

## CURRICULUM VITAE

PAUL A. GREENBERGER, M.D.

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Division of Allergy-Immunology  
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**Date of Birth:** May 28, 1947

**Place of Birth:** Pittsburgh, Pennsylvania

### Education:

1969 B.S. Purdue University "with highest distinction"  
1973 M.D. Indiana University School of Medicine

### Postdoctoral Training:

#### Internships and Residencies:

1973-1974 Medical Intern, The Methodist Hospital, Indianapolis, IN  
1974-1976 Medical Resident, The Jewish Hospital, Washington University,  
St. Louis, MO

#### Clinical and Research Fellowships:

1976-1978 Fellow, Section of Allergy-Immunology, Department of Medicine,  
Northwestern University, Chicago, IL

**Licensure and Certification:**

1976	Illinois State License
1976	American Board of Internal Medicine
1979	American Board of Allergy-Immunology
1986	Diagnostic Laboratory Immunology, American Board of Allergy and Immunology

**Academic Appointments:**

1977-1978	Instructor in Medicine, Northwestern University Medical School
1978-1979	Associate in Medicine, Northwestern University Medical School
1979-1983	Assistant Professor, Department of Medicine, Section of Allergy-Immunology, Northwestern University Medical School
1983-1988	Associate Professor, Department of Medicine, Section of Allergy-Immunology, Northwestern University Medical School, Chicago, IL
1988-	Professor of Medicine, Department of Medicine, Division of Allergy-Immunology, Northwestern University Medical School, Chicago, IL

**Hospital Appointments:**

1978-	Northwestern Memorial Hospital, Chicago, IL
1978-2015	Veteran's Administration Lakeside Hospital/Jesse Brown VA Medical Center Hospital, Chicago, IL
1978-1982	Children's Memorial Hospital, Chicago, IL
1978-	Rehabilitation Institute of Chicago (consultant), Chicago, IL

**Awards and Honors:**

1977	Alan R. Feinberg Memorial Award, Chicago Allergy Society
1978	Schering Travel Grant, American Academy of Allergy
1982	Clinical Research Fellowship Award - Chicago Community Trust
1989	Fellow (Honorary), The Canadian Society of Allergy and Clinical Immunology
1991	Fellow (Honorary), Ontario Allergy Society
1994-2012	The Best Doctors in America
1999-	The Guide to Top Doctors
2001	Special Recognition Award, American Academy of

	Allergy, Asthma and Immunology
2001 -2017	<u>America's Top Doctors</u>
2004, 2006, 2008,2010,2012,2014,2016, 2018	Top Doctors, <u>Chicago Magazine</u>
2006	Distinguished Service Award, American Academy of Allergy, Asthma and Immunology
2013	Outstanding Clinician Award, World Allergy Organization
2016	Distinguished Clinician Award, American Academy of Allergy Asthma and Immunology

**Major Committee Assignments:**

**National**

1983	NIAID, NIH. ad hoc committee to review "New Antifungal Agents for Therapy of Candida Infections"
1985	NIAID, NIH. ad hoc committee to review contract proposals on "Prevention of Radiocontrast Media Reactions"
1985	NIH, site visitor, "Pathogenesis of Radiocontrast Media Idiosyncrasies"
1987	NIH, GCRC, ad hoc committee to review grants
1988	Veterans Administrations, Reviewer for Merit Review Board of Infectious Diseases
1989	Veterans Administrations, Reviewer for Merit Review Board for Respiration
1989	NIH, GCRC, site visitor
1991	NIH, NIAID, ad hoc committee to review grants
1994	Veterans Administration, External Reviewer for Merit Review
1996	Residency Review Committee Site Visitor, Allergy-Immunology
1998	NIH, NIDA ad hoc Cocaine-Bronchial Asthma Advisory Board
1998-2000	American Lung Association, Research Committee
2010-2013	Pulmonary-Allergy Drugs Advisory Committee, Food and Drug Administration
2012-2013	Committee on Assessment of studies of health outcomes related to the recommended childhood immunization schedule, Institute of Medicine

