

CURRICULUM VITAE
Weibiao Cao, M.D., M.Sc.

Business address: Department of Pathology
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EDUCATION

9/1981-7/1986 M.D., Zhejiang Medical University
157 Yan An Road Hangzhou
Zhejiang 310006, P.R. China
Major: Medical Sciences

9/1988-2/1991 M.Sc., the Graduate School of Peking Union
Medical College
9 Dongdan Santiao
Beijing, 100730, P.R. China
Major: Internal Medicine

POSTGRADUATE TRAINING

7/1985-7/1986 Intern
8/1986-8/1988 Resident
4/1991-6/1993 Resident
Department of Medicine, PUMC Hospital
Beijing, P.R. China

12/2007-7/2011 Resident
4/2010-3/2011 Chief Resident
7/2012-10/2012 Resident
Department of Pathology, The Warren Alpert Medical School
of Brown University and Rhode Island Hospital, Providence,
RI

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POSTGRADUATE TRAINING (continued)

8/2011-6/2012 Gastrointestinal/Hepatic Pathology Fellow, Department of Pathology
The Warren Alpert Medical School of Brown University and Rhode Island Hospital, Providence, RI

POSTGRADUATE HONORS AND AWARDS

1993 Second Prize, Clinical Achievements, PUMC Hospital, Beijing, P.R. China

1994 First Prize, Clinical Achievements, PUMC Hospital, Beijing, P.R. China

1994 Third Prize, Excellent Thesis, First National Endocrinological Conference by the Middle Aged and Youth of Chinese Medical Association (Thesis: Nitric oxide inhibits the production of endothelin-1 in vivo and in cultured endothelial cells)

1994 First Prize, Academic Thesis, PUMC Hospital, Beijing, P.R. China

12/1994 Young Investigator Award, the 13th Asia Pacific Congress on Diseases of Chest, Hong Kong

1997 First Prize, Scientific Advancement, Ministry of Public Health, China

1998 Second Prize, National Scientific and Technological Advancement Award of China

1998 Young Investigator Award, 10th Biennial Meeting of the American Motility Society, Philadelphia, PA

10/2001 Young Investigator Award Finalist (Basic Science Category), Lifespan-Rhode Island Hospital 9th Annual Hospital Research Celebration, Providence, RI

10/2009 Young Investigator Award Finalist (Clinical Science Category), Lifespan-Rhode Island Hospital 17th Annual Hospital Research Celebration, Providence, RI

6/2020 The Ronald A. DeLellis Teaching Award, Best Teacher in Anatomic Pathology for the year from July 1, 2019 to June 30, 2020, Department of Pathology, The Warren Alpert Medical School of Brown University and Rhode Island Hospital, Providence, RI

PROFESSIONAL LICENSES AND BOARD CERTIFICATION

12/2007-6/2012 Limited Physician License, State of Rhode Island

1/2012-present Allopathic Physician (MD) License, State of Rhode Island

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PROFESSIONAL LICENSES AND BOARD CERTIFICATION (continued)

11/2012-12/2022 Board certification, Anatomic Pathology and Clinical Pathology, American Board of Pathology

ACADEMIC APPOINTMENTS

3/1995-1/1996 Research Assistant, Faculty of Medicine
University of Calgary, Canada

2/1996-6/2001 Research Associate, Department of Medicine
The Warren Alpert Medical School of Brown University
Providence, RI

6/2002-11/2007 Assistant Professor (Research), Department of Surgery
The Warren Alpert Medical School of Brown University
Providence, RI

7/2001-6/2013 Assistant Professor (Research), Department of Medicine
The Warren Alpert Medical School of Brown University
Providence, RI

11/2012-6/2013 Assistant Professor, Department of Pathology
The Warren Alpert Medical School of Brown University
Providence, RI

7/2013-6/2023 Associate Professor, Department of Medicine
The Warren Alpert Medical School of Brown University
Providence, RI

7/2013-6/2023 Associate Professor, Department of Pathology and
Laboratory Medicine, The Warren Alpert Medical School of
Brown University, Providence, RI

7/2023-present Professor, Department of Pathology and Laboratory
Medicine, The Warren Alpert Medical School of Brown
University, Providence, RI

HOSPITAL APPOINTMENTS

7/1993-2/1995 Attending Physician, Department of Pulmonary Medicine
Peking Union Medical College Hospital, Beijing, P.R. China

2/1996-6/2001 Research Associate, GI Motility Research Laboratory
Rhode Island Hospital, Providence, RI

11/2012-present Attending GI, breast and surgical pathologist, Department of
Pathology and Laboratory Medicine, Rhode Island Hospital,
The Miriam Hospital and Newport Hospital, Providence, RI

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HOSPITAL APPOINTMENTS (continued)

