review. *Rheumatology* 41:1346-1356, 2002.
94. Beall C, Decker M, Brittenham G, Kushner I, Gebremedhin A, Strohl K. An Ethiopian pattern of human adaptation to high-altitude hypoxia. *PNAS* 99:17215-17218, 2002.
95. Agrawal A, Cha-Molstad H, Samols D, Kushner I. Overexpressed nuclear factor-kappaB can participate in endogenous C-reactive protein induction, and enhances the effects of C/EBPbeta and signal transducer and activator of transcription-3. *Immunology* 108:539-547, 2003.
96. Agrawal A, Samols D, Kushner I. Transcription factor c-Rel enhances C-reactive protein expression by facilitating the binding of C/EBPbeta to the promoter. *Mol Immunol* 40:373-380, 2003.
97. Black S, Kushner I, Samols D. Minireview: C-reactive protein. *J Biol Chem* 279:48487-90, 2004.
98. Frost F, Roach MJ, Kushner I, Schreiber P. Inflammatory C-reactive protein and cytokine levels in asymptomatic people with chronic spinal cord injury. *Arch PM&R* 86:312-317, 2005.
99. Kushner I, Rzewnicki D, Samols D. What does minor elevation of C-reactive protein signify? *Am J Med* 119, 166.e17-166.e28, 2006.
100. Leon JB, Albert JM, Gilchrist G, Kushner I, Lerner E, Mach S, Majerle A, Porter D, Ricanati E, Sperry L, Sullivan C, Zimmerer J, Sehgal AR. Improving albumin levels among hemodialysis patients: a community-based randomized controlled trial. *Am J Kidney Dis*. 2006 Jul;48(1):28-36
101. Cha-Molstad H, Young D, Kushner I, Samols D. , The interaction of C-Rel with C/EBPbeta enhances C/EBPbeta binding to the C-reactive protein gene promoter. *Molecular Immunology* 44: 2933–2942, 2007
102. Mohyuddin T, Elyan M, Kushner I. Pericarditis: a rare complication of methotrexate therapy. *Clin Rheumatol*. 26: 2157-2158, 2007
103. Young D, Kushner I, Samols D. Binding of C/EBP β to the CRP Promoter in Hep3B Cells is Associated with Transcription of CRP mRNA. *J Imm*. 2008. 181:2420-2427.
104. Gaitonde S, Samols D, Kushner I. C-reactive protein and systemic lupus erythematosus. *Arthritis Rheum*. 2008 Dec 15; 59 (12):1814-20
105. Magrey M, Husni ME, Kushner I, Calabrese LH. Do acute phase reactants predict response to treatment in retroperitoneal fibrosis?. *Arthritis Rheum*. 2009 Apr 29; 61(5):674-679.

- 106 Kushner I, Greco PJ, Saha PK, Gaitonde S. The Trivialization of Diagnosis. *J Hosp Med*. 2010, 5:116-119
- 107 Gulati D, Kushner I, File E, Magrey M . Primary Sjogren's syndrome with anticentromere antibodies-a clinically distinct subset. *Clin Rheumatol*. 2010 Jul;29(7):789-91
- 108 Kushner I, Samols D, Magrey M. A Unifying Biologic Explanation for High Sensitivity" C-Reactive Protein and "Low Grade" Inflammation. *Arthr Care & Res*. 2010 Apr;62(4):442-6.
- 109 Kushner I, Samols D. Oswald Avery and the pneumococcus. *The Pharos*. 2011. In press.
- 110 Kushner I. The Salpêtrière Hospital in Paris and its Role in the Beginnings of Modern Rheumatology. *J Rheum*. 2011 in press.

II. INVITED ARTICLES, CONTRIBUTIONS TO SYMPOSIA AND CONFERENCES

1. Kushner I and Schmidt WC: The prevention of rheumatic fever. *Ohio State Med J* 56: 657-662, 1960.
2. Kushner I, Rapp W, Burtin P: Separation and characterization of immunologically active constituents of normal human gastric mucosa. *Protides of the Biological Fluids*, H. Peeters, editor, Elsevier, pp 248-251, 1964.
3. Aronson SB, Rapp W, Kushner I, Burtin P: Evaluation of normal gastric mucosal antigens and enzymes in cancerous human gastric mucosa by agar and immunoelectrophoresis. *Int Arch Allergy and Appl Immun* 26: 327-332, 1965.
4. Rapp W, Aronson SB, Kushner I, Burtin P, Grabar P: Les antigenes de la muqueuse gastrique cancéreuse humaine. *Immunopathology*. IV Int Symp 1965, Ed. P Grabar and P Miescher, Grune and Stratton, NY, pp 77-90.
5. Kushner I. Gonococcal Arthritis. (editorial). *J Infect Dis* 120: 387-388, 1969.
6. Kushner I: Gonococcal Arthritis. *Medical Times* 98: 111-116, 1970.
7. Kushner I: Gonococcal arthritis. An important complication of gonorrhoea. *Resident and Staff Physician*, March 1972, pp 37-45.
8. Kushner I, Ribich WN, Blair JB. How is C-reactive protein (CRP) synthesis regulated?. Studies in isolated perfused rabbit liver. *Protides of the Biological Fluids*, XXIII Colloquium, Brugge, 1975, Pergamon Press, pp 471-474.
9. Kushner I and Richey JE: Felty's syndrome. *West Virginia Med J* 71:177-178, 1975.
10. Schultz D, Macintyre SS, Kushner I: Studies of C-reactive protein synthesis by primary cultures of rabbit hepatocytes. *Ann NY Acad Sci* 349:387-389, 1980.
11. Kushner I, Gewurz H, Benson MD: C-reactive protein and the acute-phase response. *J Lab Clin Med* 97: 739-749, 1981.
12. Macintyre SS, Schultz D, Kushner I: Biosynthesis of C-reactive protein. *Ann NY Acad Sci* 389: 76-87, 1982.
13. Kushner I: The phenomenon of the acute phase response. *Ann NY Acad Sci* 389:39-48, 1982.
14. Morley JJ and Kushner I: Serum C-reactive protein levels in disease. *Ann NY Acad Sci* 389: 406-418, 1982.
15. Schultz D, Macintyre SS, Chelladurai M, Kushner I: The role of prostaglandins in the C-reactive protein response. *Ann NY ACAD Sci* 389:465-466, 1982.
16. Chelladurai M, Macintyre SS, Kushner I. Estimation of in vivo rates of C-reactive protein synthesis from serum turnover studies in rabbits. *Ann NY Acad Sci* 389: 437-438, 1982.
17. Russell IJ, Papaioannou C, Mansen C, McDuffie FC, Kushner I: Effect of C-reactive protein and IgG on complement depletion by monosodium urate crystals. *Ann NY Acad Sci* 389: 463-464, 1982.
18. Kushner I. Induction and Control of Acute Phase Reactant Synthesis. In Marker Proteins in Inflammation, Volume 2, P Arnaud, J Bienvenu, P Laurent (eds.), Walter De Gruyter & Co., Berlin/New York, 1984, pp 3-14. Symposium - Lyon, June 27-30, 1983.
19. Kushner I. C-reactive protein as a model of how lectins may evolve. In Lectins, Biology, Biochemistry, Clinical Biochemistry, T. C. Bog-Hansen and J. Breborowicz, Editors, W. De Gruyter, Berlin, Vol. 4, 1985.
20. Kushner I. The Evolution of C-reactive Protein. Wszzechswiat, Cracow, 1985.
21. Macintyre S, Samols D, Kushner I. Regulation of C-reactive protein secretion by cultured rabbit hepatocytes. In Protides of the Biological Fluids, (H Peeters, ed), Pergamon Press, New York, Vol 34, 1986, pp 251-254.
22. Kushner I, Mackiewicz A. Acute phase proteins as disease markers. *Disease Markers* 5:1-11, 1987.
23. Kushner I. The Acute-Phase Response in Humans: Why Is It Important? *Internal Med* 9:59-65, 1988.
24. Kushner I. Aggressive therapy of rheumatoid arthritis does not affect the outcome. *Postgraduate Advances in Rheumatology*, 3(4):11-16, 1988.
25. Kushner I. Does aggressive therapy of rheumatoid arthritis affect outcome? (editorial). *J Rheumat* 16:1-4, 1989.

