

DEMOGRAPHIC INFORMATION:

Current Appointments:

Assistant Professor of Medicine
Divisions of Rheumatology and Allergy
Department of Medicine
Johns Hopkins University

Personal Data:

Business Address: Division of Rheumatology
5200 Eastern Avenue
Mason F. Lord Building, Center Tower
Suite 4100, Room 404
Baltimore, MD 21224
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Email: clifton.bingham@jhmi.edu

Education and Training (in chronological order)

Undergraduate

B.A. 1986 Northwestern University
Evanston, IL
Neurobiology and Physiology

Graduate/Doctoral

M.D. 1990 Columbia University College of Physicians and Surgeons
New York, NY

Postdoctoral Training

1987 Summer Fellowship in Community Psychiatry
National Institutes of Mental Health, New York State Psychiatric
Institute, New York, NY
1990-93 Intern and Resident in Internal Medicine
Columbia-Presbyterian Medical Center, New York, NY
1993-96 Clinical Fellow in Rheumatology
Brigham and Women's Hospital, Boston, MA
1994-96 Research Fellow in Medicine, Lab of K. Frank Austen, MD
Harvard Medical School, Boston, MA

1996-98 Clinical Fellow in Allergy and Immunology
Brigham and Women's Hospital, Boston, MA

Professional Experience (in chronological order)

1993-96 Clinical Fellow in Rheumatology
Brigham and Women's Hospital, Beth Israel Hospital, West
Roxbury Veterans Administration Hospital, Boston, MA

1993-99 Staff Physician, Internal Medicine, Urgent Care
Harvard-Pilgrim Health Plan, Harvard-Vanguard Medical
Associates, Somerville, MA

1996-98 Clinical Fellow in Allergy and Clinical Immunology, Brigham
and Women's Hospital, Massachusetts General Hospital,
Children's Hospital, Boston, MA

1996-99 Instructor in Medicine
Harvard Medical School, Boston, MA

1996-99 Staff Physician in Rheumatology
Brigham and Women's Hospital, Boston, MA

1998-99 Staff Physician in Allergy and Immunology
Massachusetts General Hospital and Brigham and Women's
Hospital, Boston, MA

1999-2004 Assistant Professor of Medicine
NYU School of Medicine, New York, NY

1999-2004 Attending Physician
Bellevue Hospital Center, New York, NY

1999-2004 Attending Physician
Hospital for Joint Diseases, New York, NY

1999-2004 Attending Physician
Tisch Hospital, NYU Medical Center, New York, NY

1999-2001 Co-Director, Ambulatory Clinical Research Center
Hospital for Joint Diseases, New York, NY

1999-2001 Director, Arthritis Clinic
Bellevue Hospital Center, New York, NY

2001-2004 Consultant in Rheumatology
VA Medical Center, New York Campus, New York, NY

2001-2002 Director, Ambulatory Clinical Research Center

Hospital for Joint Diseases, New York, NY

- 2002-2004 Director, Peter D. Seligman Center for Advanced Therapeutics
NYU-Hospital for Joint Diseases, New York, NY
- 2005-present Assistant Professor of Medicine
Johns Hopkins University, Baltimore, MD
- 2005-present Attending Physician
Johns Hopkins Medical Institutions, Baltimore MD
- 2005-present Attending Physician
Good Samaritan Hospital, Baltimore, MD

RESEARCH ACTIVITIES:

Publications:

Peer-reviewed Scientific Articles

1. Johnson L, Seldin D, Keller A, Bhatia K, **Bingham C**, Tresgallo M. Dual isotope thallium and indium antimyosin SPECT imaging to identify acute infarct patients at further ischemic risk. *Circulation*, 1990; 81: 37-45.
2. Murakami M, Austen KF, **Bingham CO III**, Friend DS, Penrose JF, Arm JP. Interleukin-3 regulates development of the 5-lipoxygenase/leukotriene C₄ synthase pathway in mouse mast cells. *J Biol Chem*, 1995; 270: 22653-6.
3. Murakami M, **Bingham CO III**, Matsumoto R, Austen KF, Arm JP. IgE-dependent activation of cytokine-primed mouse cultured mast cells induces a delayed phase of prostaglandin D₂ generation via prostaglandin endoperoxide synthase-2. *J Immunol*, 1995; 155:4445-53.
4. **Bingham CO III**, Murakami M, Fujishima H, Hunt JH, Austen KF, Arm JP. A heparin-sensitive phospholipase A₂ and prostaglandin endoperoxide synthase-2 are functionally linked in the delayed phase of prostaglandin D₂ generation in mouse bone marrow-derived mast cells. *J Biol Chem*, 1996; 271: 25936-44.
5. Fujishima H, Sanchez R, **Bingham CO III**, Lam BK, Saperstein A, Bonventre JV, Austen KF, Arm JP. Cytosolic phospholipase A₂ is essential for both the immediate and the delayed phases of eicosanoid generation in mouse bone marrow-derived mast cells. *Proc Natl Acad Sci USA*, 1999; 96: 4803-7.
6. Shadick NA, Liang MH, Partridge AJ, **Bingham C**, Wright E, Fossel AH, Sheffer AL. The natural history of exercise-induced anaphylaxis: Survey results from a 10-year follow-up study. *J Allergy Clin Immunol*, 1999; 104: 123-7.

7. **Bingham CO III**, Fijneman RJA, Friend DS, Goddeau RP, Rogers RA, Austen KF, Arm JP. Low molecular weight group IIA and group V phospholipase A₂ enzymes have different intracellular locations in mouse bone marrow-derived mast cells. *J Biol Chem*, 1999; 274: 31476-84.
8. Ho C-I, Arm JP, **Bingham CO III**, Choi A, Austen KF, Glimcher LH. A novel group of phospholipase A₂ preferentially expressed in Th2 cells. *J Biol Chem*, 2001; 276: 18321-6.
9. Greenberg JD, **Bingham CO III**, Abramson SB, Reed G, Sebaldt RJ, Kremer J. Effects of cardiovascular comorbidities and concomitant aspirin use on selection of cyclooxygenase inhibitor among rheumatologists. *Arthritis Care and Research*. (In press)
10. Mor A, **Bingham CO III**, Barisono L, Lydon E, Belmont HM. Proliferative lupus nephritis and leukocytoclastic vasculitis during treatment with etanercept. *J Rheumatol* 2005; 32:740-3.