**Northwestern Memorial Hospital**

1979-	Pharmacy and Therapeutics
1985-	Pharmacy and Therapeutics Subcommittee
1985-	Intern Selection, Interviewer
1987-2001	Quality Management, Department of Medicine for Division of Allergy-Immunology
1988-1994	Quality Management, Department of Medicine for Division of Transfusion Medicine
1990-1994	Blood Strategies Committee
1999-2001	Department of Medicine, Quality Management Committee

### **Medical School**

1979-1990	Residency Evaluation Committee
1979-1981	Medical Education Committee, Dept. of Medicine
1985-1991	Interviewer for Admissions Committee
1990-1992	Clinical Research Center Scientific Review Committee
1990-1991	Dermatology Search Committee
1991-1997	Medical Student Research Committee
1996-1999	Honors Program in Medical Education, Admissions Committee
1997	Ad hoc Committee on Promotion and Tenure
2001	Ad hoc Committee on Promotion and Tenure
2002	Chair, Ad hoc Committee on Promotion and Tenure
2003	Chair, Ad hoc Committee on Promotion and Tenure
2004	Member, Ad hoc Committee on Promotion and Tenure
2005	Chair, Ad hoc Committee on Promotion and Tenure
2009	Chair, Ad hoc Committee on Promotion and Tenure
2009- 2015	Informatics and Compliance Team, Dept of Medicine

### **Northwestern Medical Faculty Foundation**

1998-2000	Managed Care Committee
2013-2014	Physician Billing Compliance Committee

### **Northwestern University**

2011	Chair, ad hoc Inquiry Committee, Office of Research Integrity
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### **Editorial Service: Allergy and Asthma Proceedings**

1991-2004	Editor (Original Manuscripts)
2001-2004	Co-Editor-in-Chief

### **Editorial Boards**

1989-1991	<u>Allergy Proceedings</u>
1992-1996	<u>Annals of Allergy</u>
2000-2004	<u>Annals of Allergy, Asthma and Immunology</u>
1998- 2003	<u>Canadian Journal of Allergy and Clinical Immunology</u>
2004-	<u>Allergy, Asthma and Clinical Immunology</u>
2015-	<u>Journal of Allergy and Clinical Immunology:In Practice</u>
2017-	<u>Annals of Allergy Asthma and Immunology</u>

## **Reviewer**

1979- Annals of Internal Medicine  
1978- Journal of Allergy and Clinical Immunology  
1983- Chest  
1985- Archives of Internal Medicine  
1987- New England Journal of Medicine  
1987- Radiology  
1988- Annals of Allergy, Asthma and Immunology  
1991- Clinical Microbiology Reviews  
1990- American Review of Respiratory Disease/AJRCCM  
1993- Journal of Respiratory Diseases  
1994 American Journal of Rhinology  
1996- American Journal of Medicine  
1997- Adis International  
2000- Clinical Drug Investigation  
2001- Infectious Diseases in Children  
2001- JAMA  
2004- Allergy, Asthma and Clinical Immunology  
2004- Alergology International  
2006- International Archives of Allergy and Immunology  
2009- Clinical Pharmacology and Therapeutics  
2010- Journal of Asthma and Allergy  
2010- Pharmacoepidemiology and drug safety  
2010- Expert Opinion on Pharmacotherapy  
2011- PostGraduate Medicine  
2011- Current Medical Research & Opinion  
2011 Austrian Science Fund (grant)  
2011- Journal of Asthma  
2011- Pediatric Allergy, Immunology and Pulmonology  
2011- Journal of Allergy  
2011- Indian Journal of Critical Care Medicine  
2011- Nature Medicine  
2011- Journal of Immunological Methods  
2012- The Medical Letter  
2013- Indian Journal of Critical Care Medicine  
2014- International Journal of Rheumatic Diseases  
2015- The FASEB Journal  
2015- Journal of Addiction & Neuropharmacology  
2015- Allergy & Rhinology  
2015- World Allergy Journal  
2018- Expert Opinion on Drug Safety

## **Consultant**

1988-1993 American Medical Association Drug Evaluations

- 1988 American Medical Association Guide to Prescription and-Over-the-Counter Drugs
- 2013-2018 FDA Pulmonary Allergy Drugs Advisory Committee (special government employee)
- 2013 ad hoc consultant, Nonprescription Drugs Advisory Committee, Food and Drug Administration

### **Contributor**

- 1995 Practice Parameters for the Diagnosis and Treatment of Asthma. J Allergy Clin Immunol 1995;96:707-870.
- 1998 The Diagnosis and Management of Anaphylaxis. J Allergy Clin Immunol 1998;101:S465-S528.
- 2008 Pearls and pitfalls of allergy diagnostic testing: report from the American College of Allergy, Asthma and Immunology/American Academy of Allergy, Asthma and Immunology Specific IgE Test Task/Force. Ann Allergy Asthma Immunol 2008;101:580-592.

