

CURRICULUM VITAE

DEMOGRAPHIC INFORMATION

Current Appointments

Associate Professor of Medicine
Department of Medicine, Division of Allergy and Clinical Immunology
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Adjunct Professor of Medicine
Department of Medicine
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Education and Training:

Taipei Medical University, Taiwan	B.S.	1981	Medical Technology
The University of Vermont, Burlington, Vermont	M.S.	1985	Medical Technology
The University of Vermont, Burlington, Vermont	Ph.D.	1988	Molecular and cellular Biology/Immunology

Professional Experience:

- July 1983– May 1985 **Teaching Assistant**, Graduate Program, Department of Medical Technology, The University of Vermont
- Sept. 1985– May 1986 **Teaching Assistant**, Cell Biology Program, The University of Vermont
- June 1986– July 1988 **Research Assistant**, Neuroimmunology Laboratory, Department of Neurology, The University of Vermont
- Aug. 1988– June 1990 **Postdoctoral Fellow**, Division of Allergy and Clinical Immunology, The Johns Hopkins University
- July 1990– Oct. 1992 **Instructor**, Department of Medicine, School of Medicine, The Johns Hopkins University
- Nov. 1992– Sept. 1998 **Assistant Professor**, Department of Medicine, School of Medicine, The Johns Hopkins University
- March 1997- present **Faculty Member**, Graduate Program in Cellular and Molecular Medicine, The Johns Hopkins University School of Medicine
- Oct. 1998– present **Associate Professor**, Department of Medicine, School of Medicine, The Johns Hopkins University
- Aug. 2000- present **Adjunct Professor**, Department of Medicine, Taipei Medical University, Taipei, Taiwan

RESEARCH ACTIVITIES

Publications: Peer-reviewed articles

1. **Huang S.K.**, and S. Sriram. Clonal diversity of myelin basic protein-specific T lymphocytes. *Immunogenetics* 27:370-4, 1988.
2. **Huang S.K.**, and S. Sriram. Spontaneous development in vitro of a myelin basic protein specific suppressor T cell line. *J. Neuroimmunol.* 25:177-83, 1989.
3. Sriram. S., D. Topham, **S.K. Huang**, and M. Rodriguez. Treatment of Encephalomyocarditis virus-induced central nervous system demyelination with monoclonal anti-T cell antibodies. *J. Virology* 63:4242-8, 1989.
4. **Huang, S.K.**, P. Zwollo, and D.G. Marsh. Class II MHC restriction specificity of human T-cell responses to a short ragweed pollen allergen, Amb a V. *Eur. J. Immunol.* 21:1469-73, 1991.
5. **Huang S.K.** and D.G. Marsh. Human T-cell responses to ragweed allergens, Amb V homologues. *Immunology* 73:363-5, 1991.
6. Rafnar T., B. Ghosh, W.J. Metzler, **S.K. Huang**, M.P. Perry, L. Mueller, and D.G. Marsh. Expression and analysis of recombinant Amb a V and Amb t V allergens: Comparison with native proteins by immunological assays and NMR spectroscopy. *J. Bio. Chem.*, 267:21119-23, 1992.
7. Kumai M., G. Krishnaswamy, D.G. Marsh, and **S.K. Huang**. Modulating effect of human monocyte Fc receptor on allergen-induced T-cell responses. *Immunology* 79:174-7, 1993.
8. Shinomyia, N., M. Kumai, D.G. Marsh, and **S.K. Huang**. Detection of specific IgE-secreting cells using an enzyme-linked immunospot assay. *J. Allergy and Clin. Immunol.* 92:479-87, 1993.
9. Krishnaswamy G., M. Kumai, M. Liu, S. -N. Su, B. Stealey, D.G. Marsh, and **S.K. Huang**. Detection of cytokine transcripts in the bronchoalveolar lavage cells of patients with asthma. *Am. J. Resp. Cell and Mol. Biol.* 9:279-86, 1993.

10. **Huang S.K.**, D.M. Essayan, G. Krishnaswamy, M. Yi, M. Kumai, H.-Q. Xiao, S.-N. Su, M.C. Liu. Detection of allergen- and mitogen-induced human cytokine transcripts using a competitive polymerase chain reaction. *J. Immunol. Methods* 168:167-81, 1994.
11. MacGlashan Jr. D., J. M. White, **S.K. Huang**, S. J. Ono, and L. M. Lichtenstein. Secretion of interleukin-4 from human basophils: the relationship between IL-4 mRNA and protein in resting and stimulated basophils. *J. Immunol.* 52:3006-16,1994.
12. Essayan, D.M., **S.K. Huang**, A. Kagey-Sobotka, B. Undem, and L.M. Lichtenstein. Modulation of antigen- and mitogen-induced proliferative responses of peripheral blood mononuclear cells by nonselective and isozyme selective cyclic nucleotide phosphodiesterase inhibitors. *J. Immunol.*, 153:3408-16, 1994.
13. **Huang S.K.**, M. Yi., E. Palmer, and D.G. Marsh. A dominant T-cell receptor β -gene expression in response to a short ragweed allergen, Amb a 5. *J. Immunol.*,154:6157-62, 1995.
14. **Huang S.K.**, H.-Q. Xiao, J. Kleine-Tebbe, D.G. Marsh, L.M. Lichtenstein, and M.C. Liu. IL-13 expression at the sites of allergen challenge in patients with asthma. *J. Immunol.* 155:2688-94, 1995.
15. Gavett S., D. O'Hearn, X.-M. Li, **S.K. Huang**, F. Finkelman, and M. Wills-Karp. Interleukin-12 inhibits antigen-induced airway hyperresponsiveness, inflammation, and Th2 cytokine expression in mice. *J. Exp. Med.* 182:1527-36, 1995.
16. Essayan, D.M., **S.K. Huang**, A. Kagey-Sobotka, B. Undem, and L.M. Lichtenstein. Effects of nonselective and isozyme selective cyclic nucleotide phosphodiesterase inhibitors on allergen-induced cytokine gene expression in peripheral blood mononuclear cells. *Am. J. Resp. Cell Mol. Biol.* 13:692-702, 1995.
17. Hsu, C.-H., K.-Y. Chua, M.-H. Tao, Y.-L. Lai, H.-D. Wu, **S.-K. Huang**, and K-H. Hsieh. Immunoprophylaxis of allergen-induced immunoglobulin E synthesis and airway hyperresponsiveness in vivo by gene vaccines. *Nat. Med.* 2:540-4, 1996.
18. Eigenmann P.A., **S.K. Huang**, and H.A. Sampson. Characterization of ovomucoid specific T-cell lines and clones from egg allergic subjects. *Pediatr. Allergy Immunol.* 7:12-21, 1996.

