

CURRICULUM VITAE

Hua Huang M.D., Ph.D.

I. Personal History

Born: Aug. 24, 1962 in Canton, People's Republic of China

Present Position Rank: Associate Professor

Present Address:

Division of Allergy and Immunology,
Department of Medicine and Integrated Department of Immunology,
National Jewish Health,
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Citizenship: US Citizen.

Marital Status: Married

II. Educational History

Degrees

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| 1979-1984 | Sun Yat-Sen University School of Medicine, Guangzhou, P. R. China;
MD |
| 1989-1991 | University of Wisconsin-Madison, MS in Immunology. |
| 1991-1993 | University of Wisconsin-Madison, PhD in Developmental Biology. |

Postdoctoral training

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| 1993-1995 | Leukemia Society Fellow, The Department of Molecular Biology,
Princeton University. |
| 1995-1999 | Leukemia Society Fellow and postdoctoral fellow, The Laboratory of
Immunology, NIAID, NIH. |

III. Professional Position

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| 1983-1984 | Internship, The Second Affiliated Hospital of Sun Yat-Sen Medical
School, Guangzhou, China. |
| 1984-1988 | Research Associate, Laboratory of Industrial Hygiene, Ministry of Public
Health, Beijing, People's Republic of China. |
| 1988-1989 | Visiting Scholar, Immunology, Radiation Effects Research Foundation,
Hiroshima, Japan. |

- 1989-1993 Graduate Research Assistant, Department of Zoology, University of Wisconsin.
- 1993-1995 Leukemia Society Fellow, Department of Molecular Biology, Princeton University.
- 1995-1999 Intramural Research Fellow, Laboratory of Immunology, NIH.
- 1999-2005 Assistant Professor (promoted to Associate Professor with tenure), Department of Cell Biology, Loyola University Chicago, Stritch School of Medicine. Faculty member of the Molecular Biology Graduate Program.
- 2005- Visiting Professor, Sun Yet-Sen University School of Medicine.
- 2005- Associate Professor, Division of Allergy and Immunology, Departments of Medicine and Integrated Immunology, National Jewish Health, University of Colorado Denver School of Medicine

IV. Honors and Awards

- 1988, 1989 Visiting Scholarship awarded by the Radiation Effects Research Foundation, Japan
- 1989 Certification of Appreciation from the Radiation Effects Research Foundation, Japan
- 1994 Leukemia Society of America Fellowship.
- 2000 NIH K22 Research Career Award
- 2002 The Lydia Schweppe Immunology Career Development Award.
- 2004 Travel Award by the Federation of Clinical Immunology Societies (FOCIS).

V. Professional Affiliations

- 1999-2005 Chicago Association of Immunologists
- 1999-Present American Association for the Advancement of Science
- 2000-Present American Association of Immunologists

VI. Professional Service and Committees

A. Institutional and Departmental Committees

- 1999-2005 Service to Loyola University:

Starting in 1999, I participated in teaching graduate courses organized by the Department of Microbiology and Immunology and also actively participated in teaching and training in the Molecular Biology Graduate Program. Starting in 2003 I co-directed the Cell Biology Departmental Seminar. In addition to hosting guest speakers, I regularly discussed strengths and weaknesses with student seminar presenters. Committee services included; comprehensive exam committee, Ph.D. dissertation committee, and search committee.

- 2005-date Service to National Jewish Health:

I have been serving on the graduate students' thesis committee and have been giving lectures to the Graduate students and Allergy and Immunology fellows.

I developed a workshop to teach faculty and trainees in the Department of Medicine to learn hands on knowledge about using flow cytometry.

Serve as a member in IACUC committee

B. National Service

- 2001 Chair of the “Cytokines and Chemokine’s” workshop at the Autumn Immunology Conference, Chicago, Illinois.
- 2004 Chair of the “T Cell Development” workshop at the Autumn Immunology Conference, Chicago, Illinois.
- 2008- Evaluation of tenure promotion for University of Pittsburg, Baylor University, Indiana University, Fudan University, and Hua Zhong Science and Technology University, China.
- 2011 Chaired a workshop “Cellular and Molecular Biology” at the 16th Congress of the Asian Pacific Society of Respiratory Diseases, Shanghai, China.