### **Memberships, Offices, and Committee Assignments in Professional Societies:**

- 1979- AMERICAN ACADEMY OF ALLERGY, ASTHMA, AND IMMUNOLOGY
- 1985- AAAI, Fellow
- 1982-1984 Undergraduate and Graduate Education Committee
- 1986-1987 Program Committee
- 1987-1989 Continuing Medical Education Committee
- 1989-1990 Chairperson, Continuing Medical Education Committee
- 1988-1990 Secretary, Research Council
- 1989-1990 Professional Education Council
- 1990-1993 Chairperson, Research Council
- 1988-1991 Conjoint Committee Board Review
- 1988-2007 Training Program Director Committee
- 1990-1991 Program Committee Basic and Clinical Immunology Interest Section
- 1993-1995 Chairperson, Government and Private Charity Committee
- 1996-2000 Chairperson, Steering Committee, Education Research Trust
- 1998-2004 Representative to American College of Chest Physicians
- 1999-2002 Research Subcommittee
- 2001-2004 Board of Trustees, Education Research Trust
- 2002-2006 Chair, ERT Oversight Committee
- 2002-2006 Board of Directors, AAAA
- 2006-2007 Secretary/Treasurer, AAAAI

2007-2008 Vice-President, AAAAI  
 2008-2009 President-elect, AAAAI  
 2007-2010 Board of Trustees, Asthma and Allergy Immunology Research Trust of the AAAAI  
 2009-2010 President, AAAAI  
 2010-2011 Past-President, AAAAI  
 2010-2011 Chair, Nominating Committee  
 2010-2011 Chair, Finance Committee  
 2011-2015 Asthma Research Trust Steering Committee  
 2015-2018 Chair, Ethics/Conflict of Interest Committee  
 2018-2019 Member, Ethics/Conflict of Interest Committee  
 2012-2019 Member, Allergic Fungal Respiratory Diseases Committee

1988-1992 JOINT COUNCIL OF ALLERGY AND IMMUNOLOGY, Executive Board  
 2008-2010 Joint Council of Allergy and Immunology, Executive Board

1987- AMERICAN COLLEGE OF CHEST PHYSICIANS, Fellow  
 1990-1994 ACCP, Governor, Illinois Chapter  
 1995-1997 ACCP Membership Committee  
 1998-2000 ACCP Program Committee  
 1999-2000 Chair, Allergy-Immunology Steering Committee  
 1999-2000 ACCP ViceChair, Council on Sections  
 1999-2000 ACCP, Board of Regents  
 2000 ACCP Finance Committee  
 2000 ACCP Program Committee

1987- AMERICAN THORACIC SOCIETY

1985- CENTRAL SOCIETY FOR CLINICAL RESEARCH  
 1993-1996 Rheumatology, Immunology, Allergy Councilor

1980- ILLINOIS SOCIETY FOR ALLERGY AND CLINICAL IMMUNOLOGY  
 2001-2002 ISAAI, Vice President  
 2002-2003 ISAAI, President

1981- AMERICAN COLLEGE OF PHYSICIANS, Fellow  
 1992- American Federation for Clinical Research

1993-2001 ACGME, Panel on Accreditation Appeals  
 2001-2004 RESIDENCY REVIEW COMMITTEE for Allergy-Immunology  
 2004-2005 Chair, RESIDENCY REVIEW COMMITTEE for Allergy-Immunology  
 2008-2014 ACGME, Board of Appeals Panel for Allergy & Immunology  
 2015-2021 ACGME, Board of Appeals Panel for Allergy & Immunology