19. Hsu, C-H., K-Y. Chua, M.H. Tao, **S.K. Huang**, and K-H. Hsieh. Inhibition of specific IgE response in vivo by allergen-gene transfer. *Int. Immunol.* 8:1405-11,1996.
20. Li, X.-M, R.K. Chopra, T.-Y. Chou, B.H. Schofield, M. Wills-Karp, and **S.K. Huang**. Mucosal IFN- γ -gene transfer inhibits pulmonary allergic responses in mice. *J. Immunol. Cutting Edge* 157:3216-9, 1996.
21. Krishnaswamy G., J. Smith, S. Srikanth, D. Chi, J.H. Kalbfleisch, and **S.K. Huang**. Lymphoblastoid interferon- α inhibits T cell proliferation and expression of eosinophil-activating cytokines. *J. Interferon Cytokine Res.* 16:819-27, 1996.
22. Essayan, D., W.-F. Han, X.-M. Li, H.-Q. Xiao, J. Kleine-Tebbe, and **S.K. Huang**. Clonal diversity of interleukin-4 and interleukin-13 expression in human allergen-specific T lymphocytes. *J. Allergy Clin. Immunol.* 98:1035-44, 1996.
23. Krishnaswamy G., S. Srikanth, R.A. Miller, J.K. Smith, **S.K. Huang**, J. Suttles, and R. Stout. Multifunctional cytokine expression by the human mast cell line, HMC-1: regulation by T cell membrane contact and glucocorticoids. *J. Interferon Cytokine Res.* 17:167-76, 1997.
24. Essayan, D.M., **S.K. Huang**, A. Kagey-Sobotka, and L.M. Lichtenstein. Differential efficacy of lymphocyte- and monocyte-selective pretreatment with a type 4 phosphodiesterase inhibitor on antigen-driven proliferation and cytokine gene expression. *J. Allergy Clin. Immunol.* 99:28-37, 1997.
25. Essayan, D.M., A. Kagey-Sobotka, L.M. Lichtenstein, and **S.K. Huang**. Regulation of interleukin 13 by type 4 cyclic nucleotide phosphodiesterase (PDE) inhibitors in allergen-specific human T lymphocyte clones. *Biochemical Pharmacology* 53:1055-60, 1997.
26. Stanley, S.J., N. King, A.W. Burks, **S.K. Huang**, H. Sampson, G. Cockrell, R.H. Helm, M.C. West, and G.A. Bannon. Identification and mutational analysis of the immunodominant IgE binding epitopes of the major peanut allergen, Ara h2. *Arch. Biochem. and Biophys.* 342:244-53, 1997.
27. Essayan, D.M., A. Kagey-Sobotka, L.M. Lichtenstein, and **S.K. Huang**. Differential regulation of human antigen-specific Th1 and Th2 lymphocyte responses by isozyme selective cyclic nucleotide phosphodiesterase (PDE) inhibitors. *J. Pharmacol. Exp. Therap.* 282:505-12, 1997.

28. Braun, C.M., **S.K. Huang**, G.G. Bashian, A. Kagey-Sobotka, L.M. Lichtenstein, and D.M. Essayan. Corticosteroid modulation of human, antigen-specific Th1 and Th2 responses. *J. Allergy Clin. Immunol.* 100:400-7, 1997.
29. Bashian, G.G., C.M. Braun, **S.K. Huang**, A. Kagey-Sobotka, L.M. Lichtenstein, and D.M. Essayan. Differential regulation of human, antigen-specific Th1 and Th2 responses by the B-7 homologues, CD80 and CD86. *Am. J. Resp. Cell & Mol. Biol.* 17:235-42, 1997.
30. Li, X.-M, B.H. Schofield, K.-H. Kim, Q.F. Wang, and **S.K. Huang**. Induction of pulmonary allergic responses in mice by antigen-specific Th2 cells. *J. Immunol.* 160:1378-84, 1998.
31. Shin D.S., C. M. Compadre, H. Sampson, **S.K. Huang**, S. Maleki, R. Kopper, A. W. Burks, and G. A. Bannon. Biochemical and structural analysis of the IgE binding sites on Ara h1, an abundant and highly allergic peanut protein. *J. Biol. Chem.* 273:13753-9, 1998.
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33. Hizawa N., G. Collins, T. Rafnar, **S.K. Huang**, D.L. Duffy, Weber J.L., L.R. Freidhoff, E. Ehrlich, D.G. Marsh, T. Beaty, and K.C. Barnes. Linkage analysis of Dermatophagoides pteronyssinus (Der p)-specific IgE Responsiveness with polymorphic markers on chromosome 6p21 (HLAD region) in Caucasian families by Transmission/Disequilibrium Test (TDT). *J. Allergy Clin. Immunol.* 102:443-8, 1998.
34. Hizawa N., L.R. Freidhoff, E. Ehrlich, Y.F. Chiu, D.L. Duffy, C. Schou, G.M. Dunston, T.H. Beaty, D.G. Marsh, K.C. Barnes, and **S.K. Huang**. Genetic influences of chromosomes 5q31-q33 and 11q13 on specific IgE responsiveness to common inhaled allergens among African American families. *J. Allergy Clin. Immunol.* 102:449-53, 1998.
35. Braun, C.M., **Huang, S.K.**, Kagey-Sobotka, A., Lichtenstein, L.M., and Essayan, D.M. Co-regulation of antigen-specific T lymphocyte responses by type I and type II cAMP-dependent protein kinases. *Biochemical Pharmacology*, 56:871-9, 1998.