26. Mackiewicz A, Kushner I. Role of IL-6 in acute phase protein glycosylation. *Ann NY Acad Sci* 557:515-517, 1989.
27. Kushner I, Ganapathi MK, Schultz D. The acute phase response is mediated by heterogeneous mechanisms. *Ann NY Acad Sci* 557:19-30, 1989.
28. Kushner I. Post-modernism, the acute phase response, and interpretation of data. *Ann NY Acad Sci* 557:240-242, 1989.
29. Ganapathi MK, Brabenec A, Schultz D, Kushner I. Differential modulation by caffeine and phorbol esters of the induction of acute phase proteins by cytokines. *Ann NY Acad Sci* 557:497-498, 1989.
30. Kushner I. The Acute Phase Response. *Clinical Aspects of Autoimmunity* 3:20-30, 1989.
31. Kushner I, Ganapathi MK, Macintyre S. Regulation of biosynthesis and secretion of human C-reactive protein and serum amyloid A in *Acute Phase Proteins in the Acute Phase Response*, M. Pepys (ed), Thirteenth Argenteuil Symposia, Springer-Verlag, London, Chapter 6, 1989, pp 69-83.
32. Kushner I. The Acute Phase Response and Rheumatology. *Postgraduate Advances in Rheumatology* 4(4):1-11, 1989.
33. Kushner I. C-reactive Protein. *European J Int Med* 1:107-113, 1989.
34. Kushner I, Dawson NV. Does current aggressive therapy of rheumatoid arthritis affect outcome? *Mediguide to Inflammatory Disease* 8:1-4, 1989.
35. Coulton, CJ, Zborowsky, E, Lipton J, Kushner, I, Moskowitz, R. Problems in access to benefits and services among persons with rheumatoid arthritis. *Arthritis Care and Research* 2:54-59, 1989.
36. Mackiewicz A, Ganapathi MK, Schultz D, Brabenec A, Weinstein J, Kelley MF Kushner I. Transforming growth factor /1 affects acute phase protein synthesis and glycosylation. *Ann NY Acad Sci* 593:353-354, 1990.
37. Kushner I. C-reactive protein and the acute-phase response. *Hosp Prac* 25(3A):13-28, 1990.
38. Kushner I, Ganapathi MK, Schultz D. Tumor necrosis factor a can participate in induction of human serum amyloid A. In Dinarello CA, Kluger MJ, Powanda MC, Oppenheim JJ (eds): *Physiological & Pathological Effects of Cytokines*, New York, Wiley-Liss, 1990, pp 81-86.
39. Kushner I, Mackiewicz A, Ganapathi MK, Schultz D. Cytokine interaction in regulation of the acute phase response. In Oppenheim J, Dinarello CA, Kluger M, Powanda M (eds): *Molecular and cellular biology of cytokines*, New York, Wiley-Liss, 1990 pp 517-522.
40. I. Kushner. Do drugs modify the natural history of rheumatoid arthritis? *Revista Mexicana de Reumatologia*, v5, 1990.
41. Kushner I, Ganapathi MK, Schultz, Jiang SL, Samols D. Regulation of serum amyloid A (SAA) synthesis in Hep 3B cells by cytokines and corticosteroids. In Natvig JB, Forre O, Husby G, Husebekk A, Skogen B, Sletten K, Westermarck P (eds): *Amyloidosis*, The Netherlands, Kluwer Academic Publishers, 1991.
42. Kushner I. C-reactive protein in rheumatology. (editorial), *Arthritis & Rheumatism* 34:1065-1068, 1991.
43. Kushner I. The acute phase response: From Hippocrates to cytokine biology. *Europ Cytokine Network* 2:75-80, 1991.
44. Kushner I. Mechanisms involved in the acute phase response and its biologic and clinical significance. *Clinical Immunology Newsletter* 11:129-132, 1991.
45. Kushner I. The Role of IL-6 in Regulation of the Acute Phase Response. in Revel M (ed). *IL-6: Physiopathology and Clinical Potentials*. Raven Press New York, 1992 pp 163-171.
46. Kushner I. Citation Classic. The acute phase response. *Current Contents/Clinical Medicine*. 20(28):8, July 13, 1992.
47. Jiang S-L, Samols D, Sipe J, Kushner I. The acute phase response: Overview and evidence of roles for both transcriptional and post-transcriptional mechanisms. *Folia Histochemica et Cytobiologica* 30:133-136, 1992.
48. Kushner I. Citation Classic. The acute phase response. *Current Contents/Life Sciences*. 36(16):8, April 19, 1993.
49. Kushner I, Jiang SL, Zhang D, Lozanski G, Samols D. Do post-transcriptional mechanisms participate in induction of C-reactive protein and serum amyloid A by IL-6 and IL-1? *Ann NY Acad Sci* 762:102-107, 1995.
50. Trey J, Kushner I. The acute phase response and the hematopoietic system: the role of cytokines. *Critical Reviews in Oncology/Hematology* 21:1-18, 1995.
51. Ballou SP, Kushner I. Chronic inflammation in older people: recognition, consequences and potential intervention. In Verdery R (editor): *Clinics in Geriatric Medicine* 13:653-670, 1997.
52. Baumann H, Kushner I. Production of interleukin-6 by synovial fibroblasts in rheumatoid arthritis. *Amer J Path* 152:641-644, 1998.
53. Kushner I. Semantics, inflammation, cytokines and common sense. *Cytokine & Growth Factor Reviews* 9:191-196, 1998.
54. Gabay C, Kushner I. Acute-phase proteins. In *Embryonic Encyclopedia of Life Sciences*, London, Nature Publishing Group, www.els.net, November 1999.