1991- Fellow, AMERICAN COLLEGE OF ALLERGY, ASTHMA, AND IMMUNOLOGY

2001-2006	Geriatrics Committee, ASSOCIATION OF SUBSPECIALTY PROFESSORS
2016-2019	Board of Directors, WORLD ALLERGY ORGANIZATION
2016-2017	Chair, Education Committee
2016-2017	Chair, Communication Committee

**Major Research Interests:**

1. Allergic Bronchopulmonary Aspergillosis and Fungoses
2. Potentially Fatal Asthma
3. Pregnancy and Asthma
4. Anaphylaxis
5. Drug Allergy
6. Reduction in allergic antibodies

**Teaching Experience:**

1978-	Attending physician, Northwestern Medical Faculty Foundation, Ambulatory Clinic Allergy-Immunology
1979-2004	Medical Ward Attending Physician
1979-1981	Director, Northwestern Memorial Hospital Clerkship, Internal Medicine - Third Year
1981-2009	Director of In Patient Consultations Allergy-Immunology
1980-2004	Pharmacology Lecturer (sophomore class)
1980-2004	Pathophysiology Lecturer (sophomore class)
1989-1993	Director of Transfusion Medicine-Immunology Consultation Service

**Principal Clinical and Hospital Service Responsibilities:**

1989-1993	Medical Director, Rube Walker Transfusion Unit
1981-2004	Director, Allergy-Immunology Consultation Service
1978-1979	Division Chief, Allergy-Immunology, Children's Memorial Hospital
1986-2009	Associate Chief, Division of Allergy-Immunology, Department of Medicine
1987-1994	Associate Chief, Division of Transfusion Medicine, Department of Medicine
1983-	Fellowship Selection, Division of Allergy-Immunology, Department of Medicine
1991-2007	Director of Allergy-Immunology Fellowship Program
1991-1996	Co-director, Fellowship Training Program in Diagnostic Laboratory Immunology
1978-1990	NIH Funded Allergy-Immunology Training Grant



## BIBLIOGRAPHY

### Original Reports

1. Mendenhall C, Greenberger P, Greenberger J, Julian D. Dietary lipid assimilation after acute ethanol ingestion in the rat. *Am J Physiol* 1974;227:337-82.
2. Patterson R, Harris KE, Greenberger P. The effect of arachidonic acid on airway responses of rhesus monkeys. *Life Sciences* 1978;22:389-99.
3. Greenberger P, Patterson R. Safety of therapy of allergic symptoms during pregnancy. *Ann Intern Med* 1978;89:234-37.
4. Patterson R, Wang JLF, Roberts M, Greenberger P. Allergic bronchopulmonary aspergillosis: Diverse effects of acute phase illness and prednisone on total and specific serum immunoglobulins. *J Clin Lab Immunol* 1979;2:199-03.
5. Patterson R, Harris KE, Greenberger P. Ionophore and arachidonic acid stimulation of airway responses in rhesus monkeys. *J Clin Invest* 1979;64:49-55.
6. Greenberger P, Harris KE, Patterson R. The effect of histamine<sub>1</sub> and histamine<sub>2</sub> antagonists on airway responses to histamine in the rhesus monkey. *J Allergy Clin Immunol* 1979;64:189-96.
7. Greenberger P, Patterson R, Kelly J, Simon R, Stevenson DD, Lieberman P. Administration of radiographic contrast media in high risk patients. *Invest Radiol Supplement* 1980;15:40-43.
8. Greenberger P, Adverse drug reactions. *Comprehensive Therapy* 1980;6:22-30.
9. Patterson R, Harris KE, Greenberger PA. Effect of prostaglandin D<sub>2</sub> and I<sub>2</sub> on the airways of rhesus monkeys. *J Allergy Clin Immunol* 1980;65:269-73.
10. Ghory AC, Patterson R, Greenberger PA, Roberts M. Extended evaluation of allergic bronchopulmonary aspergillosis. *Int Arch Allergy Appl Immunol* 1980;62:285-91.
11. Ghory AC, Greenberger PA, Patterson R. The diagnosis and management of allergic bronchopulmonary aspergillosis. *Practical Cardiology* 1980;6:35-45.
12. Stec GP, Greenberger PA, Ruo TI, Henthorn T, Morita Y, Atkinson AJ, Jr., Patterson R. Kinetics of theophylline transfer to breast milk. *Clin Pharmacol Therapeutics* 1980;28:404-08.
13. Greenberger PA, Patterson R, Ghory AC, Arkins JA, Walsh T, Graves T, Saker J. Late sequelae of allergic bronchopulmonary aspergillosis. *J Allergy Clin Immunol* 1980;66:327-35.
14. Turner ES, Greenberger PA, Patterson R. Management of the pregnant asthmatic patient. *Ann Intern Med* 1980;6:905-18.