36. Essayan, D.M., G. Krishnaswamy, A. Oriente, L.M. Lichtenstein, and **S.K. Huang**. Differential regulation of antigen-induced IL-4 and IL-13 generation from T lymphocytes by Interferon- α . *J. Allergy Clin. Immunol.* 103:451-7, 1999.
37. Li, X-M., C-K. Huang, B.H. Schofield, K-H. Kim, A.W. Burks, G.A. Bannon, **S.K. Huang**, and H.A. Sampson. Strain-dependent induction of allergic reactions caused by peanut allergen DNA immunization in mice. *J. Immunol.* 162:3045-52, 1999.
38. Roy, K., H-Q. Mao, **S.K. Huang**, and K.W. Leong. Oral gene delivery with chitosan-DNA nanoparticles generate immunologic protection in a murine model of peanut allergy. *Nat. Med.* 5:387-91, 1999.
39. Nickel, R.G., S.A. Willadsen, L.R. Freidhoff, **S.K. Huang**, L. Caraballo, R.P. Naidu, P. Levett, CSGA, T. Beaty, and K.C. Barnes. Determination of Duffy-genotypes in three populations of African descent using PCR and sequence specific oligonucleotides. *Human Immunol.* 60:738-42, 1999.
40. Pacocha, S.E., A. Oriente, L.M. Lichtenstein, **S.K. Huang**, and D.M. Essayan. Regulation of antigen-induced human T lymphocyte responses by calcineurin antagonists. *J. Allergy Clin. Immunol.* 104:828-35, 1999.
41. Nickel, R.G., F.P. Saitta, L.R. Freidhoff, X.Y. Yu, E. Ehrlich, K.C. Barnes, T. Beaty, and **S.K. Huang**. Positional candidate gene approach and functional genomics strategy in atopy gene discovery. *Int. Arch. Allergy Immunol.* 118:282-4, 1999.
42. Nickel, R.G., V. Casolaro, U. Wahn, K. Beyer, K.C. Barnes, B.S. Plunkett, L.R. Freidhoff, C. Sengler, J.R. Plitt, R.P. Schleimer, L. Caraballo, R.P. Naidu, T.H. Beaty, and **S.K. Huang**. Atopic dermatitis is associated with a functional mutation in the promoter of the CC chemokine RANTES. *J. Immunol.* 164:1612-6, 2000.
43. Beyer, K., R. Nickel, L. Freidhoff, B. Björkstén, **S.K. Huang**, K.C. Barnes, S. MacDonald, J. Forster, F. Zepp, V. Wahn, T.H. Beaty, D.G. Marsh, and U. Wahn. Association and linkage disequilibrium of atopic dermatitis with chromosome 13q12-14 and 5q31-33 markers. *J. Invest. Dermatol.* 115:906-8, 2000.
44. Allen, E.M. and **S.K. Huang**. The effect of antigen-presenting cells on cytokine kinetics in Con A activated BB/Wor rat T cells. *Autoimmunity.* 32:229-40, 2000.

45. Oriente, A., N.S. Fedarko, S.E. Pacocha, **S.K. Huang**, L.M. Lichtenstein, and D.M. Essayan. Interleukin-13 modulates collagen homeostasis in human skin and keloid fibroblasts. *J Pharmacol. Exp. Therap.* 292:988-94, 2000.
46. Pacocha, S.E., A. Oriente, L.M. Lichtenstein, **S.K. Huang**, and D.M. Essayan. Interferon-beta induces selective enhancement of antigen-specific T cell responses. *J. Interferon Cytokine Res.* 20: 383-9, 2000.
47. Liu, X., R. Nickel, K. Beyer, U. Wahn and the MAS-Study Group, E. Ehrlich, L.R. Freidhoff, B. Bjorksten, T.H. Beaty, and **S.K. Huang**. An IL13 coding region variant is associated with high total serum IgE level and atopic dermatitis in German Multicenter Atopy Study (MAS-90). *J. Allergy Clin. Immunol.*106:167-70, 2000.
48. Mathias, R.A., L.R. Freidhoff, M.N. Blumenthal, D.A. Meyers, L. Lester, R. King, J.F. Xu, J. Solway, K.C. Barnes, J. Pierce, O.C. Stine, A. Togias, W. Oetting, P.L. Marshik, J.B. Hetmanski, **S.K. Huang**, E. Ehrlich, G.M. Dunston, F. Malveaux, S. Banks-Schlegel, N.J. Cox, E. Bleecker, C. Ober, T.H. Beaty, S.S. Rich and the CSGA. Genome-wide linkage analyses of total serum IgE using variance components analysis in asthmatic families. *Genet. Epidemiol.* 20:340-55, 2001.
49. Li, X-D, D.M. Essayan, M.C. Liu, T.H. Beaty, and **S.K. Huang**. Profiling of differential gene expression in activated, allergen-specific human Th2 cells. *Genes and Immunity.* 2:88-98, 2001.
50. Kawaguchi, M., F. Kokubu, H. Kuga, T. Tomita, S. Matsukura, H. Suzaki, **S.K. Huang** and M. Adachi. Influenza virus A stimulates expression of eotaxin by nasal epithelial cells. *Clin. Exp. Allergy.* 31: 873-80, 2001.
51. Kawaguchi, M, L.F. Onuchic, X.D. Li, D.M. Essayan, J. Schroeder, H.Q. Xiao, M.C. Liu, G. Krishnaswamy, G. Germino, and **S.K. Huang**. Identification of a novel cytokine, ML-1, and its expression in subjects with asthma. *J. Immunol.* 167: 4430-5, 2001.
52. Chen, L.C., Z. Zhang, A.C. Myers, and **S.K. Huang**. Cutting Edge: Altered pulmonary eosinophilic inflammation in mice deficient for Clara cell secretory 10-kDa protein. *J. Immunol.* 267: 3025-8, 2001.