55. Kushner I, Ballou SP. Treatment of rheumatoid arthritis – we're getting closer. *J Rheumat* 26:2291-2292, 1999.
56. Kushner I. The acute phase response. Up to Date, 1999-.
57. Kushner I. C reactive protein (CRP) elevation can be caused by conditions other than inflammation and may reflect biologic aging. *Cleveland Clinic Journal of Medicine* 68:535-537, 2001.

III. ORIGINAL ABSTRACTS AND LETTERS

A. ABSTRACTS

1. Kushner I and Kaplan MH: Immunohistochemical localization of Cx-reactive protein in inflammatory lesions of the rabbit. *Fed Proc* 1961, 20, 263
2. Kaplan MH, Svec KH, Kushner I, Arana-Sialer J, Suchy ML: Evidence in group A streptococcal cells of cross-reactive antigen related to mammalian heart. *Fed Proc* 22:217, 1963
3. Kushner I, Rapp W, Burtin P: The demonstration of the existence of four human pepsinogens. *Clin Res* 11:292, 1963
4. Kushner I: Immunochemical identity of a species-specific tissue esterase in multiple human organs. *J Lab Clin Med* 64:876, 1964
5. Kushner I: Antigenic analysis of saline extracts of human heart. *Fed Proc* 24:176, 1965
6. Kushner I and Segal A: Rheumatoid involvement of the cervical spine. Neurologic manifestations and cineradiographic findings. XI International Congress of Rheumatology 1965, Mar del Plata
7. Kushner I and Griggs RC: Pneumococcal arthritis occurring in association with multiple myeloma. XI International Congress of Rheumatology 1965, Mar del Plata
8. Kushner I and Griggs RC: Pneumococcal arthritis occurring in association with multiple myeloma. *Arthritis Rheum* 9:519, 1966
9. Kushner I: Monoclonal qM rheumatoid factor in a mixed qM-qG cryoglobulin. *Arthritis Rheum* 9:862, 1966
10. Kushner I: Permeability of the synovial membrane to serum proteins in arthritis. *Arthritis Rheum* 12:309, 1969
11. Kushner I and Broder MI: Serum CRP kinetics in acute myocardial infarction. *Clin Res* 20:794, 1972
12. Kushner I, Sweet AY, Yen-Watson B, Ribich WN, Merk J: Significance of C-reactive protein (CRP) in cord blood. *Ped Res* 7:403, 1973
13. Kushner I, Ribich WN, Blair JB: Regulation of C-reactive protein (CRP) synthesis: Studies in isolated perfused rabbit liver. *Fed Proc* 34:620, 1975
14. Khan MA, Braun WE, Kushner I: Low frequency of HLA-B27 in American Blacks with ankylosing spondylitis (AS). *Clin Res* 25:331A, 1976
15. Khan MA, Kushner I, Braun WE. A comparison of clinical features in HLA-B27 positive and negative patients with ankylosing spondylitis. *Arthritis Rheum* 19:804, 1976
16. Goldberg VM, Khan MA, Kushner I, Powell AE: Plasma-dependent impairment of lymphocyte responsiveness in ankylosing spondylitis. *Arthritis Rheum* 19:798, 1976
17. Kushner I and Feldmann G: Localization of hepatic cells producing C-reactive protein (CRP) during acute inflammation. *Fed Proc* 36:1065, 1977
18. Khan MA, Kushner I, Braun WE, Grecek DE, Steinberg AG: HLA-B27 homozygosity in ankylosing spondylitis: Relationship to risk and severity. *Clin Res* 25: 362A, 1977
19. Kushner I and Feldmann G. Studies of the acute phase response: Demonstration of C-reactive protein (CRP) by hepatocytes during acute inflammation. *Clin Res* 25:484A, 1977
20. Ballou SP, Kushner I: Correlation between detection of antibodies to double stranded (ds) DNA by the Crithidia Luciliae method and disease activity in systemic lupus erythematosus. *Clin Res* 25: 581A, 1977
21. Ganuza C and Kushner I: Serum C-reactive protein (CRP) elevation in patients with systemic lupus erythematosus (SLE). *Clin Res* 25: 581A, 1977
22. Khan MA, Kushner I, Braun WE Association of HLA-B7 with ankylosing spondylitis in HLA-B27 negative American Black patients. *Clin Res* 25: 582A, 1977
23. Ballou SP and Kushner I Immunochemical characteristics of antibodies in DNA in patients with active systemic lupus erythematosus (SLE). *Arthritis Rheum* 21: 543, 1978
24. Zein N, Ganuza C, Kushner I: Significance of serum C-reactive protein (CRP) elevations in patients with systemic lupus erythematosus (SLE). *Arthritis Rheum* 21: 605, 1978
25. Khan MA, Kushner I, Braun WE: A subgroup of ankylosing spondylitis associated with HLA-B7 in American Blacks. *Arthritis Rheum* 21: 569-570, 1978
26. Khan MA, Khan MK, Kushner I. Evidence of decreased survival in ankylosing spondylitis by life-table analysis. *Arthritis Rheum* 22: 628, 1979
27. Campbell PB, Khan MA, Kushner I: Demonstration of a monocyte leukotactic defect in ankylosing spondylitis. *Arthritis Rheum* 22: 597, 1979