15. Patterson R, Roberts M, Ghory AC, Greenberger PA. IgA antibody against *Aspergillus fumigatus* antigen in patients with allergic bronchopulmonary aspergillosis. *Clin Exp Immunol* 1980;42:395-98.
16. Greenberger PA, Patterson R, Simon R, Lieberman P, Wallace W. Pretreatment of high risk patients requiring radiographic contrast media studies. *J Allergy Clin Immunol* 1981;67:185-87.
17. Sale SR, Greenberger PA, Patterson R. Idiopathic anaphylactoid reactions - a clinical summary. *JAMA* 1981;246:2336-39.
18. Greenberger PA, Patterson R. Application of enzyme linked immunosorbent assay (ELISA) in diagnosis of allergic bronchopulmonary aspergillosis. *J Lab Clin Med* 1982;99:288-93.
19. Greenberger PA, Hendrix RW, Patterson R, Chmiel JS. Bone studies in patients on prolonged systemic corticosteroid therapy for asthma. *Clin Allergy* 1982;12:363-68.
20. Patterson R, Greenberger PA, Radin RC, Roberts M. Allergic bronchopulmonary aspergillosis: Staging of disease. *Ann Intern Med* 1982;96:286-91.
21. Radin RC, Greenberger PA, Patterson R, Ghory AC. Most counts and exacerbations of allergic bronchopulmonary aspergillosis. *Clin Allergy* 1983;13:271-75.
22. Greenberger PA, Patterson R. Beclomethasone dipropionate administration for severe asthma during pregnancy. *Ann Intern Med* 1983;98:478-80.
23. Patterson R, Harris KE, Smith LJ, Greenberger PA, Shaughnessy MA, Bernstein P, Krell RD. Airway response to leukotriene D<sub>4</sub> in rhesus monkeys. *Int Arch Allergy Appl Immunol* 1983;71:156-60.
24. Katzenstein A-LA, Sale SR, Greenberger PA. Pathologic findings in allergic aspergillus sinusitis, a newly recognized form of sinusitis. *Am J Surg Path* 1983;7:439-43.
25. Ricketti AJ, Greenberger PA, Mintzer RA, Patterson R. Allergic bronchopulmonary aspergillosis. *Arch Intern Med* 1983;143:1553-57.
26. Greenberger PA, Katzenstein AL. Lipoid pneumonia with atypical mycobacterial colonization in allergic bronchopulmonary aspergillosis: A complication of bronchography and therapeutic dilemma. *Arch Intern Med* 1983;143:2003-05.
27. Katzenstein AL, Sale SR, Greenberger PA. Allergic aspergillus sinusitis: A newly recognized form of sinusitis. *J Allergy Clin Immunol* 1983;72:89-93.
28. Ricketti AJ, Greenberger PA, Patterson R. Immediate-type reactions in patients with allergic bronchopulmonary aspergillosis. *J Allergy Clin Immunol* 1983;71:541-45.