53. Kawaguchi, M., F. Kokubu, H. Kuga, T. Tomita, S. Matsukura, H. Hoshino, T. Imai, M. Adachi, and **S.K. Huang**. Modulation of bronchial epithelial cells by IL-17. *J. Allergy Clin. Immunol.* 108:804-9, 2001.
54. Hsu, S.C., Chen L.C., Kuo M.L., Huang J.L., and **S.K. Huang**. Novel SNPs in a candidate gene, CRTH2, for allergic diseases. *Genes and Immunity*, 3:114-6, 2002.
55. Kumar M, Behera AK, Lockey RF, Zhang J, Bhullar G, De La Cruz CP, Chen LC, Leong KW, **Huang SK**, Mohapatra SS. Intranasal gene transfer by chitosan-DNA nanospheres protects BALB/c mice against acute respiratory syncytial virus infection. *Hum Gene Ther.*, 12:1415-25, 2002.
56. Krishnaswamy G, Hall K, Youngberg G, Hossler F, Johnson D, Block WA, **Huang SK**, Kelley J, Chi DS. Regulation of eosinophil-active cytokine production from human cord blood-derived mast cells. *J Interferon Cytokine Res.* 3:379-88, 2002.
57. Kawaguchi M, Onuchic LF, **Huang SK**. Activation of extracellular signal-regulated kinase (ERK)1/2, but not p38 and c-Jun N-terminal kinase, is involved in signaling of a novel cytokine, ML-1. *J Biol Chem.* 277:15229-32, 2002.
58. Myers AC, Bochner BS, Tomaselli GF, Fedarko N, Hudson SA, Rohde H, **Huang SK**, Xu KY. Cell Surface Expression of a Specific Antigenic Site on the Catalytic Subunit of (Na(+)+K(+))-ATPase. *Biochem Biophys Res Commun* 291:111-115, 2002.
59. **Huang, SK**, RA Rasika, E Ehrlich, B Plunkett, X Liu, XD Li, F Malveaux, G Dunston, C Ober, M Blumenthal, E Bleecker, S Rich, T Beaty and CSGA. Evidence for asthma susceptibility loci on Chromosome 11 in an African American population. *Hum Genet*, 113:71-5, 2003.
60. Liu X, Beaty TH, Deindl P, **Huang SK**, Lau S, Sommerfeld C, Fallin MD, Kao L, Wahn U, and Nickel R. Associations between total serum IgE levels and the six potentially functional variants within genes *IL4*, *IL13* and *IL4R α* in German Children: Multicenter Atopy Study (MAS). *J Allergy and Clin Immunol.*, 112:382-8, 2003.
61. Kawaguchi, M, F Kokubu, H Kuga, S Matsukura, K Ieki, M Odaka, S Watanabe, S Suzuki, M Adachi, **SK Huang**. Induction of C-X-C chemokines, growth-related oncogene (GRO) α expression and ENA-78, by ML-1 (IL-17F) involves activation of Raf1-MEK-ERK1/2 pathway. *J Pharmacol. Exp. Ther.* 307: 1213-20, 2003.

62. Liu, X, TH Beaty, P Deindl, **SK Huang**, S Lau, C Sommerfeld, MD Fallin, WL Kao, U Wahn, and R Nickel. Associations between specific serum IgE response and six variants within the genes *IL4*, *IL13* and *IL4R α* in German Children: the German Multicenter Atopy Study (MAS). *J. Allergy and Clin. Immunol.*, 113:489-495, 2004.
63. Gao PS, Heller NM, Walker W, Chen CH, Plunkett B, Roberts MH, Schleimer RP, Hopkin JM, and **Huang SK**. Variation in dinucleotide (GT) repeat sequence in the first exon of the *STAT6* gene is associated with high total serum IgE level and differentially regulates the promoter activity in vitro. *J. Med. Genet.*, 41:535-539, 2004.
64. Kawaguchi, M, F Kokubu, H Kuga, S Matsukura, K Ieki, M Odaka, S Watanabe, S Suzuki, M Adachi, **SK Huang**. Induction of granulocyte-macrophage colony-stimulating factor (GM-CSF) by a new cytokine, ML-1 (IL-17F), via Raf I-MEK-ERK pathway. *J. Allergy and Clin. Immunol.*, 114:444-450, 2004.
65. Hung CH, Chen LC, Zhang Z, Hung CH, Plunkett B, Myers AC, and **Huang SK**. Selective regulation of Th2 responses by the pulmonary Clara cell secretory 10-kDa protein (CC10). *J. Allergy and Clin. Immunol.*, 114:664-670, 2004.
66. Huang JL, Gao PS, Mathias RA, TC Yao, LC Chen, ML Kuo, Hsu SC, Plunkett B, Togias A, Barnes KC, Stellato C, Beaty TH and **Huang SK**. Sequence variants of the gene encoding chemoattractant receptor expressed on Th2 cells (*CRT2*) is associated with asthma and differentially influence the mRNA stability. *Hum. Mol Genet.*, 13:2691-7, 2004.
67. Lee SA, Fitzgerald MS, **Huang SK**, Duffourc M, Li C, Hall KH, Chi DS and Krishnaswamy G. Induction of IL-13 and MCP-1 in mast cells by IL-1 β and TNF- α . *Am. J. Respir. Cell Mol. Biol.*, 31:283-291, 2004.
68. Chi DS, Fitzgerald MS, Pitts S, Cantor K, King E, Lee SA, **Huang SK** and Krishnaswamy. MAPK-dependent regulation of IL-1- and β -adrenoreceptor-induced inflammatory cytokine production from mast cells - Implications for the stress response. *BMC Immunol.* 5:22, 2004.
69. Oda, N, PB Canelos, DM Essayan, BA Plunkett, AC Myers and **SK Huang**. IL-17F induces neutrophilic inflammation and amplifies antigen-induced pulmonary allergic response. *Am. J. Respir. Cri. Care Med.*, 171:12-8, 2005.