VII. Patents

N/A

VIII. Review and Referee Activities

Editorial Board:

2006-Present: Managing editor, Frontiers in Bioscience

2011-Present: Editorial Board of the International Journal of Biochemistry and Molecular Biology

Journal Review:

Reviewer: The Journal of Immunology, Blood, Cellular Immunology, Molecular Immunology, Cancer Research, JAK-STAT.

Study Section:

2005 Ad hoc reviewer for Immunity and Host Defense Study Section, NIH.

2006 Reviewer for Specialized, Clinically-Oriented Ventures in Environmental Research (DISCOVER) Center, NIEHS, NIH.

2008 Ad hoc reviewer, U.S.-Israel Bi-National Science Foundation.

2009 Reviewer, ZAI1 PTM-I (M1) 1, special emphasis panel, Immune Defense at the Mucosa, NIAID, NIH.

2008-date

Ad hoc reviewer, Hypersensitivity, Autoimmunity & Immune-mediated Diseases Study Section, NIH.

2013 NIH Director’s Pioneer Award, reviewer.

IX. Teaching Activities

A. Course Director

2001 Special Topic: Signal Transduction, Course Director.

2001 Molecular Biology Journal Club, Co-director, two semesters.
2003-2005 Departmental Seminar, Co-Director.

B. Graduate and Medical School Lectures

2002 Lectured on “B Cell Receptor Signaling” in Molecular Genetics of B Lymphocytes.
2003 Lectured on “Helper T Cell Lineage Commitment and Functions” in Cellular Immunology.
2004 Lectured on “B Cell Receptor Signaling” in Molecular Genetic of B Lymphocytes.
2005-Present Lecture entitled “CD4⁺ T Cell Subsets: Development and Immune Functions” in Denver Allergy Round.
2006-Present Participating in Clinic Fellow’s Journal Club study.
2007-Present Lecture entitled “Cytokine Receptor Signaling” in IMMU 7604 Special Topics in Signal Transduction in the Immune system.
2008-Present Lecture entitled “CD4 subsets: development and Function” in Immunology 7662.
2011 I have developed a hands-on workshop to teach flow cytometry.

C. Medical Student Preceptor

Faculty member of Medical Scientist Training Program, University of Colorado Denver School of Medicine

Faculty member of Allergy and Clinic Immunology training program, National Jewish Health and University of Colorado Denver School of Medicine

Trainees:

Nkiruka Erekosima, MD 2007-2009 (Faculty, Johns Hopkins School of Medicine)

Shanze Wang MD, PhD 2009-2011

D. Graduate Student Thesis Advisor

Faculty member of Immunology, graduate school of CU Denver

Faculty member of Regenerative Medicine and Stem Cell Biology Program, CU Denver School of Medicine

Faculty member of Sichuan University School of Medicine

Faculty member Loyola University Chicago School of Medicine

Graduated:

2005-2009 Yonghua Zhuang

2002-2006 Zan Huang, Ph.D. (Assistant Professor, School of life sciences, Wu Han University)

2000-2003 Kristy Grabowski Ph.D. (Senior Medical Writer at Abbott Laboratories)

Ph.D. Dissertation Committees:

2013- Emily Eshleman, Ph.D. candidate, Department of Immunology

2011- Nathan Pennock, Ph.D. candidate, Department of Immunology

2011- Christine Delgado, Ph.D. candidate, Department of Immunology

2008-2012 Allison Bamberg Ph.D., Department of Immunology

2007-2010 Kavita Tundwal Ph.D. candidate, Department of Immunology

2005-2007 Jeanette Brown M.D. Ph.D. Department of Immunology
2002-2004 Ki Jong Rhee Microbiology/Immunology, Loyola Medical School Joseph
2002-2004 R. Podojil, Cell Biology, Loyola Medical School
2003-2005 Cynthia DeBoy, Cell Biology, Loyola Medical School

Comprehensive Examine Committees:

2008 Rick Sullivan, Immunology, University of Colorado Denver
2002 Joseph R. Podojil, Cell Biology, Loyola Medical School
2003 Cynthia DeBoy, Cell Biology, Loyola Medical School
2003 Jiao de Gong, Cell Biology, Loyola Medical School

Undergraduate students:

2011-2012 Michael Hubbard (Denver University)
2009-2011 Hannah Goettle (CU-Denver)
2008-2011 J.D. Williams (Denver University)
2005-2009 Leah Cho (Denver University)
2002 Bernadine Espiritu (Northwestern)
2002 Rashid Rashid (Loyola Medical School)
1998-1999 Charles Lo (Cornell University)