29. Greenberger PA. A case of life-threatening idiopathic anaphylaxis associated with hyperimmunoglobulinemia E. *Am J Med* 1984;76:553-54.
30. Patterson R, Greenberger PA, Ricketti AJ, Roberts M. A radioimmunoassay index for allergic bronchopulmonary aspergillosis. *Ann Intern Med* 1983;99:18-21.
31. Ricketti AJ, Greenberger PA, Pruzansky JJ, Patterson R. Hyperreactivity of mediator-releasing cells from patients with allergic bronchopulmonary aspergillosis as evidenced by basophil histamine release. *J Allergy Clin Immunol* 1983;72:386-92.
32. Sonin L, Grammer LC, Greenberger PA, Patterson R. Idiopathic anaphylaxis: A clinical summary. *Ann Intern Med* 1983;99:634-35.
33. Ricketti AJ, Greenberger PA, Glassroth J. Spontaneous pneumothorax in Allergic Bronchopulmonary Aspergillosis. *Arch Intern Med* 1984;144:181-82.
34. Akiyama K, Ricketti AJ, Greenberger PA, Roberts M, Patterson R. Identification of allergic bronchopulmonary aspergillosis in the United States. *Immunol Allergy Prac* 1983;12:29-31.
35. Rosenberg IL, Greenberger PA. Allergic bronchopulmonary aspergillosis and aspergilloma: Long term follow-up without enlargement of a large multiloculated cavity. *Chest* 1984;85:123-25.
36. Ricketti AJ, Greenberger PA, Patterson R. Varying presentations of allergic bronchopulmonary aspergillosis. *Int Arch Allergy Appl Immunol* 1984;73:283-85.
37. Laufer P, Fink JN, Bruns WT, Unger GF, Kalbfleisch JH, Greenberger PA, Patterson R. Allergic bronchopulmonary aspergillosis in cystic fibrosis. *J Allergy Clin Immunol* 1984;73:44-48.
38. Akiyama K, Mathison DA, Greenberger PA, Patterson R. Allergic bronchopulmonary candidiasis. *Chest* 1984;85:699-701.
39. Ricketti AJ, Greenberger PA, Patterson R. Serum IgE as an important aid in management of allergic bronchopulmonary aspergillosis. *J Allergy Clin Immunol* 1984;74:68-71.
40. McGrath KG, Greenberger PA, Patterson R, Zeiss CR. Factitious allergic disease: Multiple factitious illness and familial Muchausen's Stridor. *Immunol Allergy Prac* 1984;VI:263-71.
41. Akiyama K, Pruzansky JJ, Ricketti AJ, Greenberger PA, Patterson R. Neutrophil chemotactic activity released in supernatants of human leukocytes challenged with antigens or anti human IgE. *J Lab Clin Med* 1984;104:391-403.

42. Greenberger PA, Patterson R, Radin RC. Two pretreatment regimens for high-risk patients receiving radiographic contrast media. *J Allergy Clin Immunol* 1984;74:540-43.
43. Halwig JM, Greenberger PA, Levine M, Patterson R. Recurrence of allergic bronchopulmonary aspergillosis after seven years of remission. *J Allergy Clin Immunol* 1984;74:738-40.
44. Smith LJ, Greenberger PA, Patterson R, Krell RD, Bernstein PR. The effect of inhaled leukotriene D<sub>4</sub> in humans. *Am Rev Respir Dis* 1985;131:368-72.
45. Mendelson EB, Fisher MR, Mintzer RA, Halwig JM, Greenberger PA. Roentgenographic and clinical staging of allergic bronchopulmonary aspergillosis. *Chest* 1985;87:334-39.
46. Greenberger PA, Phair J. Treatment of venereal disease in the penicillin allergic patient: Administration of penicillin following testing with major and minor determinants. *NER Allergy Proc* 1985;6:166-69.
47. Fisher MR, Mendelson EB, Mintzer RA, Ricketti AJ, Greenberger PA. The use of linear tomography to establish the diagnosis of allergic bronchopulmonary aspergillosis. *Chest* 1985;87:499-502.
48. Halwig JM, Brueske DA, Greenberger PA, Dreisin RB, Sommers HM. Allergic bronchopulmonary curvulariosis. *Am Rev Respir Dis* 1985;132:186-88.
49. Halwig JM, Kurup V, Greenberger PA, Patterson R. A familial occurrence to allergic bronchopulmonary aspergillosis: A probably environmental source. *J Allergy Clin Immunol* 1985;76:55-9.
50. Greenberger PA, Patterson R, Tapio CM. Prophylaxis against repeat radiocontrast media reactions in 857 cases. *Arch Intern Med* 1985;145:2197-2200.
51. Grammer LC, Greenberger PA, Patterson R. Allergic bronchopulmonary aspergillosis in asthmatic patients presenting with allergic rhinitis. *Int Arch Allergy Appl Immunol* 1986;76:246-48.
52. Greenberger PA, Chow MJ, Atkinson AJ, Ambre JJ, Patterson R. Comparison of prednisolone kinetics in patients receiving daily or alternate day prednisone for asthma. *Clin Pharm Therap* 1986;39:163-8.
53. Patterson R, Greenberger PA, Grammer LC. Some indications for depot methylprednisone for asthma or other severe allergic disease. *J Allergy Clin Immunol* 1986;77:686-9.