70. Konno S, Hoshi T, Taira T, Plunkett B and **Huang SK**. Endotoxin contamination contributes to the in vitro cytokine-inducing activity of osteopontin preparations. *J Interferon Cytokine Res.*, 25:277-82, 2005.
71. Konno S, Golden DBK, Schroeder J, Hamilton RG, Lichtenstein LM and **Huang SK**. Increased expression of osteopontin is associated with long-term bee venom immunotherapy. *J. Allergy Clin. Immunol.*, 115:1063-1067, 2005.
72. Gao PS, Mathias RA, Plunkett B, Togias A, Barnes KC, Beaty TH and Huang SK. Genetic variants of the T-cell immunoglobulin mucin 1 and 3 (*TIM1* and *TIM3*) genes are associated with asthma in an African American population. *J. Allergy Clin. Immunol.*, 115:982-988, 2005.
73. Konno S, Golden DBK, Schroeder J, Hamilton RG, Lichtenstein LM and **Huang SK**. The level of osteopontin is increased after bee venom immunotherapy. *J. Allergy Clin. Immunol.*, in press, 2005.

Non-Peer-Reviewed Articles

1. Marsh D.G., P. Zwollo, **S.K. Huang**, B. Ghosh, and A. Ansari. Molecular studies of human response to allergens. *Quantitative Biology*, Vol. 57, 1989.
2. Marsh D.G., P. Zwollo, **S.K. Huang**, and A. Ansari. Molecular genetics of human responsiveness to allergens. *Ciba Foundation Symposium on IgE, Mast Cells and the Allergic Response*, 147:171, 1989.
3. Marsh D.G., and **S.K. Huang**. Molecular genetics of human immune responsiveness to pollen allergens. *Proc. Europ. Allergol. Clin. Immunol. Mtg.*, Glasgow, 1990.
4. Marsh D.G., P. Zwollo, P., and **S.K.Huang**. Molecular genetics of human immune responsiveness to pollen allergens. *Eur. J. Resp.* 4: 60s-67s, 1991.
5. **Huang S.K.**, G. Krishnaswamy, M. Kumai, S.-N. Su, E. Palmer, and D.G. Marsh. Molecular and functional studies of human T-cell responses to allergens. *International*

Symposium-Workshop on Molecular Biology and Immunology of Allergens (D. Kraft ed.), Vienna, Austria. CRC Press, Inc., 1993.

6. Rafnar T., B. Ghosh, **S.K. Huang**, W.J. Metzler, L. Mueller, and D.G. Marsh. Expression and analysis of the highly disulfide bonded AMB V allergens from ragweed. International Symposium-Workshop on Molecular Biology and Immunology of Allergens (D. Kraft ed.), Vienna, Austria. CRC Press, Inc., 1993.
7. **Huang S.K.**, M. Yi, M. Kumai, and D.G. Marsh. Immunogenetic aspects of IgE-mediated responses. *Immunobiology of Proteins and Peptides, VII*, Plenum Publishing Co., ed. M.Z. Atassi, pp 11-16, 1994.
8. **Huang S.K.**, G. Krishnaswamy, H.-Q Xiao, S.N. Su, M.C. Liu. Qualitative and quantitative analysis of cytokine transcripts in the bronchoalveolar lavage cells of patients with asthma. *Adv. in Quan. Biol.* 725:110, 1994.
9. Eigenmann P.A., **S.K. Huang**, D. Ho, and H.A. Sampson. Human T-cell clones and cell lines specific to ovomucoid recognize different domains and consistently express IL-5. *Adv. Exp. Med. Biol.* 409:217, 1996.
10. Hsu, C-H., K-Y. Chua, **S.K. Huang**, I-P. Chiang, and K-H. Hsieh. "Glutathion S-transferase induces murine dermatitis that resembles human allergic dermatitis". *Adv. Exp. Med. Biol.* 409:217, 1996.
11. Nickel, R., K. Beyer, **S.K. Huang**, K.C. Barnes, U. Wahn. "Genetic markers of atopy in infancy: results from the German Multicenter Allergy Study". *Clin. Exp. Allergy.* 29(4): 23, 1999.

Book Chapters

1. **Huang S.K.** and D.G. Marsh. Immunogenetics of Allergic Diseases, in *Allergy: Principles and Practice*, Chapter 4, 4th edition, E. Middleton, Jr., C.E. Reed, E.F. Ellis, N.F. Adkinson, Jr., and J.W. Yunginger, editors, The C.V. Mosby Company, 1993.
2. Marsh D.G., T. Rafnar, B. Ghosh, and **S.K. Huang**. Specific immune responses to purified allergens, in *Genetics of asthma and allergy*. Blumenthal M.B. and Bjorksten B., editors, Marcel Dekker, New York, 1997.

3. Xiao H.-Q., G. Krishnaswamy, **S.K. Huang**, and M.C. Liu. Competitive reverse transcription-polymerase chain reaction to quantify small amounts of mRNA, in *Methods in Molecular Biology*. Humana Press, USA, 1998.