28. Khan MA, Kushner I, Braun WE: Genetic heterogeneity in primary ankylosing spondylitis. *Arthritis Rheum* 22: 628, 1979
29. Schultz D, Kushner I, Banker B: Intact C-reactive protein responses after chemical sympathectomy. *Fed Proc* 38:1348, 1979
30. Ballou SP, Chung-Park M, Waggoner DM, Kushner I: Prognostic value of renal biopsy in lupus nephritis. *Clin Res* 28: 138A, 1980
31. Khan MA, Kushner I, Braun WE: Association of HLA-A2 with uveitis in HLA-B27 positive patients with ankylosing spondylitis. *Clin Res* 28: 141A, 1980
32. Khan MA, Kushner I, Braun WE, Ballou SP: Clinical and HLA studies of familial arthritis. *Clin Res* 28: 141A, 1980
33. Khan MA, Braun WE, Steinberg AG, Kushner I, DeJelo CL, Ballou SP. Hla studies of familial rheumatoid arthritis. *Clin Res* 28:29A, 1980
34. Khan MA, Kushner I, Braun WE: Association of HLA-A2 with uveitis in HLA-B27 positive patients with ankylosing spondylitis. *Arthritis Rheum* 23: 703, 1980
35. Khan MA, Miron SD, Patel S, Kushner I, Ballou SP, Wiesen E, Bellon E. The comparative value of standard radiography, quantitative scintigraphy and computerized tomography in sacroiliitis. *Clin Res* 28: 778A, 1980
36. Khan MA, Miron SD, Kushner I, Ballou SP, Wiesen EJ, Bellon EM: The comparative value of standard radiography, quantitative scintigraphy and computerized tomography in sacroiliitis. *Arthritis Rheum (Suppl)* 24: S119, 1981
37. Miron SD, Khan MA, Wiesen EJ, Kushner I, Bellon EM: An improved technique for quantitative sacroiliac scintigraphy. *Proceedings of the 29th Annual Meeting of the Association of University Radiologists*, page 35, 1981
38. Ballou SP, Khan MA, Kushner I: Clinical features of lupus: differences related to age of onset and race. *Arthritis Rheum (Suppl)* 24: S120, 1981
39. Khan MA, Kushner I, Weitkamp LR: Genetics of HLA-associated disease: Rheumatoid arthritis. *Aust NZ J Med* 12:564-565, 1982
40. Khan MA, Hammoudeh M, Braun WE, Kushner I: Genetics of HLA associated diseases in ankylosing spondylitis and related spondyloarthropathies. *Aust NZ J Med* 12: 564, 1982
41. Chelladurai M, Macintyre SS, Kushner I: In vivo studies of serum C-reactive (CRP) turnover and rate of synthesis in rabbits. *Fed Proc* 41: 868, 1982
42. Khan MA, Kushner I, Weitkamp LR: Genetics of HLA-associated disease: rheumatoid arthritis. *Clin Res* 30: 292A, 1982
43. Khan MA, Kushner I, Weitkamp LR: Genetics of HLA-associated disease: rheumatoid arthritis. *Arthritis Rheum* 25: S136, 1982
44. Ballou SP, Khan MA, Kushner I, Braun WE: HLA-DR3 is not associated with antibodies to DNA. *Clin Res* 30: 803A, 1982
45. Samols D, Macintyre S, Kushner I: Attempts to identify the primary translation product of rabbit C-reactive protein. *Fed Proc* 42: 419, 1983
46. Mahajan D, Macintyre S, Preston J, Kushner I: Tissue localization of exogenously administered C-reactive protein in rabbits. *Fed Proc* 42:421, 1983
47. Preston J, Kushner I, Schultz D, Mahajan D, Macintyre S: Abolition by carrageenan of serum C-reactive protein response in rabbits is due to rapid removal of this protein from serum. *Fed Proc* 42: 421, 1983
48. Macintyre S, Schultz D, Kushner I: Studies of the relationship between synthesis and secretion of C-reactive protein during the acute phase response. *Fed Proc* 42: 600, 1983
49. Khan MA, S van der Linden, I Kushner: Symptomatic ankylosing spondylitis without radiographic sacroiliitis in B27-positive relatives. Clin Res 31: 804A, 1983
50. Yamashita TS, Khan MA, Kushner I: Pedigree analysis of 24 multiple-case families with rheumatoid arthritis. Clin Res 31: 735A, 1983
51. Khan MA, Yamashita TS, Kushner I: Genetic linkage studies of familial rheumatoid arthritis. Clin Res 31: 784A, 1983
52. Ballou SP, Khan MA, Kushner I: Studies of monocyte Fc receptor-mediated phagocytic activity in ankylosing spondylitis. Clin Res 31: 801A, 1983
53. Yue CC, Regier A, Kushner I: The arthritis of heterotopic ossification shows elevated synovial protein concentration without synovial leukocytosis. *Clin Res* 31: 808A, 1983
54. Macintyre SS, Schultz D, Kushner I: Studies of the relationship between synthesis and secretion of C-reactive protein by cultured hepatocytes. *J Cell Biol* 97: 434a, 1983
55. Van der Linden Sj, Valkenburg HA, Cats A, Khan MA, Kushner I: Symptomatic ankylosing spondylitis without radiographic sacroiliitis in B27-positive relatives. *Br J Rheumatol* 23: 148, 1984
56. Khan MA, Yamashita TS, Kushner I. Genetic linkage studies of familial rheumatoid arthritis. *Ann Rheum Dis* 43: 118, 1984