E. Postdoctoral Fellows

Current:

2012- Present Yapeng Li
2010- Present Xiaopeng Qi

Past:

2010-2012 Jessie Hong
2010- 2011 Zhihong Chen (Assistant Professor, Fudan University)
2009-2011 Lee Chevas
2005-2009 Jun Nishida Ph.D. (Assistant Professor, The University of Tokushima Graduate School)
2006-2007 Keitaro Ohmari DVM. Ph.D. (Assistant Professor, Tokyo University of Agriculture and Technology)
2003-2005 Yuechun Zhu M. D. (Professor, Kun Ming Medical College)
2002-2004 Luqui Chen M. D., Ph. D.
2000-2001 Yongkang Zhang M.D., Ph.D. (Senior Specialist Department of Pharmacology, University of Illinois at Chicago)

Visiting Professor

2005-2010 Visiting Professor, Sichuan University School of Medicine.
2009-date Visiting Professor, Sun Yet-Sen University School of Medicine.

X. Research Grants, Contracts, and Special Grants

A. Current Research Grant Support

Extramural Funding

NIH 1R01AI083986-01 : Gene Regulations in Basophil-Mediated Allergic Responses; Direct Cost \$250,000/year. 07/01/2010 – 06/30/2015. Principal Investigator

NIH/NIAID T32 Training grant awarded to the University of Colorado Denver School of Medicine. Pippa Marrack PI

Pending grants:

1R01AI107022-01

Innate Effectors and Type-2 Inflammation

Role: PI

1R01HL122768-01

Cell fate specification: basophils vs mast cells

Role: PI

1R21AG047617-01

Immunological characterization of refractive asthma in the elderly

Role: PI

B. Previous Grant Support

Extramural Funding

ARRA administrative supplement NIH/NIAID

Direct Cost \$111,281/year. 1R01AI068083-01 7/1/2010-3/31/2012

Coordinating Adaptive and Innate Immunity. Principal Investigator

NIH/NIAID 1R01 AI070175-01 : Effects of Allergic Inflammation on TLR2 Signaling and Mycoplasma; \$250,000/Year. 9/01/08 – 8/31/12

NIH/NIAID 1R01AI068083-01: Coordinating Adaptive and Innate Immunity; \$111,281/year. 07/101/2010-03/31/2011. Principal Investigator

NIH/NIAID 1 RO1 AI059170—01 : Differentiation of Th2 cytokine-producing innate cells; \$225,000/year. 6/1/2005-5/31/2010

NIH/NIAID 1R01AI068083-01 : Coordinating Adaptive and Innate Immunity; \$225,000/year. 4/1/2005-3/31/2009

PP1357 : Identification of Regulatory Regions of the *Il17* Gene; \$40,000. 3/1/2007-2/28/2009. Principal Investigator

NIH/NIAID RO1 AI48568-01 : Role of IFN- γ in Th1 Cell Development; \$150,00/year. 2/1/2002-1/31/2005

K22 AI01663 Career Development Award : The Role of Phosphatases in Regulating Basal and Induced IL-4 Receptor Expression In Lymphocytes 2/1/2000-2/28/2002. Principal Investigator.

Career Development Award : Mechanism(s) by which T Cell Receptor Signals Down-regulate IL-4-induced STAT6 phosphorylation. \$150,000/year. 04/01/2000-03/31/2003. Principal Investigator. Funding Agency: The Schweppe Foundation

Intramural Funding

Banes trust Fund of Loyola University Chicago, Stritch School of Medicine : Molecular Basis of Stable Th1 phenotype. \$40,000, 3/1/2000-2/28/2001. Principal Investigator.

Department of Medicine Grant : Epigenetic modifications of Th2 cells derived from older asthmatic patients; \$10,000 07/01/2011-12/31/2011.