Review Articles

1. **Huang S.K.** and D.G. Marsh. Genetics of Allergic Diseases. *Ann. Allergy* 70:347, 1993.
2. Kleine-Tebbe J. and **S.K. Huang**. Regulation of human IgE synthesis. *Prac. Allergy and Clin. Immunol.* 9:233, 1994.
3. Essayan, D.M., G. Krishnaswamy, and **S.K. Huang**. Immunologic investigations of T-cell regulation of human IgE antibody secretion and allergic responses. *Methods: A Companion to Methods In Enzymology* 13:69, 1997.
4. **Huang, S.K.**, and X.M. Li. Modulation of pulmonary allergic responses by mucosal cytokine-gene transfer. *Allergol. Int.* 46:11, 1997.
5. **Huang, S.K.**, K.Y. Chua, and K.H. Hsieh. Allergen gene transfer. *Curr. Opin.Immunol.* 9:800, 1997.
6. **Huang, S.K.** Molecular modulation of allergic responses. *J. Allergy Clin. Immunol.* 102: 887, 1998.
7. Krishnaswamy G, Kelley J, Johnson D, Youngberg G, Stone W, **Huang SK**, Bieber J, Chi DS. The human mast cell: functions in physiology and disease. *Front. Biosci.*, 6: D1109, 2001.
8. Kawaguchi M, Adachi M., and **Huang S.K.** Structural and functional analysis of a new cytokine, ML-1 (interleukin-17F). *Allergol. Int.* 52:117, 2003.
9. Gao, P.S and **Huang S.K.** Genetic aspects of asthma. *Panminerva Medica*, 46:121-

34, 2004

10. Kawaguchi M, Adachi M, Oda N, Kokubu F, and **Huang SK**. Interleukin-17 cytokine family. *J. Allergy Clin. Immunol.*, 114:1265-73, 2004.
11. Tsai T.H., Milhorn D.M., and **Huang S.K.**. Microarray and gene clustering analysis, in *Methods in Mol. Biol.*, in press, 2005.

Inventions/Patents:

Patents awarded:

1. Title: Interferon gamma-gene-based therapy in allergic diseases.
US Patent #: 6,121,247; Issued date: 09/19/00
2. Title: Oral delivery of nucleic acid vaccines by particulate complexes.
US Patent #: 6,475,995; Issued date: 11/05/02

EDUCATIONAL ACTIVITIES

Teaching course

1. Teaching Conference, Johns Hopkins Asthma and Allergy Center, August, 1990;
Title: "Polymerase chain reaction and human T-cell responses to allergens"
2. Teaching Conference, Johns Hopkins Asthma and Allergy Center, August, 1991;
Title: "Polymerase chain reaction and cytokines"
3. Teaching Conference, Johns Hopkins Asthma and Allergy Center, August, 1992;
Title: "T-cell cytokines and Polymerase chain reaction"

4. Teaching Conference, Johns Hopkins Asthma and Allergy Center, August, 1993;
Title: "Polymerase chain reaction and cytokines"
5. Teaching Conference, Johns Hopkins Asthma and Allergy Center, August, 1994;
Title: "Role of T cells in allergic asthma"
6. Teaching Conference, Johns Hopkins Asthma and Allergy Center, August, 1995;
Title: "Role of T cells and cytokines in allergic inflammation"
7. Teaching Conference, Johns Hopkins Asthma and Allergy Center, August, 1996;
Title: "Lymphocytes, gene transfer, and allergic diseases"
8. Teaching Conference, Johns Hopkins Asthma and Allergy Center, August, 1998;
Title: "Role of lymphocytes and cytokines in allergic diseases"
9. Teaching Conference, Johns Hopkins Asthma and Allergy Center, August, 1999;
Title: "Molecular genetics study of allergic disease"
10. Teaching Conference, Johns Hopkins Asthma and Allergy Center, August, 2000;
Title: "Molecular genetics of asthma"
11. Teaching Course, Taipei Medical University, Taipei, Taiwan, May, 2000;
Title: "Biotechnology"
12. Teaching Conference, Johns Hopkins Asthma and Allergy Center, September, 2001;
Title: "Molecular genetics study of allergic disease"
13. Teaching Conference, Johns Hopkins Asthma and Allergy Center, August, 2002;
Title: "Molecular genetics and genomics of asthma"
14. Teaching Conference, Johns Hopkins Asthma and Allergy Center, September, 2003;
Title: "Molecular genetics and genomics studies of allergic disease"

Journal Review Club

1. Weekly Molecular Immunology Journal Review for Fellows and Students
2. Monthly Immunogenetics Journal Review for Fellows and Students

Mentoring:

Advisees (Postdoctoral Fellows)

1. **Noriyaki Shinomyia, MD**; Visiting Scientist (1989-1990; Study of IgE regulation); present position: Professor of Medicine, Toho University School of Medicine, Tokyo, Japan.
2. **Guha Krishnaswamy, MD**; Clinical Postdoctoral Fellow (1990-1992); present position: Professor of Medicine, East Tennessee University School of Medicine.
3. **Megumi Kumai, MD**; Visiting Assistant Professor (1990-1992); present position: Associate Professor of Otolaryngology, Hokkaido University School of Medicine, Hokkaido, Japan.
4. **Song-Nan Su, Ph.D.**; Visiting Scientist (1991-1992); present position: Investigator, Veteran General Hospital, Taipei, Taiwan.
5. **David M. Essayan, MD**; Clinical Postdoctoral Fellow (1991-1994); present position: Director of Regulatory Affairs, Amgen.
6. **Phillipe Eigenmann, MD**; Clinical Postdoctoral Fellow (1992-1995; Study of food allergen-specific T cells); present position: Medical School Faculty, Hospital Cantonal, Allergy Unit, Geneva, Switzerland.
7. **Joerg Kleine-Tebbe, MD**; Postdoctoral Fellow (1994-1995); Private Practice, Berlin, Germany.