57. Khan MA, van der Linden S, Kushner I: Symptomatic ankylosing spondylitis without radiographic sacroiliitis in B27-positive relatives. *Arthritis Rheum* 27: S31, 1984
58. Khan MA, Yamashita TS, Kushner I: Genetic analysis of 24 multiple case families with rheumatoid arthritis. *Arthritis Rheum* 27: S26, 1984
59. Ballou SP, Khan MA, Kushner I, Zachary A, Braun WE: Association of systemic lupus erythematosus with HLA-Cw7. *Clin Res* 32: 755A, 1984
60. Ballou SP, Khan MA, Kushner I: Studies of monocyte phagocytic function in ankylosing spondylitis. *Clin Res* 32: 756A, 1984
61. Ballou SP, Khan MA, Kushner I: Prospective evaluation of intravenous pulse methylprednisolone followed by alternate-day corticosteroid therapy in systemic lupus erythematosus. *Clin Res* 32: 819A, 1984
62. Khan MA, Yamashita TS, Kushner I: The mode of inheritance of rheumatoid arthritis. *Human Immunology* 12: 120-121, 1985
63. Ballou SP, Khan MA, Kushner I: Studies of monocyte phagocytic function in ankylosing spondylitis. *Arthritis Rheum* 28:S50, 1985
64. Schultz D, Preston J, Macintyre SS, Kushner I: Induction of C-reactive protein synthesis *in vitro* by monokine preparations. *J Leukocyte Biology*, 37:741, June 1985
65. S Ballou, J. Buniel, I. Kushner: Depression of human monocyte Fc receptor-mediated phagocytosis by C-reactive protein (CRP). *Clin Res* 33:839A, 1985
66. SP Ballou, MA Khan, WE Braun, I Kushner: Association of the HLA-C Allele, Cw7, with systemic lupus erythematosus. *Clin Res* 33:916A, 1985
67. MA Khan, TL Reynolds, SP Ballou, I Kushner: HLA Haplotype distribution in familial rheumatoid arthritis. *Clin Res* 33:920A, 1985
68. C Herbst, S Ballou, J Buniel, I Kushner. Depression of human monocyte Fc receptor-mediated phagocytosis by C-reactive protein (CRP). *Arthritis Rheum* 29:S100, 1986
69. A Mackiewicz, S Mackiewicz, SP Ballou, I Kushner. Microheterogeneity of alpha 1-acid glycoprotein (AGP) in detection of intercurrent infection in systemic lupus erythematosus (SLE). *Arthritis Rheum*, 30:S21, 1987
70. Mackiewicz A, Schultz D, Ganapathi MK, Macintyre SS, Kushner I. Role of monokines in regulation of acute phase protein (APP) biosynthesis in rabbit hepatocytes. *Fed Proc* 46:2463, 1987
71. Ganapathi MK, Schultz D, Mackiewicz A, Samols D, Hu S-I, Brabenec A, Macintyre SS, Kushner I. Regulation of synthesis of human C-reactive protein (CRP) and other acute phase proteins (APP) by monokines. *Fed Proc* 46:1428, 1987
72. Mackiewicz A, Ganapathi MK, Schultz D, Kushner I. Induction and glycosylation of acute phase proteins (APP) are regulated by different mechanisms. *Clinical Research* 35:565A, 1987
73. Ganapathi MK, Schultz D, Mackiewicz A, Samols D, Hu S-I, Brabenec A, Macintyre SS, Kushner I. Regulation of synthesis of human acute phase proteins by monokines. *Arthritis Rheum* 30:S67, 1987
74. Mackiewicz A, Ganapathi MK, Schultz D, Kushner I. Induction and glycosylation of acute phase proteins are regulated by different mechanisms. *Arthritis Rheum* 30:S67, 1987
75. Mackiewicz A, Mackiewicz S, Ballou SP, Kushner I. Altered pattern of a α 1-acid glycoprotein (AGP) glycosylation in detection of intercurrent infection in systemic lupus erythematosus (SLE). *Arthritis Rheum* 30:S86, 1987
76. Ganapathi MK, Mackiewicz A, Samols D, Brabenec A, Hu S-I, Kushner I, Schultz D. Caffeine potentiates the induction of C-reactive protein (CRP) by monokines. *Fed Proc* 46:1940, 1987
77. Hu S-I, Samols D, Schultz D, Macintyre S, Kushner I. Hepatocytes have a special intracellular mechanism to regulate the secretion of C-reactive protein. *Fed Proc* 46:2107, 1987
78. Mackiewicz A, van der Linden S, Khan MA, Kushner I. Serum IgA and acute phase proteins in HLA B27(+) versus B27(-) ankylosing spondylitis. *Arth Rheum* 31(Suppl. 1):R29, 1988
79. Ganapathi MK, Mackiewicz A, Schultz D, Samols D, Brabenec A, Hu S-I, Macintyre SS, Kushner I. Multiple cytokines regulate synthesis of human acute phase proteins. *J Leuk Biol* 42:607, 1987
80. Macintyre S, Samols D, Kushner I, Ballou S. Retention of C-reactive protein (CRP) within the endoplasmic reticulum (ER) is regulated during the acute phase response (APR). *The FASEB J* 2:A548, 1988
81. Ganapathi MK, Schultz D, Mackiewicz A, Samols D, Kushner I. Effect of Interferon γ /B-cell stimulatory factor (IFN γ /BSF-2) on acute phase protein synthesis by Hep 3B cells. *The FASEB J* 2:A1602, 1988
82. Mackiewicz A, van der Linden S, Reynolds TL, Khan MA, Kushner I. Positive correlation between serum levels of IgA and acute phase proteins (APP) suggests a pathogenic role of gastrointestinal (GI) inflammation in ankylosing spondylitis (AS). *Arth & Rheum* 31:S96, 1988
83. Ganapathi MK, Schultz D, May LT, Sehgal PB, Kushner I. Role of Interferon B2/Interleukin-6 (IFN B2/IL-6) in induction of C-reactive protein (CRP) and serum amyloid A (SAA) in human hepatoma cell lines. *Clin Res* 36:879A, 1988