Review Articles

1. **Bingham CO III**, Austen KF. Phospholipase A₂ enzymes in eicosanoid generation. *Proc Assoc Am Physicians*, 1999; 11: 516-24.
2. **Bingham CO III**, Austen KF. Mast cell responses in the development of asthma. *J Allergy Clin Immunol*, 2000; 105: 527-34.
3. Attur M, **Bingham CO III**, Dave M, Abramson SB, Amin AR. Model protocol to study pharmacogenomics in inflammatory diseases: Human rheumatoid arthritis. *Drug Development Research*, 2000; 49: 29-33.
4. **Bingham CO III**. Development and clinical application of COX-2-selective inhibitors for the treatment of osteoarthritis and rheumatoid arthritis. *Cleveland Clinic Journal of Medicine*, 2002; 69: S1-1-8.
5. **Bingham CO III**. The pathogenesis of rheumatoid arthritis: pivotal cytokines involved in bone degradation and inflammation. *J Rheumatology*; 2002; 29 Suppl 65: 3-9.
6. Imperato AK, **Bingham CO III**, Abramson SB. Overview of benefit/risk of biological agents. *Clin Exp Rheumatol* 2004; 22: S108-14.
7. Sesin CA, **Bingham CO III**. Remission in rheumatoid arthritis: Wishful thinking or clinical reality? *Seminars in Arthritis Rheum* (in press).

Book Chapters

1. **Bingham CO III**, Austen KF. The molecular and cellular biology of the mast cell. In: Reedberg IM, Eisen AZ, Wolff K, Austen KF, Goldsmith LA, Katz SI, and Fitzpatrick TB, editors. *Dermatology in General Medicine 5th Edition*. New York: McGraw Hill; 1999, 414-22.

2. **Bingham CO III**, Arm JP, Austen KF. Arachidonic acid metabolism in mast cells. In: Razin E and Rivera JP, editors. *Signal Transduction in Mast Cells and Basophils*. New York: Springer-Verlag, 1999; 350-61.
3. **Bingham CO III**, Abramson SB. Mediators of inflammation, tissue destruction, and repair: Cellular Constituents. *Primer on the Rheumatic Diseases (12th Edition)*. Klippel JH, Crofford LJ, Stone JH, Weyand CM. (Eds). Atlanta, GA: Arthritis Foundation, 2001:51-8.
4. **Bingham CO III**, Abramson SB. Mechanisms of inflammation, *Mechanisms in Rheumatology*. Ed. Tannenbaum H., Russell AS, Core Health Services, Toronto 2001;Chapter 4: 29-39.
5. Hsieh FH, **Bingham CO III**, Austen KF. The molecular and cellular biology of the mast cell. In: Freedberg IM, Eisen AZ, Wolff K, Austen KF, Goldsmith LA, Katz SI, and Fitzpatrick TB, editors. *Dermatology in General Medicine 6th Edition*. New York: McGraw Hill; 2003; Chapter 32:330-5.
6. Reddy SM, **Bingham CO III**. Clinical Assessment of Psoriatic Arthritis. In KB Gordon and EM Ruderman, eds.: *Psoriasis and Psoriatic Arthritis: An Integrated Approach*. Springer-Verlag, Heidelberg. (in press).

Other Print Materials

1. Diaz A, **Bingham CO III**. Literature alert. *Current Rheumatology Reports*, 1999; 1: 5-9.
2. **Bingham CO III**. Literature alert. *Current Rheumatology Reports*, 2000; 2: 4-7,186-90,359-62.
3. **Bingham CO III**. Osteoarthritis Questions and Answers. *New York Arthritis Reporter*, Spring 2001.
4. Kulig K, **Bingham CO III**, Steele LL. Racial, ethnic, and geographic disparities in total knee arthroplasty. *N Engl J Med* 2004; 350: 305-6 (Letter).

Nonprint Materials:

1. **Bingham CO III**. Diagnostic Evaluation of Urticaria. UpToDate in Medicine (CD-ROM) UpToDate Inc., Wellesley, MA, 1998-2004.
2. **Bingham CO III**. Treatment of Urticaria. UpToDate in Medicine (CD-ROM), UpToDate Inc., Wellesley, MA, 1998-2004.
3. **Bingham CO III**. Evaluation and Treatment of Angioedema. UpToDate in Medicine (CD-ROM). UpToDate Inc., Wellesley, MA, 1999-2004.
4. Fletcher R, **Bingham CO III**. Rhinitis. UpToDate in Medicine (CD-ROM). UpToDate Inc., Wellesley, MA, 1999-2004.
5. **Bingham CO III**, Castells MC. Mastocytosis I. UpToDate in Medicine (CD-ROM). UpToDate Inc., Wellesley, MA, 2001-2004.

6. **Bingham CO III**, Castells MC. Mastocytosis II. UpToDate in Medicine (CD-ROM). UpToDate Inc., Wellesley, MA, 2001-2004.
7. Sesin CA, **Bingham CO III**. Rheumatoid Arthritis. In: EBM Solutions Guidelines for Health Care Providers and Consumers [online database]. Nashville, Tenn: EBM Solutions; September 2003.

Abstracts:

1. Quizon AI, **Bingham C III**, Arm J, Friend D, Shapiro J, Metson M, Israel E. Aspirin-sensitive asthmatics demonstrate differential metabolism of arachidonic acid. *Am J Resp Crit Care Med*, 1997; 155: A974.
2. **Bingham CO III**, Friend DS, Smith ES, Austen KF, Arm JP. BALB/c mouse bone marrow-derived mast cells contain three distinct phospholipase A₂ enzymes. *J Allergy Clin Immunol*, 1998; 101: A879.
3. **Bingham CO III**, Tobia CS, Boyce JA, Sheffer AL. Hydroxychloroquine in the treatment of autoimmune chronic urticaria, *J Allergy Clin Immunol*, 1999; 103: A592.
4. Arm JP, Fijneman RA, Goddeau RP, Austen KF, **Bingham CO III**. The low molecular weight group IIA and group V phospholipase A₂ enzymes are expressed in distinct intracellular locations in mouse mast cells. *J Allergy Clin Immunol*, 1999; 103: A736.
5. **Bingham CO**, Fijneman RJA, Friend DS, Goddeau RP, Austen KF, Arm JP. Group IIA and group V phospholipase A₂ enzymes are localized to distinct subcellular compartments in resting mouse mast cells. *Keystone Symposium, Lipid Mediators*, 1999.
6. Fijneman RJA, **Bingham CO III**, Kedersha NL, Austen KF, Arm JP. Subcellular localization of PLA₂ group V in mouse primary BMDC upon activation with A23187. *Keystone Symposium, Lipid Mediators*, 1999.
7. Ho I-C, Arm JP, **Bingham CO**, Choi A, Austen KF, Glimcher LH. A novel group of PLA₂ preferentially expressed in Th2 cells. *Keystone Symposium, Eicosanoid Lipid Mediators*, 2001.
8. **Bingham CO III**, Reddy S, Attur M, Amin A, Abramson SB. Differential expression of novel secretory phospholipase A₂ enzymes in osteoarthritic and normal human chondrocytes. *Arthritis Rheum* 2002; 46: S220. (oral presentation)
9. Gomez PF, Pillinger M, Clancy R, Attur M, Amin A, Al-mussawir H, **Bingham C**, Abramson S. The resolution of inflammation: prostaglandin E dissociates nuclear trafficking of individual NF- B Subunits (p65, p50) in stimulated rheumatoid synoviocytes. *Arthritis Rheum* 2003; 48: S571.
10. Greenberg JD, **Bingham CO**, Abramson SB, Reed G, Kremer J for the CORRONA Database. Predictors of aspirin co-prescription among NSAID and COX-2 inhibitor users with cardiovascular risk factors. *Arthritis Rheum* 2003; 48: S477.
11. **Bingham CO III**, Genovese M, Moreland L, Papadopoulos, Parsey MV. Treatment of moderate to severe rheumatoid arthritis with IL1-TRAP. *Ann Rheum Dis* 2004, OP0108. (oral presentation)

12. Keystone E, **Bingham C**, Belozeroff V, Hadjiaghi L, Veith J, Shibata A, Wallis WJ, Zhao S. Tuberculosis reporting trends with infliximab and etanercept. *Ann Rheum Dis* 2004, SAT092.
13. Mojcik CF, Burch F, Bookbinder S, McCroskery E, Vitello S, Kremer J, **Bingham C**. Results of a phase 2b study of the humanized anti-C5 antibody eculizumab in patients with rheumatoid arthritis. *Ann Rheum Dis* 2004, FRI0170.
14. **Bingham CO III**, Genovese MC, Moreland LW, Papadopoulos J, Parsey MV. Results of a phase II study of IL1-Trap in moderate to severe rheumatoid arthritis. *ACR* 2004. (oral presentation)
15. **Bingham CO III**, Reddy SM, Al-Mussawir H, Attur M, Abramson SB. A family of novel phospholipase A₂ enzymes are expressed in synovial tissue and differentially regulated by proinflammatory cytokines in rheumatoid synovial fibroblasts. *ACR* 2004.
16. **Bingham CO III**, Beary J, Cohen S, Clauw D, Cline G, Meyer J. Clinically significant placebo improvement occurs by 6 months and is maintained through 24 months in a study of knee OA pain and function. *ACR* 2004.
17. **Bingham CO III**, Cline G, Cohen S, Wenderoth D, Conaghan P, Buckland-Wright C, Beary J, Dougados M, Strand V, Meyer J. Predictors of structural progression in knee osteoarthritis over 24 months. *ACR* 2004.
18. Garnero P, **Bingham CO III**, Aronstein W, Cohen S, Conaghan P, Cline G, Beary J, Meyer J. Treatment with risedronate reduced urinary CTX-II, a specific biochemical marker of cartilage type II collagen degradation in a 24-month study of knee OA. *ACR* 2004. (oral presentation)
19. Greenberg JD, **Bingham CO III**, Reed G, Hinkle K, Abramson SB, Kremer J. Utilization of gastrointestinal prophylaxis for aspirin and NSAID-related gastropathy. *ACR* 2004
20. Rosenthal PB, Greenberg JD, Abellana VT, McCullagh EP, **Bingham CO III**. Recruitment strategies for knee OA clinical trials—You get what you ask for. *ACR* 2004
21. **Bingham CO III**, Aronstein W, Adami S, Cohen S, Conaghan P, Dougados M, Beary M, Meyer J, Garnero P. Treatment with Risedronate reduced urinary CTX-II, a specific biochemical marker of type II collagen degradation in a 24-month study of knee OA. *OARSI* 2004 (oral presentation). *Osteoarthritis Cartilage* 2004; 12 (Supp B), S9.
22. **Bingham CO III**, Beary J, Adami S, Clauw D, Cohen S, Dougados M, Cline G, Meyer J. Clinically significant placebo improvement occurs by 6 months and is maintained in a study of knee OA pain and function. *OARSI* 2004. *Osteoarthritis Cartilage* 2004; 12 (Supp B), S132.
23. **Bingham CO III**, Cline G, Adami S, Buckland-Wright C, Cohen S, Conaghan P, Beary J, Dougados M, Strand V, Wenderoth D, Meyer J. Predictors of structural progression in knee osteoarthritis over 24 months. *OARSI* 2004. *Osteoarthritis Cartilage* 2004; 12 (Supp B), S136.
24. **Bingham CO III**, Beary J, Adami S, Clauw D, Cohen S, Dougados M, Cline G, Meyer J. Significant joint space narrowing (JSN) in medial knee osteoarthritis (OA) is associated with increased joint symptoms: results of a 2-year randomized placebo-controlled study of risedronate. *OARSI* 2004. *Osteoarthritis Cartilage* 2004; 12 (Supp B), S142.

25. **Bingham CO**, Haraoui PB, Rigby WFXC, Montalvo-Lugo V, Chon Y, Eickenhorst T. Disease characteristics of patients with rheumatoid arthritis that failed to respond to infliximab and the response to etanercept therapy: preliminary data from the EMBARK Study. EULAR 2005, Vienna Austria.
26. Bathon JM, Martin RW, Fleiwchmann RM, **Bingham CO**, Whitmore JB, Eickenhorst T. Disease Activity scores using CRP versus ESR and the relationship between the EULAR and ACR responses in patients with early rheumatoid arthritis. EULAR 2005, Vienna Austria.