8. **Xiu-Min Li, MD**; Postdoctoral Fellow (1994-1997); present position: Assistant Professor of Pediatrics, Mount Sinai School of Medicine. Award: Allen and Hansburys Respiratory Diseases Research Award.
9. **Qian-Fei Wang, MD**; Postdoctoral Fellow (1995-1997); present position: Postdoctoral Fellow (after obtaining a Ph.D. degree in 2002), University of California at Berkeley.
10. **Kwan Hyoung Kim, MD**; Postdoctoral Fellow (1996-1998); present position: Associate Professor of Medicine, Catholic University, Korea.
11. **Nobuyuki Hizawa, MD**; Postdoctoral Fellow (1996-1998); present position: Associate Professor of Medicine, Hokkaido University, Japan.
12. **Renate Nickel, MD**; Postdoctoral Fellow (1995-1998); present position: Faculty, Department of Pediatric Pneumology and Immunology, Charite, Humboldt University, Berlin, Germany
13. **Kirsten Beyer, MD**; Postdoctoral Fellow (1996-1998); present position: Assistant Professor, Mount Sinai School of Medicine.
14. **Mio Kawaguchi, MD**; Postdoctoral Fellow (1999-2001); present position: Instructor, Showa University School of Medicine, Japan
15. **Li-Chen Chen, MD**; Postdoctoral Fellow (1999-2001); present position: Assistant Professor of Pediatrics, Chang-Gung Memorial Hospital, Taiwan
16. **Chi-Hsing Hung, MD**; Postdoctoral Fellow (2002-2003); present position: Assistant Professor of Pediatrics, National Tri-Service Defense Hospital, Taiwan
17. **Naruhito Oda, MD**; Postdoctoral Fellow (2002-2004); present position: Instructor, Department of Medicine, Showa University, Japan
18. **Tsung-Hsien Tsai, MD**; Postdoctoral Fellow (2002-2004); present position: Instructor, Department of Dermatology, Taipei Medical University, Taipei, Taiwan

19. **John Eckman, MD**; Resident, Internal Medicine (House Resident Research, June-September, 2003). Award: 1st Place Awards for Scientific Poster Presentation on osteopontin and T cell response at 2004 annual meeting of the American College of Physicians Associates Program
20. **Satoshi Konno, MD**; Postdoctoral Fellow (2002-2004); present position, Instructor, Department of Medicine, Hokaido University, Japan.
21. **Pei-Song Gao, MD PhD**; Postdoctoral Fellow (2002-2005). Award: 2004 Sepracor Research Excellence Award from the American Academy of Allergy, Asthma and Immunology
22. **Chih-Feng Chian, M.D.**; Postdoctoral Fellow (2004-present)
23. **Masatsugu Kurokawa, MD PhD**; Postdoctoral Fellow (2004-present)
24. **Qiu Liu, MD PhD**; Postdoctoral Fellow (2004- present)

Thesis Committees

1. **Krishnendu Roy**, Ph.D. Candidate (1996-1999); Department of Biomedical Engineering, Johns Hopkins University School of Medicine. Present position: Assistant Professor, University of Texas at Austin
2. **Xin Liu**, Ph.D. Candidate (1997-2002); School of Hygiene and Public Health, Johns Hopkins University. Present position: Postdoctoral Fellow, Genetic Medicine Institute, Johns Hopkins University School of Medicine
3. **Shih-Chang Hsu**, Undergraduate Student (Howard Hughes Undergraduate Student Fellow; 2000-present), University of Maryland, College Park.
4. **Tina Kiang**, Ph.D. Candidate (1999-present); Department of Biomedical Engineering, Johns Hopkins University, School of Medicine

Training grant participation

1. Faculty, 1994-present, Clinical Fellowship Program, Division of Allergy and Clinical Immunology, Department of Medicine, Johns Hopkins University School of Medicine.
2. Faculty, 1998-present, Cellular and Molecular Medicine Graduate Program, Johns Hopkins University School of Medicine

Editorial Activities:

Journal Peer Reviewer

- A. Journal of Immunology
- B. Journal of Biological Chemistry
- C. Journal of Allergy and Clinical Immunology
- D. American Journal of Physiology
- E. Annals of Allergy, Asthma and Clinical Immunology
- F. American Journal of Respiratory Cell and Molecular Biology
- G. Journal of Immunological Methods
- H. Molecular Immunology
- I. Clinical Immunology and Immunopathology
- J. Blood

ORGANIZATIONAL ACTIVITIES

Institutional Administrative Appointments

1. Member, 1999-2001, Immunology Council, Johns Hopkins University School of Medicine
2. Member, 1999-present, Equipment Committee, Division of Allergy and Clinical Immunology, Department of Medicine, Johns Hopkins University School of Medicine

Professional Societies:

1. Member, 1999-present, American Society of Molecular Biology and Biochemistry.
2. Member, 2000-present, American Academy of Human Genetics.
3. Member, 1994-present, New York Academy of Sciences.
4. President, 2001-2004, Washington DC Chapter of the Society of Chinese Bioscientists in America (SCBA).
5. Member, 2004-present, Board of Directors, Mount Jade Science and Technology Association.

Conference Organizer, Session Chair:

1. Chair, Organizing Committee, 7th Annual Conference of the Society of Chinese Bioscientists in America (SCBA), Washington DC Chapter, November 2000.
2. Co-Chair, 1st International David G Marsh Symposium on Molecular Genetics of Atopy and Asthma, March 2000.
3. Co-Chair, 2nd International David G Marsh Symposium on Molecular Genetics of Atopy and Asthma, March 2001.

4. Co-Chair, Symposium on Biomedical Technology Development, November 2002.
5. Chair, US / Taiwan 2nd Summit Conference on Si-Soft Project and Nano Technology, November 2003.
6. Chair, Symposium on “Current Understanding and Therapy of Asthma”, the 10th International Conference of the Society of Chinese Bioscientists in America (SCBA), July 2004.
7. Chair, the 14th Johns Hopkins Asthma and Allergy Center Annual Symposium, “Functional genomics of asthma”, November 2004.
8. Chair, Monte Jade Science and Technology Association Annual Conference, “From bench research to the market place”, December 2004.