84. Macintyre SS, Samols D, Kushner I, Ballou SB. Evidence that the differential retention of C-reactive protein within the endoplasmic reticulum is regulated during the acute phase response. *J Cell Biol* 109:764a, 1988
85. Ganapathi MK, Brabenec A, Schultz D, Kushner I. Effect of phorbol esters on induction of C-reactive protein (CRP) and serum amyloid A (SAA) by the interaction of cytokines. *FASEB J* 3:A1368, 1989
86. Ganapathi MK, Kushner I, Brabenec A, Schultz D. Effect of phorbol esters on induction of acute phase proteins by cytokines. 2nd Cold Spring Harbor Laboratory Conference, Regulation of Liver Gene Expression, New York 1989, pp 68
87. Dowdell AS, Kelly K, Ballou SP, Kushner I. Lupus in the inner city: diagnostic screening, follow-up and community awareness. *Arth & Rheum* 32:S189, 1989
88. Iskander M, Buniel J, Ballou S, Kushner I. Epidemiologic studies of systemic lupus erythematosus in an urban minority population. *Arthritis Rheum* 32:S31, 1989
89. Kushner I, Schultz D, Ganapathi MK. Tumor necrosis factor α (TNF α) can participate in induction of human serum amyloid A (SAA). *Cytokine* 1:110, 1990
90. Kushner I, Mackiewicz A, Ganapathi MK, Schultz D. Cytokine interaction in regulation of acute phase protein synthesis. *Cytokine* 1:110, 1990
91. Kushner I, Mackiewicz A, Speroff T. Acute phase proteins manifest distinct responses to cytokine combinations. *Clin Res* 39:272A, 1991
92. Lozanski G, Ballou S, Kushner I. Effects of flurbiprofen on cytokine production from human monocytes and monocyte cell lines. *FASEB J* 5:A512, 1991
93. Jiang S, Samols D, Kushner I. Levels of regulation of acute phase protein gene expression. *FASEB J* 5:A626, 1991
94. Jiang S, Kushner I, Samols D. Both transcriptional and post-transcriptional mechanisms contribute to the regulation of the acute phase response in Hep 3B cells. *FASEB J* 6:A1937, 1992
95. Damtew B, Rzewnicki D, Lozanski G, Kushner I. Effect of IL-1 receptor antagonist (IL-1ra) on induction of acute phase proteins in Hep 3B cells. *Clin Res* 40:228A, 1992
96. Jiang S-L, Samols D, Kushner I. The acute phase response in Hep 3B cells is regulated by both transcriptional and post-transcriptional mechanisms. *Clin Res* 40:337A, 1992
97. Kushner I, Lozanski G, Mion LC, Rzewnicki D. Microheterogeneity of alpha-1 acid glycoprotein (AGP) in apparently healthy elderly individuals. *The Gerontologist* 32:Special Issue II:66, 1992
98. Kushner I, Mion LC, Rzewnicki D, Sipe J, Hodder S. C-reactive protein (CRP) and serum amyloid A (SAA) levels in healthy elderly individuals. *The Gerontologist* 32:Special Issue II:4, 1992
99. Kushner I, Jiang S-L, Samols D, Damtew B, Lozanski G, Rzewnicki D. Regulation of serum amyloid A synthesis. 8th International Congress of Immunology, Budapest, 1992
100. Jiang S-L, Macintyre SS, Greber I, Samols D, Kushner I. The acute phase response in Hep 3B cells is regulated by both transcriptional and post-transcriptional mechanisms. Cold Spring Harbor symposium on Liver gene expression, 1993
101. Kushner I. Overview of the acute phase response. *Revista Espanola de Rheumatologia* 20: (Suppl 1) 10, 1993
102. Jiang S-L, Samols D, Kushner I. Transcriptional regulation of C-reactive protein (CRP) expression in Hep 3B cells. *FASEB J* 8:A221, 1994
103. Zhang X, Samols D, Kushner I. Cytokine regulation of C-reactive protein (CRP) expression as assessed by transient transfection of Hep 3B cells. *FASEB J* 8:A219, 1994
104. Zhang D., Jiang SL, Samols D, Kushner I. The effect of interleukin-1 (IL-1) on C-reactive protein (CRP) expression in Hep 3B cells is exerted at the transcriptional level. *Clin Res* 42:136A, 1994
105. Kushner I, Jiang SL, Zhang D, Samols D. Regulation of C-reactive protein (CRP) expression in Hep 3b cells. *J Cell Biochem. Abstracts* 18B:323, 1994
106. Kushner I, Jiang SL, Zhang D, Lozanski G, Samols D. Evaluation of possible post-transcriptional mechanisms in induction of SAA and CRP by IL-6 and IL-1. *Cytokine* 6:547, 1994
107. Zhang D, Samols D, Kushner I. Effects of Stat3 and NF- κ B on Greactive protein (CRP) transcription in Hep3B cells. *FASEB J*. 9:A856, 1995
108. Lozanski G, Jiang SL, Samols D, Kushner I. Different mechanisms regulate degradation of C-reactive protein (CRP) and serum amyloid A (SAA) mRNA. *FASEB J*. 9:A857, 1995
109. Zhang D, Samols D, Kushner I. Effects of Stat3 and NF- κ B on Greactive protein (CRP) transcription in Hep3B cells. *Cytokine* 7:647, 1995
110. Samols D, Zhang D, Sun M, Kushner I. Effect of STAT3 on acute phase protein gene expression in Hep3B cells. *FASEB J* 10:A1428, 1996
111. Lozanski G, Berthier F, Kushner I. Ceramide participates in transduction of cytokine effects onthe acute phase proteins CRP and SAA but not fibrinogen. *European Cytokine Network* 7:472,1996
112. Sun M, Zhang D, Evans J, Samols D, Kushner I. Roles of STAT3 and C/EBP binding sites in C-reactive protein (CRP) transcription induced by IL-6 in Hep3B cells. *J Invest Med* 45: 271A, 1997

113. Sun M, Zhang D, Evans J, Samols D, Kushner I. Roles of STAT3 and C/EBP binding sites in C-reactive protein (CRP) transcription induced by IL-6 in Hep3B cells. *Cytokine* 9:916,1997
114. Agrawal A, Cha-Molstad H, Samols D, Kushner I. Transcription factors C/EBP α and NF κ B act synergistically to induce endogenous C-reactive protein (CRP) expression in Hep3B cells *FASEB J* 15:1693, 2001.