Manuscripts in Preparation/Review

1. Greenberg JD, **Bingham CO III**, Reed G, Hinkle K, Abramson SB, Kremer J. NSAID and aspirin gastroprotection among rheumatologists: assessment of gastrointestinal risk and coxib utilization. Arthritis and Rheumatism (submitted).
2. **Bingham CO III**, Reddy SM, Al-Mussawir H, Attur M, Abramson SB. A family of novel phospholipase A₂ enzymes are expressed in synovial tissue and differentially regulated by proinflammatory cytokines in rheumatoid synovial fibroblasts. Abstract submitted and accepted for 2004 ACR (manuscript in preparation).
3. Greenberg JD, Kurucz O, Weisenfeld S, McCullagh EM, Abellana VA, **Bingham CO III**. Urban dwelling patients with rheumatoid arthritis are at significant risk for reactivation of latent tuberculosis: an assessment of screening strategies. (In preparation).
4. **Bingham CO III**, Beary J, Cohen S, Clauw D, Cline G, Meyer J. Results of a Two-year Phase III Study of Risedronate in Knee Osteoarthritis. Abstract presented at 2004 EULAR, ACR and OARSI (manuscript in preparation).
5. **Bingham CO III**, Cline G, Cohen S, Wenderoth D, Conaghan P, Buckland-Wright C, Beary J, Dougados M, Strand V, Meyer J. Defining predictors of structural progression in knee osteoarthritis over 24 months. Abstract presented 2004 ACR, EULAR, OARSI (manuscript in preparation)
6. **Bingham CO III**, Genovese M, Moreland L, Papadopoulos, Parsey MV. Low doses of IL1-Trap improve clinical parameters and biomarkers in moderate to severe rheumatoid arthritis: results of a phase IIa clinical trial. Abstract presented at 2004 ACR (manuscript in preparation).
7. Reddy SM, **Bingham CO III**. Outcome measures in psoriatic arthritis clinical trials. Current Rheumatology Reports (invited review, in preparation).

Extramural sponsorship (Current, Pending, Previous)

Grants:

NIH, Foundation, Investigator-initiated

Current:

1/05-6/06	Oral Health in Patients with Rheumatoid Arthritis Arthritis Foundation, Arthritis Investigator Award
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- Principal Investigator: Clifton O. Bingham III
- 4/05-3/06 Safety and Efficacy of Rituximab in Chronic Urticaria (Phase I/II)
Investigator-initiated, Industry-supported (Genentech)
Principal investigator: Clifton O. Bingham III
- Pending:** Periodontal Assessment in Rheumatoid Arthritis Study
NIH-NIAMS R03 AR051356
Principal investigator: Clifton O. Bingham III
- Previous:**
- 4/01-11/04 Glucosamine Arthritis Intervention Trial (GAIT)
NIH-NIAMS N01-AR92236
Principal Investigator: Clifton O. Bingham III (HJD Site)
- 9/02-12/04 COX Eicosanoids in Arthritis
NIH-NIAMS R01-AR47206
Principal Investigator: Steven B. Abramson
- 7/03-12/04 DTH Responses in Arthritis
Investigator-initiated, Industry-supported (Amgen, Abbott)
Principal Investigator: Clifton O. Bingham III
- 7/04-12/04 Fellowship for Clinical Investigation
Investigator-initiated, Industry-funded (Centacor)
Principal Investigator: Clifton O. Bingham III
- 7/04-12/04 Treatment of Early Rheumatoid Arthritis
University of Alabama at Birmingham (Larry Moreland, overall PI)
Investigator-initiated, Industry-supported (Amgen, Barr, Pfizer)
Principal Investigator: Clifton O. Bingham III (HJD Site)
- 7/01-6/04 Dorothy Goldstein Young Scholar Award
NY Chapter Arthritis Foundation
Phospholipase A2 Enzymes in Arthritis
Principal Investigator: Clifton O. Bingham III
- 7/97-6/99 Postdoctoral Fellowship
Arthritis Foundation
The Identification and Characterization of a Novel Group II Phospholipase A₂
and its Role in Eicosanoid Generation
Principal Investigator: Clifton O. Bingham III
- 7/98-6/99 President's Grant-in-Aid
American Academy of Allergy Asthma and Immunology
Subcellular Localization and Trafficking of Group V Phospholipase A₂ in Mast
Cells
Principal Investigator: Clifton O. Bingham III

Industry-sponsored Clinical Trials

Principal Investigator:

1. (NIH-NIAMS/NCCAM) Study of the Efficacy of Glucosamine, Chondroitin Sulfate and Glucosamine/Chondroitin Sulfate in Knee Osteoarthritis (GAIT), Phase IIIb.
2. (Novartis) Multicenter International, Randomized, Double-blind, Double-dummy, Placebo-Controlled, Parallel Group Trial of 4 Doses of COX189 Using Diclofenac as a Comparator. Phase II.
3. (Procter and Gamble) Multicenter, Double-blind, Parallel, Multicenter, Placebo-controlled, Two-Year Study to Determine the Efficacy and Safety of Orally Administered Residronate in Patients with Medial Compartment Knee Osteoarthritis. Phase III.
4. (Amgen) Multicenter Randomized, Blinded, Placebo-controlled Study to Describe Long-Term Safety of Daily Subcutaneous Anakinra (IL-1ra) in Patients with Rheumatoid Arthritis. Phase III.
5. (Unither) A Multicenter, Randomized, Double-blind, Placebo-controlled Study to Evaluate the Efficacy and Safety of Ketotop (A topical plaster containing Ketoprofen) In the Treatment of Osteoarthritis of the Knee. Phase III.
6. (Knoll) A Multicenter, Randomized, Double-blind, Placebo-controlled Study of the Safety of Human Anti-TNF Monoclonal Antibody D2E7 in Patients with Active Rheumatoid Arthritis, Phase IIIb.
7. (Novartis) A Week Multicenter, Randomized, Double-blind, Double-dummy, Placebo-controlled, Parallel Group Trial of 2 Doses of COX189 in Patients with Rheumatoid Arthritis Using Celecoxib as a Comparator. Phase III.
8. (Knoll/Abbott) S.O.N.O.R.A. Trial: A Five-year Observational Study of Patients with New Onset Rheumatoid Arthritis.
9. (ILEX) A Phase II Pivotal Trial of Oxypurinol for the Symptomatic Hyperuricemic Patients who are Unable to Tolerate Allopurinol. Phase III.
10. (Amgen) A Randomized Placebo-Controlled, Double-blind, Multicenter study to Evaluate the Efficacy and Safety of PEG-sTNFRI in Patients with Rheumatoid Arthritis. Phase IIb/III.
11. (Knoll/Abbott) A Multicenter Continuation Study of the Long Term Safety of Human Anti-TNF Monoclonal Antibody D2E7 in Patients with Rheumatoid Arthritis.
12. (Immunex) Rheumatoid Arthritis DMARD Intervention Utilization Study (RADIUS)
13. (Forest) A Randomized, Double-blind, Placebo-controlled, Multicenter, Parallel Group Study to Investigate the Efficacy and Safety of ML-3000 in Patients with Osteoarthritis of the Knee, Phase III.
14. (Alexion) A Randomized Double-Blind Placebo Controlled Study of the Effect of h5G1.1 mAb on Rheumatoid Arthritis Patients with Active Disease Despite Receiving Methotrexate or Leflunomide, Phase IIb.