XI. Bibliography

A. Papers published in refereed journals

1. Gao FM, Li XL, Huang H, Wang WH. [In vitro studies of the cell cycle of mouse myelomonocytic leukemia using a fluorescence activated cell sorter and autoradiography]. *Zhonghua Zhong Liu Za Zhi*. 1987 Jan; 9(1): 10-3. Chinese.
2. Huang H, Meyer KC, Kubai L, Auerbach R. An immune model of beryllium-induced pulmonary granulomata in mice. Histopathology, immune reactivity, and flow-cytometric analysis of bronchoalveolar lavage-derived cells. *Lab Invest*. 1992 Jul; 67(1): 138-46.
3. Kusunoki Y, Huang H, Fukuda Y, Ozaki K, Saito M, Hirai Y, Akiyama M. A positive correlation between the precursor frequency of cytotoxic lymphocytes to autologous Epstein-Barr virus-transformed B cells and antibody titer level against Epstein-Barr virus-associated nuclear antigen in healthy seropositive individuals. *Microbiol Immunol*. 1993; 37(6): 461-9.
4. Kusunoki Y, Kyoizumi S, Fukuda Y, Huang H, Saito M, Ozaki K, Hirai Y, Akiyama M. Immune responses to Epstein-Barr virus in atomic bomb survivors: study of precursor frequency of cytotoxic lymphocytes and titer levels of anti-Epstein-Barr virus-related antibodies. *Radiat Res*. 1994 Apr; 138(1): 127-32.
5. Huang H, Auerbach R. Identification and characterization of hematopoietic stem cells from the yolk sac of the early mouse embryo. *Proc Natl Acad Sci U S A*. 1993 Nov 1;90 (21): 10110-4.
6. Huang H, Zettergren LD, Auerbach R. In vitro differentiation of B cells and myeloid cells from the early mouse embryo and its extra embryonic yolk sac. *Exp Hematol*. 1994 Jan; 22(1): 19-25.
7. Auerbach R, Huang H, Lu L. Hematopoietic stem cells in the mouse embryonic yolk sac. *Stem Cells*. 1996 May; 14 (3): 269-80.
8. Huang H, Hu-Li J, Chen H, Ben-Sasson SZ, Paul WE. IL-4 and IL-13 production in differentiated T helper type 2 cells is not IL-4 dependent. *J Immunol*. 1997 Oct 15; 159(8): 3731-8.

9. Ryan JJ, Huang H, McReynolds LJ, Shelburne C, Hu-Li J, Huff TF, Paul WE. Stem cell factor activates STAT-5 DNA binding in IL-3-derived bone marrow mast cells. *Exp Hematol*. 1997 Apr; 25(4): 357-62.
10. Chen H, Huang H, Paul WE. NK1.1+ CD4+ T cells lose NK1.1 expression upon invitro activation. *J Immunol*. 1997 Jun 1; 158(11): 5112-9.
11. Hu-Li J, Huang H, Ryan J, Paul WE. In differentiated CD4+ T cells, interleukin 4 production is cytokine-autonomous, whereas interferon gamma production is cytokine-dependent. *Proc Natl Acad Sci USA*. 1997 Apr 1; 94(7): 3189-94.
12. Huang H, Paul WE. Impaired interleukin 4 signaling in T helper type 1 cells. *J Exp Med*. 1998 Apr 20; 187(8): 1305-13.
13. Ryan JJ, McReynolds LJ, Huang H, Nelms K, Paul WE. Characterization of a mobile Stat6 activation motif in the human IL-4 receptor. *J Immunol*. 1998 Aug 15; 161(4): 1811-21.
14. Huang H, Pannetier C, Hu-Li J, Paul WE. Transient transfection of primary T helper cells by particle-mediated gene transfer. *J Immunol Methods*. 1998 Jun 1; 215 (1-2): 173-7.
15. Nelms K, Huang H, Ryan J, Keegan A, Paul WE. Interleukin-4 receptor signaling mechanisms and their biological significance. *Adv Exp Med Biol*. 1998; 452:37-43.
16. Huang H, Paul WE. Protein tyrosine phosphatase activity is required for IL-4 induction of IL-4 receptor alpha-chain. *J Immunol*. 2000 Feb 1; 164(3):1211-5.
17. Zhu J, Huang H, Guo L, Stonehouse T, Watson CJ, Hu-Li J, Paul WE. Transient inhibition of interleukin 4 signaling by T cell receptor ligation. *J Exp Med*. 2000 Oct 16; 192(8): 1125-34. (co-first author).
18. Zhang Y, Apilado R, Coleman J, Ben-Sasson S, Tsang S, Hu-Li J, Paul WE, Huang H. Interferon gamma stabilizes the T helper cell type 1 phenotype. *J Exp Med*. 2001 Jul 16; 194(2): 165-72.
19. Chen L, Grabowski KA, Xin JP, Coleman J, Huang Z, Espiritu B, Alkan S, Xie HB, Zhu Y, White FA, Clancy J Jr, Huang H. IL-4 induces differentiation and expansion of Th2 cytokine-producing eosinophil's. *J Immunol*. 2004 Feb 15; 172(4): 2059-66.
20. Zhu Y, Chen L, Huang Z, Alkan S, Bunting KD, Wen R, Wang D, Huang H. Cutting edge: IL-5 primes Th2 cytokine-producing capacity in eosinophil's through a STAT5-dependent mechanism. *J Immunol*. 2004 Sep 1; 173(5):2918-22.