54. Patterson R, Greenberger PA, Halwig JM, Liotta JL, Roberts M. Allergic bronchopulmonary aspergillosis: Natural history and classification of early diseases by serologic and radiographic studies. *Arch Intern Med* 1986;146:916-18.
55. Resnick A, Greenberger PA. A program for prevention of hospitalization for status asthmaticus in children. *NER Allergy Proc* 1987;8:104-07.
56. Greenberger PA, Halwig JM, Patterson R, Wallenmark C. Emergency administration of radiocontrast media in high risk patients. *J Allergy Clin Immunol* 1986;77:630-34.
57. Gutt L, Greenberger PA, Liotta JL. Serum IgA antibodies to *Aspergillus fumigatus* in various stages of allergic bronchopulmonary aspergillosis. *J Allergy Clin Immunol* 1986;78:98-101.
58. Fitzsimons RR, Greenberger PA, Patterson R. Outcome of pregnancy in women requiring corticosteroids for severe asthma. *J Allergy Clin Immunol* 1986;78:329-31.
59. Greenberger PA, Lazar HP. Readministration of spironolactone in the spironolactone-allergic patient. *NER Allergy Proc* 1986;7:343-45.
60. Lee TM, Greenberger PA, Nahrwold KL, Patterson R. Rectus sheath hematoma complicating an exacerbation of asthma. *J Allergy Clin Immunol* 1986;78:290-92.
61. Kiefer TA, Kersarwala HH, Greenberger PA, Fischer TJ. Allergic bronchopulmonary aspergillosis in a young child: Diagnostic confirmation of serum IgE and IgG indices. *Ann Allergy* 1986;56:233-36.
62. Greenberger PA, Smith LJ, Patterson R, Krell RD, Roberts M, Harris KE, Shaughnessy MA. Comparison of cutaneous and bronchial reactivity to leukotriene D<sub>4</sub> in humans. *J Lab Clin Med* 1986;108:70-75.
63. Patterson R, DeSwarte RD, Greenberger PA, Grammer LC. Drug allergy and protocols for management of drug allergies. *NER Allergy Proc* 1986;7:325-42.
64. Fitzsimons R, Greenberger PA, Patterson R. Asthma therapy when patients become pregnant. *J Respir Dis* 1986;7:40-6.
65. Greenberger PA, Patterson R. Management of drug allergy in patients with AIDS. *J Allergy Clin Immunol* 1987;79:484-88.
66. Boxer M, Greenberger PA, Patterson R. Clinical summary and course of idiopathic anaphylaxis in 73 patients. *Arch Intern Med* 1987;147:269-72.
67. Lee TM, Greenberger PA, Patterson R, Roberts M, Liotta JL. Stage V (fibrotic) allergic bronchopulmonary aspergillosis: A review of 17 cases followed from diagnosis. *Arch Intern Med* 1986;146:319-43.