B. LETTERS

1. Keiser HD and Kushner I: Blasts in Wiscott-Aldrich Syndrome. *Lancet* 2: 836, 1967
2. Khan MA, Kushner I, Braun WE: Low incidence of HLA-B27 in American Blacks with spondyloarthropathies. *Lancet*, February 28, 1976, p 483
3. Crowe W, Kushner I, Clough JD, Vignos PJ, Jr: Comparison of the Crithidia Luciliae, Millipore filter, Farr, and hemagglutination methods for detection of antibodies to DNA. *Arthritis Rheum* 21, 390, 1978
4. Khan MA, Kushner I, Braun WE: An association of HLA-Bw16 with ankylosing spondylitis in B27-negative Whites. *Lancet* 1, 1370-1371, 1978
5. Khan MA, Kushner I, Ballou SP, Braun WE: Familial rheumatoid arthritis and HLA-DRw4. *Lancet* 1:921-922, 1979
6. Hammoudeh M, Khan MA, Kushner I. Unilateral rheumatoid arthritis. *Arthritis Rheum* 24:1218, 1981
7. Kushner I: Complaints about "The Chief Complaint". *N Engl J Med* 307:1278, 1982
8. Ballou SP, Kushner I: Advantages of the Crithidia Assay in SLE. *J Rheumatol* 10: 337, 1983
9. Iannuzzi L, Dawson N, Kushner I: Does drug therapy slow radiographic deterioration in rheumatoid arthritis? *NEJM* 310, 856, 1984
10. Kushner I: Iron, Ferritin, and AIDS. *Lancet* 1: 633, 1984
11. Kushner I: C-Reactive Protein in Meningitis. *Lancet* 1:741, 1984
12. Ballou SP, Kushner I: Pregnancy and systemic sclerosis. *Arthritis Rheum* 28. 238, 1985
13. Kushner I: Cytokine regulation of acute phase proteins. *Hosp Practice* 24:16, August 15, 1989
14. Ross RD, Frengley JD, Mion LC, Kushner I: Elevated C-reactive protein in older people. *J Am Geriat Soc* 40:104, 1992
15. Kushner I: Anemia of chronic disease: A misnomer? *Ann Int Med* 116:521, 1992
16. Kushner I: C-reactive protein levels as a direct indicator of interleukin 6 levels in humans in vivo. Reply to the letter by Battaille and Klein. *Arthritis Rheum* 35:983-984, 1992
17. Kushner I: C-reactive protein and atherosclerosis. *Science* 297:520, 2002.
18. Kushner I, Sehgal A. The arterial inflammation hypothesis: Reply to the letter by Bhatt and Topol. *Arch Intern Med* 162:2249-2251, 2002.
19. Kushner I, Agrawal A. Letter in response to C. W. van den Berg and B. P. Morgan: 'Letter in response to A. Agrawal: CRP after 2004'. *Molecular Immunology*. 44:670-1, 2007
20. Kushner I, Elyan M. Why does C-reactive protein predict coronary events? *Am J Med*. 2008 Jul;121(7):e11.
21. Kushner, I, *PLOS Medicine* Interleukin-6, C-reactive Protein and Coronary Heart Disease 2008 <http://medicine.plosjournals.org/perlserv/?request=read-response&doi=10.1371/journal.pmed.0050078>

IV. BOOKS AND BOOK CHAPTERS

A. BOOKS EDITED.

1. Kushner I, Volanakis J, Gewurz H (eds.). C-reactive Protein and The Plasma Protein Response to Tissue Injury. *Ann NY Acad Sci*, Vol 389, pp 1-479, 1982
2. Kushner I (ed.). Understanding Arthritis, Arthritis Foundation, Scribner & Sons, NY, 1985
3. Mackiewicz A, Kushner I, Baumann H (eds.). Acute Phase Proteins: Molecular Biology, Biochemistry, Clinical Applications. CRC Press, Boca Raton, 1993

B. BOOK CHAPTERS

1. Kushner I. Acute Septic Arthritis. In Current Diagnosis, Vol 3, HF Conn, RB Conn, WB Saunders (eds.), Philadelphia, 1971, pp 895-897
2. Crowe WE and Kushner I. Bursitis and Tendinitis. In Current Diagnosis, Vol 5, HF Conn, RB Conn, WB Saunders (eds.), Philadelphia, 1971, pp 105-107
3. Kushner I. The Acute Phase Reactants and the Erythrocyte Sedimentation Rate. In Textbook of Rheumatology, 1st edition. W Kelley, E Harris, S Ruddy, and C Sledge (eds.), WB Saunders, Philadelphia, 1980, pp 669-676
4. Davies P and Kushner I. Biochemical Basis of Inflammation. In The Biochemical Basis of Human Disease, RS Elkeles and AS Tavill (eds.), Blackwell and Lippincott, 1983, pp 623-655