Review Groups:

Reviewer of grant applications:

1. The Wellcome Trust Senior Research Fellowship (1994)
2. Research grant, Colciencias, Colombia (1996)
3. Comitato Promotore Telethon, Italy (1996)
4. Comitato Promotore Telethon, Italy (1997)
5. Comitato Promotore Telethon, Italy (1998)
6. The Wellcome Trust Senior Research Fellowship (1998)
7. Member, Special Emphasis Study Section, Immune Tolerance, NIAID NIH (2001)

8. Member, NICHD Intramural site visit team, Heritable Disorders Branch, NICHD, NIH (2001)
9. Member, Study Section, National Research Institute of Health, Taiwan (2001-present)
10. Member, Study Section, Genomic Medicine Projects, National Science Council, Taiwan (2001-present)
11. Philip Morris External Research (2002)
12. Philip Morris External Research (2003)
13. Member, Special Emphasis Study Section, Immune Tolerance, NIAID NIH (2003)
14. Philip Morris External Research (2003)
15. Member, Special Emphasis Study Section, Immune system development and the genesis of asthma, NIAID NIH (2004)
16. Member, Special Emphasis Study Section, Fetal basis for adult diseases, EMNR NIH (2004)

Consultantships:

1. Consultant, 1996-present, Molecular Medicine Program, East Tennessee State University.
2. Consultant, 2001-present, GenMont Biotechnology Inc, Taiwan, ROC.
3. Consultant, 2003-present, Herbogen Inc, Beverly Hills, CA

RECOGNITION

Honors and Awards:

1. The Irvington Institute For Medical Research Postdoctoral Fellowship Award (1990).
2. Merrell Dow-American Academy of Allergy and Immunology Scholar in Allergy Award (1990).
3. Sandoz Young Researcher's Grant Award (1991).
4. American Academy of Allergy and Immunology Travel Grant Award (1991).

Invited Talks:

1. President's Symposium, National Meeting of American Academy of Allergy and Immunology, Baltimore, MD, March 1990. (Receiving Merrell Dow-American Academy of Allergy and Immunology Scholar in Allergy Award).
2. Special Lecture, National Taiwan University School of Medicine, Taipei, Taiwan, July 1990.
3. Special Lecture, National Yang-Ming University School of Medicine, Taipei, Taiwan, October 1991.
4. Seminar, Immunology Council, Johns Hopkins University, May 1992.
5. Special Lecture, Department of Medical Research, Veteran General Hospital, Taipei, Taiwan, September 1993.
6. Special Lecture, 6th Spring Meeting of Japanese Society of Allergology and Clinical

Immunology, Kumamoto, Japan, April 1994.

7. Special Lecture, Charles University, Prague, Czech Republic, September 1994.
8. Special Lecture, Veteran General Hospital Taichung, October 1994.
9. Special Seminar, Immunologic Inc., Waltham, MA, May 1994.
10. Special Lecture, Joint Symposium of China-Japan Friendship Hospital and Beijing Union Hospital, June 1995.
11. Special Lecture, Annual Meeting of Korean Academy of Pediatric Allergy and Respiratory Disease, April 1996.
12. Special Lecture, Spring Meeting of the 8th Japanese Congress of Allergology, September 1996.
13. Molecular Medicine Seminar, East Tennessee State University School of Medicine, September 1996.
14. Faculty Seminar, Department of Biochemistry and Molecular Biology, University of Arkansas for Medical Sciences, September 1996.
15. Special Seminar, Molecular mechanisms of asthma Workshop, Princeton, NJ, May 1996.
16. Plenary Lecture, the 47th General Meeting of the Japanese Society of Allergology, October 1997.
17. Special Lecture, Kumamoto University, Kumamoto, Japan, October 1997.
18. Special Lecture, 5th Annual Congress, British Society for Immunology, December 1997.

19. Plenary Lecture, XXXVII Congresso Nazionale Associazione Dermatologi Ospedalieri Italiani, September 1998.
20. Special Lecture, Department of Internal Medicine, University of South Florida, May 1999.
21. Plenary Lecture, Mexican Society of Allergology, Puerto Vallarta, Mexico, October 1999.
22. Keynote Lecture, Annual Meeting of the Society of Dermatology, Taiwan, May 2000.
23. Special Lecture, Murad Week, Taipei Medical University, Taipei, Taiwan, May 2000.
24. Plenary Lecture, 9th European Histocompatibility Conference, Granada, Spain, October 2001.
25. Keynote Lecture, Annual Meeting of Chinese Society of Pediatric Allergy and Immunology, September 2001.
26. Plenary Lecture, Drug Development in USA and China, Session VII., Annual Meetings of Chinese Biopharmaceutical Association, Washington DC, September 2001.
27. Special Lecture, Chang-Gung Hospital, Taiwan, December 2001.
28. Special Lecture, Kaohsiung Chang-Gung Children Hospital, Taiwan, December 2001.
29. Special Lecture, Kaohsiung Medical University, Taiwan, December 2001.
30. Plenary Lecture, Human Genomics Symposium, the 9th Annual Meeting of Society of Chinese Bioscientists in America, Taipei, Taiwan, September 2001.
31. Plenary Lecture, Symposium on Biomedical Technology Development. Washington DC, September 2002.

32. Plenary Lecture, Japanese Society of Allergology, Yokohama, Japan, November 2002.
33. Special Lecture, Department of Pulmonary Medicine, Hokkaido University, Sapporo, Japan, November 2002.
34. Proceeding of "US / Taiwan 2nd Summit Conference on Si-Soft Project and Nano Technology", November 2003.
35. Special Lecture, An-Hui Medical University, An-hui, China, July 2004.