15. (XOMA) A Double-Blind Placebo-controlled Study to Determine the Safety, Efficacy, Pharmacokinetics, and Pharmacodynamics of Efalizumab in Subjects with Moderate to Severe Rheumatoid Arthritis on a Stable Dose of Methotrexate, Phase II.
16. (Merckle) A 12 Week, Randomized, Double-blind, Placebo-controlled, Multi-center, Parallel Group Study to Investigate the Efficacy and Safety of ML-3000 in Patients with Osteoarthritis of the Knee. Phase III.
17. (Regeneron) A Phase II Double-Blind Placebo Controlled Study of IL1-TRAP in Rheumatoid Arthritis.
18. (Immunex/ Amgen) Rheumatoid Arthritis DMARD Intervention Utilization Study (RADIUS2), Phase IV.
19. (Regeneron) A Randomized, Double-Blind, Placebo controlled dose ranging study to evaluate the safety and efficacy of fixed doses of IL-1 Trap in patients with active Rheumatoid Arthritis, Phase IIa.
20. (Abbott) A Multicenter Study of the Safety of Human Anti-TNF Monoclonal Antibody D2E7 in Subjects with Active Rheumatoid Arthritis, Phase IV.
21. (Bristol Myers Squibb) A Phase III Multicenter Randomized Double-Blind Placebo-controlled Clinical Use Study to Evaluate Safety and Tolerability of BMS 188667 Administered Intravenously to Subjects with Active Rheumatoid Arthritis, Phase IIIb.
22. (Abbott) A Phase III Multicenter Study of the Safety and Efficacy of the Human Anti-TNF Monoclonal Antibody Adalimumab (D2E7) in Patients with Moderate to Severely Active Psoriatic Arthritis, Phase III.
23. (TAP Pharmaceuticals) A Phase III, Randomized, Multicenter, Allopurinol and Placebo-controlled study Assessing the Safety and Efficacy of Oral Febuxostat in Subjects with Gout, Phase III.
24. (University of Alabama) Treatment of Early Aggressive Rheumatoid Arthritis—A Multicenter, Randomized, Double-Dummy Trial to Assess the Relative Efficacy of Methotrexate, Sulfasalazine, and Hydroxychloroquine compared to Methotrexate plus Etanercept in Patients with Early Aggressive Rheumatoid Arthritis, Phase IV.
25. (Wyeth) A Double-Blind, Placebo-Controlled, Randomized Study to Evaluate the Efficacy and Safety of CCI-779 in Subjects with Active Rheumatoid Arthritis on Concomitant Methotrexate Therapy, Phase II.
26. (Merck) A 12-week, Randomized, Placebo-controlled, parallel Group, Double-Blind Study to Evaluate the Safety and Efficacy of Once Daily Administration of Etoricoxib 30 mg versus Celecoxib 200 mg in patients with Osteoarthritis, Phase III.
27. (Targeted Genetics) A Placebo-Controlled, Dose-Escalation Trial of Intrarticular Injections of AAV:TNFR:Fc in Rheumatoid Arthritis, Phase I.
28. (IDEC/Genentech) A Randomized, placebo-controlled, Double-blind, Multicenter Study to Evaluate the Safety and Efficacy of Rituximab in Combination with Methotrexate in Patients with Active Rheumatoid Arthritis Who Have Had an Inadequate Response to Anti-TNF Therapies, Phase III.

29. (Genentech) A randomized, placebo-controlled, multicenter, blinded phase I/II Study of the Safety of Escalating Doses of PRO70769 (rhuMAb 2H7) in Subjects with Moderate to Severe Rheumatoid Arthritis Receiving Stable Doses of Concomitant Methotrexate, Phase I/II.

Subinvestigator:

1. (La Jolla Pharmaceuticals) A Randomized, Double-Blind, Placebo-Controlled, Multicenter, Safety and Efficacy Trial of LJP394 in Systemic Lupus Erythematosus (SLE) Patients with a History of Renal Disease.
2. (La Jolla Pharmaceuticals) A Double-Blind, Randomized, Placebo-Controlled, single Exposure, Dose-Ranging Pilot Study to Demonstrate the Safety and Tolerability of LJP 1082 in Patients with Antiphospholipid Antibodies Phase I.
3. (Pharmacia) Study of the Efficacy and Tolerability of Once Daily Celebrex (Celecoxib) and Twice Daily Naproxen vs. Placebo in the Treatment of Asian Subjects with Osteoarthritis of the Knee, Phase IV.
4. (XOMA) A Phase II Double-blind Placebo-controlled Study to Determine the Safety, Efficacy, Pharmacokinetics and Pharmacodynamics of Efalizumab in Subjects with Psoriatic Arthritis, Phase
5. (Winston) A Double-blind, Randomized, Controlled Parallel-group Multicenter Study Evaluating the Safety and Efficacy of Civamide Cream 0.075% as Treatment in Subjects with Arthritis of the Knee, Phase III.