68. Dykewicz MS, Greenberger PA, Patterson R, Halwig JM. Natural history of asthma in patients requiring chronic systemic corticosteroids. *Arch Intern Med* 1986;146:2369-72.
69. Cohen SG, Greenberger PA, Patterson R. Specific recommendations regarding research needs in determining the etiology and mechanisms of asthma. *Chest* 1987;91:196S-197S.
70. Patterson R, Greenberger PA, Lee TM, Liotta JL, O'Neill EA, Roberts M, Sommers H. Prolonged evaluation of allergic bronchopulmonary aspergillosis. *J Allergy Clin Immunol* 1987;80:663-68.
71. Greenberger PA, Meyers SN, Kramer BL, Kramer BL. Effects of beta adrenergic and calcium antagonists on the development of anaphylactoid reactions from radiocontrast media during cardiac angiography. *J Allergy Clin Immunol* 1987;80:698-702.
72. Lee TM, Greenberger PA, Oh S, Patterson R, Roberts M, Liotta JL. Allergic bronchopulmonary candidiasis: Case report and suggested diagnostic criteria. *J Allergy Clin Immunol* 1987;80:816-20.
73. Greenberger PA, Gutt L, Meyers SN. An immediate generalized reaction to iopamidol. *Arch Intern Med* 1987;147:2208-09.
74. Greenberger PA, Patterson R. The diagnosis of potentially fatal asthma. *NER Allergy Proc* 1988;9:147-52.
75. Greenberger PA, Patterson R. The outcome of pregnancy complicated by severe asthma. *NER Allergy Proc* 1988;9:539-43.
76. Bosken CH, Myers JL, Greenberger PA, Katzenstein A-LA. Pathologic features of allergic bronchopulmonary aspergillosis. *Am J Surg Pathol* 1988;12:216-22.
77. Greenberger PA, Patterson R. Allergic bronchopulmonary aspergillosis and the evaluation of the patient with asthma. (editorial). *J Allergy Clin Immunol* 1988;81:646-50.
78. Kurup VP, Ramasamy M, Greenberger PA, Fink JN. Isolation and characterization of a relevant antigen fraction from *Aspergillus fumigatus* having IgG and IgE binding activity. *Int Arch Allergy Appl Immunol* 1988;86:176-82.
79. Greenberger PA, Smith LJ, Hsu CCS, Roberts M, Liotta JL. Analysis of bronchoalveolar lavage in allergic bronchopulmonary aspergillosis: Divergent responses of antigen specific antibodies and total IgE. *J Allergy Clin Immunol* 1988;82:164-70.
80. Boxer MB, Dykewicz MS, Patterson R, Greenberger PA, Kelly JF. The management of patients with sulfonamide allergy. *NER Allergy Proc* 1988;9:219-23.

81. Zeaske R, Bruns WT, Fink JN, Greenberger PA, Colby H, Liotta JL, Roberts M. Immune responses to aspergillus in cystic fibrosis. *J Allergy Clin Immunol* 1988;82:73-7.
83. Greenberger PA, Pien LC, Patterson R, Robinson P, Roberts M. End stage lung and ultimately fatal disease in a bird-fancier. *Amer J Med* 1988;86:119-22.
84. Boxer MB, Greenberger PA, Patterson R. The impact of prednisone in life-threatening idiopathic anaphylaxis: Reduction in acute episodes and medical costs. *Ann Allergy* 1989;62:201-04.
85. Turner ES, Greenberger PA. Complexities of making an early diagnosis of Allergic Bronchopulmonary Aspergillosis in children. *NER Allergy Proc* 1989;10:63-69.
86. Patterson R, Greenberger PA, Castile RG, Yee WFH, Roberts M. Diagnostic problems in hypersensitivity lung disease. *Allergy Proc* 1989;10:141-47.
87. Kurup VP, Greenberger PA, Fink JN. Antibody response to low-molecular weight antigens of aspergillus fumigatus in allergic bronchopulmonary aspergillosis. *J Clin Microb* 1989;27:1312-16.
88. Greenberger PA, Liotta JL, Roberts M. The effects of age on isotypic antibody responses to Aspergillus fumigatus: Implications regarding in vitro measurements. *J Lab Clin Med* 1989;114:278-84.
89. Apter AJ, Greenberger PA, Liotta JL, Roberts M. Fluctuations of serum IgA and its subclasses in allergic bronchopulmonary aspergillosis. *J Allergy Clin Immunol* 1989;84:367-72.
90. Patterson R, Dykewicz MS, Evans III R, Grammer LC, Greenberger PA, Harris KE, Lawrence ID, Pruzansky JJ, Roberts M, Shaughnessy MA, Zeiss CR. IgG antibody against formaldehyde human serum proteins: A comparison with other IgG antibodies against inhalant proteins and reactive chemicals. *J Allergy Clin Immunol* 1989;84:359-66.
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#### Testimony

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