21. Huang Z, Coleman JM, Su Y, Mann M, Ryan J, Shultz LD, Huang H. SHP-1 regulates STAT6 phosphorylation and IL-4-mediated function in a cell type-specific manner. *Cytokine*. 2005 Feb 7; 29(3):118-24.
22. Huang Z, Xin J, Coleman J, Huang H. IFN-gamma suppresses STAT6 phosphorylation by inhibiting its recruitment to the IL-4 receptor. *J Immunol*. 2005 Feb 1; 174 (3):1332-7.
23. Wu, C. Y., Yang B. Y., Zhu, Z. L., and Huang, H. Analysis of linkage of antigen-specific Th1/Th2 cytokines at a single cell level. *Chinese Journal of Immunology*. 2: 9-12 (2005). (This is a collaborative work as result of being a visiting professor in Sun Yat-sen University Medical School, which is my alma mater).
24. Xin J, Ohmori K, Nishida J, Zhu Y, Huang H. The initial response of CD4+ IL-4-producing cells. *Int Immunol*. 2007 Mar; 19(3):305-10. Epub 2007 Jan 30.
25. Ohmori K, Luo Y, Jia Y, Nishida J, Wang Z, Bunting KD, Wang D, Huang H. IL-3 induces basophil expansion in vivo by directing granulocyte-monocyte progenitors to differentiate into basophil lineage-restricted progenitors in the bone marrow and by increasing the number of basophil/mast cell progenitors in the spleen. *J Immunol*. 2009 Mar 1; 182(5):2835-41.
26. Zhuang Y, Huang Z, Nishida J, Brown M, Zhang L, Huang H. A continuous T-bet expression is required to silence the interleukin-4-producing potential in T helper type 1 cells. *Immunology*. 2009 Sep; 128(1):34-42.
27. Zhuang Y, Huang Z, Nishida J, Zhang L, Huang H. Signaling pathways that lead to the silencing of the interleukin-4-producing potential in Th1 cells. *J Interferon Cytokine Res*. 2009 Jul; 29(7):399-406.
28. Huang Y, Jin N, Roark CL, Aydintug MK, Wands JM, Huang H, O'Brien RL, Born WK. The influence of IgE-enhancing and IgE-suppressive gamma delta T cells changes with exposure to inhaled ovalbumin. *J Immunol*. 2009 Jul 15;183(2):849-55. Epub 2009 Jun 19.
29. Bai X, Kim SH, Azam T, McGibney MT, Huang H, Dinarello CA, Chan ED. IL-32 is a host protective cytokine against Mycobacterium tuberculosis in differentiated THP-1 human macrophages. *J Immunol*. 2010 Apr 1; 184(7):3830-40. Epub 2010 Feb 26.
30. Born WK, Huang Y, Jin N, Huang H, O'Brien RL. Balanced approach of gamma delta T cells to type 2 immunity. *Immunol Cell Biol*. 2010 Mar-Apr; 88(3):269-74. Epub 2010 Jan 26.