EDUCATIONAL ACTIVITIES:

Teaching

Classroom Instruction

2000-02	Rheumatology Section, Pathophysiology Course, NYU School of Medicine “Vasculitis”
2000-04	Rheumatology Section, Pathophysiology Course, NYU School of Medicine Small group section leader
2000-04	Rheumatology Clinical Fellows Orientation Conferences “DMARDs and Biological Therapy” “Immunoglobulins and Immunodeficiencies” “Mast cell biology, urticaria, and angioedema”
2002-04	Department of Clinical Pharmacology Elective, NYU School of Medicine “NSAIDS”
2000-03	Orthopaedic Resident Conference, NYU Department of Orthopaedic Surgery, “Current Medical Therapies for Inflammatory Arthritis”

- 2001 Division of Geriatrics, Weekly Conference, NYU School of Medicine
“Osteoarthritis”, “NSAIDs and Coxibs, Risks and Benefits”
- 2001 Conference, Department of Rehabilitation Medicine, NYU School of Medicine
“NSAIDs and Coxibs”
- 2001-02 Conference, Ambulatory Care Medicine, NYU School of Medicine
“Osteoarthritis”, “Rheumatoid Arthritis”
- 2002-04 Rheumatology Section, Pathophysiology Course, NYU School of Medicine
Director, Rheumatology Section
- 2003-04 Rheumatology Section, Pathophysiology Course, NYU School of Medicine
“Inflammatory Arthritis”

Clinical Instruction

- 1999-2004 Arthritis Clinics, Bellevue Hospital Center, Supervising Physician of All Fellows
and Residents in Primary Teaching Clinic (>2000 visits/year)
- 1999-2002 Arthritis Clinic, Hospital for Joint Diseases, Supervising Physician for Fellows
- 2000-01 Musculoskeletal Examination Techniques for Physical Diagnosis Instructors
- 2001-03 Site Director and Coordinator, Ambulatory Care Rotation, NYU School of
Medicine, 3rd and 4th Year Medical Students

Fellows

- 2002-04 Course Development: Analyzing Clinical Trial Data in Rheumatology.
Monthly seminar for Rheumatology Fellows, Rotating Residents and Students.
Curriculum covered basic study design, disease-specific outcome measures,
analysis of data, and generalizability of findings using classic and current clinical
trials as examples.

CME Instruction

- 1999 Hospital for Joint Diseases, Update in Rheumatology for the Internist, NY, NY
“Autoimmunity and Urticaria”
- 2000 American College of Rheumatology Annual Meeting Symposium,
Washington, DC
“The Role of Inflammatory Mediators in Rheumatoid Arthritis”
- 2002 NYU School of Medicine, Update in Rheumatology, New York, NY
“Autoimmune Mechanisms in Urticaria”
- 2003 NYU School of Medicine, Rheumatology Review Course, New York, NY

- “Future Therapeutic Targets in Rheumatoid Arthritis”
- 2003-04 NYU School of Medicine, Rheumatology Review Course, New York, NY
“A Clinical Trials Practicum”
- 2003 Biologic DMARDS, Changing the Perspective in RA Care, Philadelphia, PA
“Hot Topics in Rheumatoid Arthritis”
- 2003 American Society for Bone and Mineral Research Annual Meeting Symposium, Minneapolis, MN
“Understanding Mechanisms in Osteoarthritis Pathophysiology: The Role of Bone in OA”
- 2003 American College of Rheumatology Annual Meeting Symposium, Orlando, FL
Session Moderator and Speaker
“Structure Modifying Agents in Osteoarthritis: Reevaluating the Role of Bone”
- 2004 NYU School of Medicine, Rheumatology Review Course, New York, NY
“Changing the Paradigm of RA Treatment: The Earlier the Better”
- 2005 Delaware American College of Physicians Annual Meeting, Newark DE.
“A Revolution in Biologics for the Treatment of Rheumatic Diseases”
- 2005 NYU School of Medicine, Rheumatology Review Course, New York, NY
“Future Therapeutic Targets for Rheumatoid Arthritis”
- 2005 Johns Hopkins Rheumatology Review Course, Baltimore MD
“Psoriatic Arthritis and Ankylosing Spondylitis”
- 2005 Tumulty Topics in Medicine, Johns Hopkins, Baltimore MD
“An Approach to Polyarthritis”

Mentoring (pre and post doctoral)

Direct supervision and Mentoring

- 1997-99 Richard P. Goddeau, Brigham and Women’s Hospital, Student
Direct supervisor
Project: Phospholipase A₂ Enzymes in Arthritis
Current Position: Student, New England College of Osteopathy (D.O)
- 2000-01 Aleksander Feoktistov MD, Hospital for Joint Diseases, Fellow
Direct supervisor and Mentor
Project: Phospholipase A₂ Enzymes in Arthritis
Current Position: Private Practice Rheumatology, Boston, MA
- 2001-04 Soumya M. Reddy MD, Hospital for Joint Diseases, Fellow
Direct supervisor and Mentor

Projects: Phospholipase A₂ Enzymes in Synovial Fibroblasts; Development of a Registry and Tissue Bank for Psoriasis and Psoriatic Arthritis
Sources of Support: T32 Training grant, Arthritis Foundation Postdoctoral Fellowship, Amgen Postdoctoral Fellowship
Current Position: Instructor in Medicine, NYU School of Medicine; Director Psoriatic Arthritis Clinic, NYU and Hospital for Joint Diseases

2002-04 Jeffrey D. Greenberg MD, MPH, NYU-Hospital for Joint Diseases, Fellow Direct supervisor and Co-mentor (with Steven B. Abramson)
Projects: COX-2 Inhibitors and Outcomes in OA and RA; Delayed type hypersensitivity responses in RA; Use of the CORRONA database to evaluate prescribing patterns and comorbidities in arthritis patients
Sources of support: T32 Training grant, ACR Physician Scientist Development Award; CHORD Fellowship (Clinical Health Outcomes in Rheumatic Diseases)
Current Position: Instructor of Medicine, NYU School of Medicine

2003-04 Oliver Kurucz, MD, NYU-Hospital for Joint Diseases, Fellow Direct supervisor and mentor
Project: Strategies for TB Screening in RA Patients
Current position: Private Practice Rheumatology, New Paltz, NY

Training Grant Participation

1999-04 NYU Division of Rheumatology, Rheumatology Training Grant (T32) Cluster Leader Clinical and Translational Core Group, Steering Committee Coordination of training in Good Clinical Practice, Research Methods, Human Subjects Protection, and Research Ethics.
Developer and coordinator of Clinical Trials Methodology curriculum.
Primary teaching physician at weekly Arthritis Clinics at Bellevue Hospital.
Participation in clinical supervision, instruction, and mentoring of fellows.
Lectures in rheumatology lecture series.