5. Kushner I. Foreword *in* C-reactive Protein and the Plasma Protein Response to Tissue Injury. Ann NY Acad Sci, Vol 389, 1982, p X1.
6. Khan MA, Kushner I. Diagnosis of Ankylosing Spondylitis: 1983. In Progress in Clinical Rheumatology Vol. I, AS Cohen (ed.), Grune & Stratton, New York, 1984, pp 145-178
7. Ballou SP, Kushner I. How Important is Renal Biopsy in Managing Patients with Renal Disease: The Case Against Its Utility. Lupus Nephritis. In Controversies in Nephrology and Hypertension, RG Narins (ed.), Churchill Livingstone, New York, 1984, pp 271-284
8. Kushner I. The Acute Phase Reactants. In Textbook of Rheumatology, 2nd edition, W Kelley, E Harris, S Ruddy, and C Sledge (eds.), WB Saunders, Philadelphia, 1985, pp 653-664
9. Ballou SP, Kushner I. The Crithidia Luciliae Immunofluorescent Test for Antibodies to DNA. In Manual of Clinical Laboratory Immunology, 3rd ed., JL Fahey., H Friedman, R Rose (eds.), American Society for Microbiology, Washington, D.C., Chapter 112, pp 740-43, 1985
10. Kushner I. The acute phase response - an overview. Chapter 35 in Immunochemical Techniques, a volume (163) of Methods in Enzymology, G DiSabato (ed), Academic Press, 1988, pp. 373-382
11. Kushner I. Erythrocyte sedimentation rate and the acute phase reactants. In Textbook in Rheumatology, 3rd edition, W. Kelley, E. Harris, S. Ruddy, C. Sledge (eds), W. B. Saunders, Philadelphia, 1989, pp 719-727
12. Mackiewicz A, Kushner I. Biochemical markers of inflammation in spondylitis. In Hanley & Belfus, Inc., Philadelphia, 1990, pp 553-560
13. Kushner I. The acute phase response: From Hippocrates to cytokine biology. In Cytokines and Inflammation, J. Bienvenu, D. Fradelizi (ed) John Libbey Eurotext, Paris, 1991, pp 3-13
14. Mackiewicz A, Pawlowski T, Gorny A, Kushner I. Glycoforms of α_1 -acid glycoprotein in the management of rheumatic patients. In Affinity Electrophoresis: Principles and Applications, J. Breborowicz and A. Mackiewicz (eds.), CRC Press Inc., Boca Raton, 1992, pp 229-238
15. Mackiewicz A, Pos O, van der Stelt M, Yap SH, Karcinska M, Laciak M, Dewey MJ, Berger FG, Baumann H, Kushner I, vanDijk W. Regulation of glycosylation of acute-phase proteins by cytokines in vitro. In Affinity Electrophoresis: Principles and Applications, J. Breborowicz and A. Mackiewicz (eds.), CRC Press Inc., Boca Raton, 1992, pp 135-153
16. Ballou SP, Kushner I. C-reactive protein and the acute phase response. In Advances in Internal Medicine, Vol 37, Stollerman GH (ed), Mosby Year Book, Chicago, IL, 1992, pp 313-336
17. Ballou SP, Kushner I. Laboratory evaluation of inflammation. In Textbook of Rheumatology, 4th edition, W. Kelley, E. Harris, S. Ruddy, C. Sledge (eds), W. B. Saunders, Philadelphia 1993, pp 671-680
18. Kushner I. Regulation of the acute phase response by cytokines. In Clinical Applications of Cytokines: Role in pathogenesis, diagnosis and therapy. JJ Oppenheim, JJ Rossio and AJH Gearing, (eds.), Oxford University press, New York, pp 27-34, 1993
19. Kushner I, Mackiewicz A. The acute phase response: an overview. In Acute Phase Proteins: Molecular Biology, Biochemistry and Clinical Applications. A Mackiewicz, I Kushner, H Baumann (eds) CRC Press, Boca Raton, 1993, pp 1-19
20. Kushner I, Dawson NV. Aggressive therapy does not substantially alter the long term course of RA. So what else is new? In Rheumatic Disease Clinics of North America. Vol. 19(1), JS Sargent, RS Panush (eds) WB Saunders, Philadelphia, 1993, pp 163-172
21. Ballou SP, Kushner I. Laboratory evaluation of inflammation. In Arthritis Surgery. CB Sledge, ED Harris, Jr., S. Ruddy, WN Kelley (eds) WB Saunders, Philadelphia, 1994, pp 350-358
22. Kushner I, Ballou SP. Laboratory markers in rheumatoid arthritis. In Rheumatoid arthritis: clinical tools for outcome assessment. The Arthritis Foundation. (EP Gall, A. Gibofsky, eds.), 1994
23. Kushner I, Rzewnicki D. The acute phase response: general aspects. In Reactive amyloidosis and the acute phase response. G. Husby. (ed) Bailliere's Clinical Rheumatology, 1994, 8:513-530
24. Ballou SP, Kushner I. Laboratory evaluation of inflammation. In Textbook of Rheumatology, 5th edition, W. Kelley, E. Harris, S. Ruddy, C. Sledge (eds), W.B. Saunders, Philadelphia, 1996, pp 699-706
25. Kushner I, Rzewnicki D. The acute phase response. In Fever: Basic Mechanisms and Management, 2nd Ed. Philip A. Mackowiak, (ed.), Raven Press, New York, NY, 1997, pp 165-176
26. Kushner I, Rzewnicki D. Acute phase response. In Inflammation: Basic Principles and Clinical Correlates, 3rd Ed. R. Snyderman, J Galin (eds.), Lippincott Williams & Wilkins, Philadelphia, 1999, pp 317-330
27. Ballou SP, Kushner I. Laboratory evaluation of inflammation. In Kelley's Textbook of Rheumatology, 6th edition, W. Kelley, E. Harris, S. Ruddy, C. Sledge (eds), W.B. Saunders, Philadelphia, 2001, (pp 697-703)
28. Samols D, Agrawal A, Kushner I. Acute Phase Proteins. In: Oppenheim, J.J. and Feldman, M. (Eds.). Cytokine Reference On-Line, 2002, Academic Press, Harcourt, London, UK. Website: www.academicpress.com/cytokinereference, 24-hour free access.

29. Ballou SP, Kushner I. Laboratory evaluation of inflammation. In Kelley's Textbook of Rheumatology, 7th edition, Harris ED, Budd RC, Genovese MC, Firestein GS, Sargent JS, Ruddy, S, Sledge CB (eds), Elsevier Saunders, Philadelphia, 2005 (pp 720-727)
30. Kushner I, Ballou SP. Acute-phase reactants and the concept of inflammation. In Kelley's Textbook of Rheumatology, 8th edition, Firestein GS, Budd RC, Harris ED, McInnes, Ruddy, S, Sargent JS, (eds), Elsevier Saunders, Philadelphia, 2009 (pp 767-775)

8/23/2010