31. Ma D, Huang H, Huang Z. STAT1 signaling is required for optimal Th1 cell differentiation in mice. *Chinese Science Bulletin*. April 2010, Volume 55, Issue 11, pp1032-1040.
32. Qi X, Nishida J, Chaves L, Ohmori K, Huang H. CCAAT/enhancer-binding protein alpha (C/EBPalpha) is critical for interleukin-4 expression in response to FcepsilonRI receptor cross-linking. *J Biol Chem*. 2011 May 6; 286(18):16063-73. Epub 2011 Mar 21.
33. Huang H. Suppressing allergic immune responses. *Front Biosci (Elite Ed)*. 2011 Jun 1; 3:864-70
34. Hua Huang and Xiopeng Qi. Differentiation of Innate Type-2 Effector Cells. *Immunologic Research*, 2012. Online: DOI: 10.1007/s12026-012-8361-z; Print: 55:173-177, 2013.
35. Roza I. Nurieva, Andrew Podd, Yuhong Chen, Andrei M. Alekseev, Mei Yu, Xiaopeng Qi, Hua Huang, Renren Wen, Junmei Wang, Haiyan S. Li, Stephanie S. Watowich, Chen Dong, Demin Wang. STAT5 Negatively Regulates Follicular Helper T cell Generation and Function. *J. Biol. Chem*. 2012 Feb 8
doi:10.1074/jbc.M111.324046
36. Nicholas Goplen, Md. Zunayet Karim, Lei Guo, Yonghua Zhuang, Hua Huang, Magdalena M. Gorska, Erwin Gelfand, Gilles Pagés, Jacques Pouyssegur, and Rafeul Alam. ERK1 is Important for Th2 Differentiation and Development of Experimental Asthma. *FASEB J* 2012 Jan 18, doi:10.1096/fj.11-196477.
37. Jyoti Thaikoottathil, Richard J. Martin, Peter Y. Di, Maisha Minor, Stephanie Case, Fangkun Ning, Sean Smith, Bicheng Zhang, Gyogi Zhang, Hua Huang, Hong Wei Chu. SPLUNC1 deficiency enhances airway eosinophilic inflammation in mice. *Am J Respir Cell Mol Biol*. 2012
doi:/10.1165/rcmb.2012-0064OC.
38. Hua Huang, Yapeng Li and Xiopeng Qi. Cytokine Signaling in the Differentiation of Innate Effector Cells. *Jak-Stat*, 2013, 2:105-111, 2013.
39. Henry Milgrom and Hua Huang. Allergic Disorders at a Venerable Age, *Gerontology*, *in press*, 2013.
40. Jun Nishida, Yapeng Li, Younghua Zhuang, Zan Huang, and Hua Huang. IFN- γ suppresses permissive chromatin remodeling in the regulatory region of the *Ii4* gene. *Cytokine*, 62: 91–95, 2013.
41. Xiaopeng Qi, Lee Chaves, Yonghua Zhuang, Yuhong Chen, Demin Wang, Jacob Chahon, Brian Graham, Keitaro Ohmori, and Hua Huang. Antagonistic

regulation by transcription factors C/EBP α and MITF specifies basophil and mast cell fates. *Immunity*, 39: 97-110; 10.1016/j.immuni.2013.06.012, published online, July 18, 2013.

42. Zhihong Chen, Shanze Wang, Nkiruka Erekosima, Jessie Hong, Xiaopeng Qi, Yapeng Li, Patricia Merkel, Vijaya Nagabhushanam, Eugene Choo, Rohit Katial, Rafeul Alam, Hong Wei Chu, Yonghua Zhuang, Meiling Jin, Chunxue Bai, and Hua Huang. IL-4 confers resistance to IL-27-mediated suppression on CD4⁺ T cells by impairing STAT1 signaling. *J Allergy Clin Immunol*, *in press*, 2013.

Invited Presentations

- 1999 Department of Biology, Virginia Commonwealth University, Richmond, VA.
2001 Rush University.
2004 Department of Immunology, Shanghai Institute of Cell Biology and Biochemistry, Chinese Academic of Science.
2004 The Blood Research Institute, Medical College of Wisconsin.
2004 12th International Congress of Immunology, Montréal, Canada.
2005 Department of Immunology, Su Zhou University of Medical School.
2005 Department of Immunology, Sichuan University School of Medicine.
2006 Department of Biotherapy, Sun Yet-set University Cancer Center.
2007 Department of Immunology, Sun Yet-set University, 2007.
2007 13th International Congress of Immunology, Rio de Janeiro, Brazil.
2008 Department of Pediatric, Indiana University School of Medicine.
2010 Department of Medicine, Fudan University School of Medicine, Shanghai, China.
2011 16th Congress of the Asian Pacific Society of Respiratory Diseases, Shanghai, China.
2011 24th Annual Meeting of the Association of Medical Laboratory Immunologists, San Diego, USA.
2012 Medicine, Duke University
2012 Division of Allergic and Immunology, Northwestern University.