Editorial Activities:

Section Editor

Literature Alert Editor, *Current Rheumatology Reports*
Editorial Board, Rheumatologyweb.com (Internet website)

Journal Peer Review

Arthritis and Rheumatism
Arthritis Research and Therapy
Clinical Therapeutics
Immunology
Journal of Histochemistry and Cytochemistry
Journal of Rheumatology
Scandinavian Journal of Rheumatology

Grant Review

Sheffield Charitable Trust
Arthritis Foundation NY Chapter

CLINICAL ACTIVITIES

Certification

Medical Licensure

1992 New York State Medical License Registration
1993 Massachusetts Medical License Registration
2004 Maryland Medical License Registration

Medical Board Certification

1993 American Board of Internal Medicine, Diplomate
1996 American Board of Internal Medicine, Diplomate in Rheumatology
1999 American Board of Allergy and Clinical Immunology

Service Responsibilities (Johns Hopkins)

Rheumatology Clinic Good Samaritan Hospital (1 day per week), supervising fellows and rotating residents

Inpatient Rheumatology Consultative Service, 4-6 weeks/year

PROGRAM DEVELOPMENT

1999-2004

Co-director Ambulatory Clinical Research Center, Hospital for Joint Diseases
Director, Ambulatory Clinical Research Center, Hospital for Joint Diseases
Director, Seligman Center for Advanced Therapeutics, NYU-Hospital for Joint Diseases

Clinical research facility for Department of Rheumatology and Medicine, NYU-Hospital for Joint Diseases. Responsible for expansion of departmental clinical trials effort from one nurse and 2 examination rooms in clinic to a 3000 square foot off-site facility with more than 20 ongoing Phase I-IV NIH and industry sponsored clinical trials including infusions and injections. Facility includes 5 examination rooms, 2 bed infusion suite, administrative and office space, storage facilities for medication, records, and specimens, and sample processing laboratory. Ongoing supervision and direction of clinical staff that includes a research administrator, regulatory document specialist, receptionist, patient recruiters, data entry personnel, 2 RNs, nurse practitioner, and research coordinators.

Responsible for initial and ongoing resource evaluation and needs assessment, physical space design, business plan development, diversification of revenue resources (infusion services, private practices, clinics), monthly expenses and accounting, revenue projections, web site development, publicity, marketing, branding, media contacts, fundraising from industry and donor relations. Integration of Seligman Center as a satellite site to the NYU School of Medicine General Clinical Research Center.

Principal investigator for more than 25 clinical trials in osteoarthritis, rheumatoid arthritis, psoriatic arthritis, and oversight of staffing and expenses of more than 15 additional clinical trials and studies in lupus, vasculitis, gout, osteoporosis by other investigators.

ORGANIZATIONAL ACTIVITIES

Institutional Administrative Appointments

Division

1999-2001	Co-Director Ambulatory Clinical Research Center, NYU-HJD
2001-04	Division of Rheumatology, Executive Committee, NYU-HJD
2001-02	Director, Ambulatory Clinical Research Center, NYU-HJD
2002-04	Director, Seligman Center for Advanced Therapeutics, NYU-HJD
2005-present	Director, Johns Hopkins Arthritis Website

School of Medicine

1999-2001	Immunology Curriculum Committee, NYU School of Medicine
2000-01	Musculoskeletal Medicine Curriculum Committee, NYU School of Medicine
2002-04	Curriculum Committee, NYU School of Medicine
2003-04	NYU School of Medicine, General Clinical Research Center, Strategic Planning Committee
2003-04	NYU School of Medicine, General Clinical Research Center, Subcommittee on Informatics

Hospital

2002-04	Chairman, Hospital for Joint Diseases Safety/Environment of Care Committee
2002-04	Member, Hospital for Joint Diseases Executive Committee

Professional Societies

Memberships

1993	American College of Rheumatology (ACR)
1998	American Academy of Allergy Asthma and Immunology (AAAAI)
2000	New York Rheumatism Association
2001	Osteoarthritis Research Society (OARSI)
2003	Group for Research in Psoriasis and Psoriatic Arthritis (GRAPPA)

Appointments

2000	NY Chapter Arthritis Foundation, Medical and Scientific Committee
2001	NY Chapter Arthritis Foundation, Postdoctoral Fellowship Review Committee
2002	American College of Rheumatology, Professional Meetings Committee
2002	New York Rheumatism Association, Executive Committee
2003, 04	American College of Rheumatology, Abstract Review Committee, RA Therapeutics
2003-06	American College of Rheumatology, Chairman, RA Study Group
2004-09	American College of Rheumatology Innovative Therapies Meeting Planning Committee
2005	Co-Chairman, ACR Spring State-of-the-Art Meeting, Chicago, IL
2006	Chairman, ACR Spring State-of-the-Art Meeting

RECOGNITION

Awards, Honors:

1983	National Merit Scholar, Northwestern University
1983-86	Three Year B.A. Program, Northwestern University
1984	Alpha Lambda Delta (Freshman Honorary)

1991-93	Recognition for Outstanding Clinical Teaching, Columbia-Presbyterian Medical Center
1993	Wyeth-Ayerst Rheumatology Fellows Reporter Program
1996	Award for Center Excellence, Harvard-Pilgrim Health Plan
1997-99	Arthritis Foundation Postdoctoral Fellowship
1998-99	President's Grant-in-Aid Award, American Academy of Allergy Asthma and Immunology
2001-04	Dorothy W. Goldstein Young Scholar Award, New York Chapter Arthritis Foundation
2004-06	Arthritis Investigator Award, National Arthritis Foundation

Study Sections, Invited Participant

2002	NIH- NIDCR, Expert Advisory Panel on Clinical Research
2003	NIH-NIAMS Special Emphasis Study Section Microcirculation and Target Organ Damage in Rheumatic, Skin and Ocular Diseases

Invited Talks

Local

1999	Boston Citywide Allergy Rounds, "Angioedema"
1999	SUNY at Stonybrook, Department of Allergy Grand Rounds "Eicosanoid Generation in Mast Cells"
1999	Long Island Jewish Hospital, Allergy Seminar "Eicosanoid Generation and Mast Cells"
2000	NY Chapter Arthritis Foundation Lunch and Learn Seminar "Arthritis Treatments at the Millennium"
2000	Bellevue Hospital-Arthritis Foundation, "Treatments for Rheumatoid Arthritis"
2000	Rose Dabbs Health Fair, Hospital for Joint Diseases, "Rheumatoid Arthritis"
2001	NY Chapter Arthritis Foundation Lunch and Learn "New Treatments for Rheumatoid Arthritis"

- 2001 St. Luke's-Roosevelt Hospital, New York, NY, Division of Pulmonary and Critical Care Medicine Grand Rounds
"Angioedema and Urticaria, Not Just IgE"
- 2002 SUNY Downstate, Brooklyn, NY, Rheumatology Grand Rounds
"The Role of Cytokines in Rheumatoid Arthritis"
- 2002 St. Vincent's Hospital, New York, NY, Rheumatology Grand Rounds
"Cytokine Inhibition in the Treatment of Inflammatory Arthritis"
- 2002 NY Chapter Arthritis Foundation, Annual Meeting, Panelist and Speaker, Research Advances, "Phospholipase A₂ Enzymes in Arthritis"
- 2003 East Orange VA Hospital, East Orange, NJ, Medical Grand Rounds
"Changing Paradigms in Rheumatoid Arthritis Treatment"
- 2003 St. James Hospital, Queens, NY, Medical Grand Rounds
"Update in Treatment Options for Osteoarthritis and Rheumatoid Arthritis"
- 2003 Lenox Hill Hospital, New York, NY, Medical Grand Rounds
"New Treatment Paradigms in Rheumatoid Arthritis"
- 2003 New York Pharmacy Managers Association Meeting, New York, NY
"Therapeutic Options for Rheumatoid Arthritis"
- 2003 Arthritis Foundation Research Presentations, NY Academy of Medicine
"Phospholipase A₂ Enzymes in Arthritis"
- 2003 Educational Media Symposium, New York, NY
"The Changing Landscape of Rheumatoid Arthritis"
- 2003 Columbia-Presbyterian Hospital, New York, NY, Rheumatology Grand Rounds
"A Review of the Biotechnology Process"
- 2003 NY Chapter Arthritis Foundation, Update in Inflammatory Arthritis, Bench to Bedside
"Emerging Therapeutic Targets in Inflammatory Arthritis"
- 2003 Long Island Jewish-North Shore Hospital, Rheumatology Grand Rounds
"An Update on Osteoarthritis Pathobiology and Implications for Treatment"
- 2004 NYU School of Medicine, Department of Medicine Grand Rounds
"Targeted Therapeutics in Rheumatoid Arthritis"
- 2004 Mount Sinai Hospital, New York, NY, Rheumatology Grand Rounds
"Emerging Perspectives on Biologic Therapy in Rheumatoid Arthritis"
- 2004 Lawrence Hospital, Bronxville, NY, Department of Medicine Grand Rounds
"Current and Emerging Therapeutic Options for Rheumatoid Arthritis"
- 2004 New York Rheumatology Network (NYRN) Annual Meeting, New York, NY

“Understanding the Process of Biotechnology”

National/International

- 2000 American Academy of Allergy Asthma and Immunology Annual Meeting, Lunch Seminar, “Molecular regulation of eicosanoid generation”
- 2000 American College of Rheumatology Annual Meeting, Post-Meeting Symposium, Washington DC
“The Role of Inflammatory Mediators in Rheumatoid Arthritis”
- 2001 American Academy of Allergy Asthma and Immunology Annual Meeting, Breakfast Seminar, “Molecular regulation of eicosanoid generation”
- 2002 Federation of Clinical Immunology Societies (FOCIS) Annual Meeting, Session Co-Chair and Moderator
“Cytokines in Rheumatoid Arthritis”
- 2002 Investigator Meeting, Efalizumab for Rheumatoid Arthritis
“Examination of Rheumatoid Joints for Clinical Trials”
- 2003 Biotechnology Industry Organization Conference, New York, NY
“Future Therapeutic Targets in Rheumatoid Arthritis”
- 2003 Rheums with a View, Phoenix, AZ
“Pathophysiology and Treatment of Osteoarthritis”
- 2003 American Society of Bone and Mineral Research Annual Meeting Symposium, Minneapolis, MN
“The Role of Bone in Osteoarthritis”
- 2003 Osteoarthritis Research Society International Meeting, Berlin, Germany
“Understanding Mechanisms in Osteoarthritis Pathophysiology: The Role of Bone in Osteoarthritis”
- 2003 American College of Rheumatology Annual Meeting, RA Study Group
“Treatment of Early Rheumatoid Arthritis”
- 2003 American College of Rheumatology Annual Meeting Symposium, Orlando, FL
“The Role of Bone in the Pathogenesis of Osteoarthritis”
- 2004 St. Louis University, Department of Rheumatology Grand Rounds
“An Update in Osteoarthritis Pathophysiology and Future Therapeutic Directions”
- 2004 St. Louis Rheumatology Association Meeting
“Future Therapeutic Targets in Rheumatoid Arthritis”
- 2004 Investigator Meeting, Amgen EMBARK Study

- “ACR Responses, DAS, and EULAR Responses—Implications for Treatment”
- 2004 University of Rochester, Department of Medicine Grand Rounds
“Current and Future Treatment of Inflammatory Arthritis”
- 2005 Delaware American College of Physicians Annual Meeting, Newark, DE “A
Revolution in Biologics for the Treatment of Rheumatic Diseases”
- 2005 Innovative Therapies, American College of Rheumatology, Washington DC
“The Survival of Clinical Research in Rheumatology”
- 2005 Innovative Therapies, American College of Rheumatology, Washington DC
Moderator and Coordinator: “Bone and Cartilage Session”
- 2005 American College of Foot and Ankle Surgeons, New Orleans, LA
“Rheumatology Pharmacology Update”
- 2005 Regeneron Investigator Meeting, Phase II Study IL1-TRAP in OA, Orlando, FL
“The Role of IL1 in Osteoarthritis: Rationale for Therapy with IL1-TRAP”
- 2005 NYU Rheumatology Review Course, New York, NY
“Future Therapeutic Targets for Rheumatoid Arthritis”
- 2005 Meet-the-Professor , NYU Rheumatology Review Course, New York, NY
“Future Therapies in Rheumatology”
- 2005 ACR Fellows Conference, State-of the-Art Symposium, Chicago, IL
“Pathophysiology of RA”
- 2005 ACR State of the Art Symposium, Chicago, IL
Moderator and Co-Chair