2017-present	Attending GU pathologist, Department of Pathology and Laboratory Medicine, Rhode Island Hospital, The Miriam Hospital and Newport Hospital, Providence, RI
12/2017-3/2022	Director of Autopsy Service, Department of Pathology & Laboratory Medicine, Rhode Island Hospital, The Miriam Hospital and Newport Hospital, Providence, RI
1/2018-present	Pathology Site Director of Rectal Cancer Center of Excellence, Department of Pathology and Laboratory Medicine Rhode Island Hospital and the Miriam Hospital Providence, RI

OTHER APPOINTMENTS

Research trainee

7/1993	Research Trainee, National Laboratory of Medical Molecular Biology, Beijing, P.R. China
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Study Sections to review national grants

2015-present	Member of Oncology C (ONCC) scientific peer review panel, Department of Veterans Affairs, USA
Nov. 2019 & Jun 2020	Member of NIH ZRG1 DKUS-R 10 study section
March 17, 2022	Member of the Program on the Origins of Gastroesophageal Cancers (R01/U24), National Cancer Institute, National Institutes of Health

Committee member of National Society

9/2019-3/2021	Member of Research Committee, Chinese American Pathologists Association (CAPA), USA. CAPA has more than 800 active members in 2021
3/2020-3/2021	Co-Chair of Award Committee, Chinese American Pathologists Association (CAPA), USA. CAPA has more than 800 active members in 2021
3/2021-3/2023	Member of Award Committee, Chinese American Pathologists Association (CAPA), USA. CAPA has more than 800 active members in 2021
3/2021-3/2023	Member of Education Committee, Chinese American Pathologists Association (CAPA), USA. CAPA has more than 800 active members in 2021

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Committee member of National Society (continued)

3/2021-3/2022	Chair of Autopsy Education Committee, Chinese American Pathologists Association (CAPA), USA. CAPA has more than 800 active members in 2021
2021-present	Member of USCAP Abstract Review Board in the Autopsy and Forensics category

Moderator or organizing committee member of national meeting

Sept. 11-12, 2021	Member of the organizing committee, The 7th Annual diagnostic course of Chinese American Pathologists Association (CAPA, more than 470 participants), USA
Sept. 12, 2021	Moderator of autopsy pathology section, The 7th Annual diagnostic course of Chinese American Pathologists Association (CAPA, more than 470 participants), USA
2021	Moderator of online autopsy education courses, Chinese American Pathologists Association (CAPA), USA
March 22, 2022	Moderator for a Gastrointestinal Pathology Platform Session at the 2022 USCAP Annual Meeting, Los Angeles, CA

Member of Abstract Review Committee

2008	American Gastroenterological Association annual meeting- Barrett's pathogenesis section
2015	American Gastroenterological Association annual meeting- Barrett's Esophagus: Basic Biology section
2016	American Gastroenterological Association annual meeting- Esophageal Neoplasms: Biology, Diagnosis and Therapy section

Invited Grant Reviewer

Nov. 2002	Inflammatory Bowel Disease Grants, USA
Jan. 2012	Expert reviewer for the Health Research Board, Ireland
Aug. 2013	The Terry Fox Foundation, Al Ain, United Arab Emirates
2014-2019	The Al Jalila Foundation, Dubai, United Arab Emirates

Editorial Boards

2013-2017	World Journal of Gastroenterology (indexed by Medline, 2019 impact factor 3.665; 5-year impact factor: 4.048)
2015-July, 2020	Editorial board member, Nature-Scientific Reports (indexed by Medline, 2019 impact factor: 3.998; 5-year impact factor: 4.576)

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Editorial Boards (continued)

Aug. 2020-Present Senior editorial board member, Nature-Scientific Reports
(indexed by Medline, 2020 impact factor: 4.379)

Invited Journal Reviewer

1999-2018	Gastroenterology
2003-2017	American Journal Physiology Gastrointestinal Liver Physiol
2004-2015	J Pharmacol Exp Ther
2006-2011	American Journal Physiology Cell Physiology
2006-2007	Life Sciences
2008-2015	Cancer letters
2012-2014	American Journal of Physiology Endocrinology
2013-2017	PLOS One
2014-2016	Journal of Neurogastroenterology and Motility
2014-2016	Human Pathology
2016-2017	Oncotarget

HOSPITAL COMMITTEES

2019-2022	Member, Autopsy Quality Assurance Steering Committee, Rhode Island Hospital, Providence, RI
2019	Member, Neuropathology Director Search Committee

MEMBERSHIPS IN SOCIETIES

1997-1998	New York Academy of Sciences
1997-2000	American Motility Society
1997-2016	American Physiological Society
1997-2016	American Gastroenterological Association
2009-2012	College of American Pathologists
2009-present	United States & Canadian Academy of Pathology
2010-2012	American Society for Clinical Pathology
2014-present	Rhode Island Society of Pathologists
2019-present	Chinese American Pathologists Association, USA
2023-present	European Society of Pathology

ORIGINAL PUBLICATIONS IN PEER-REVIEWED JOURNALS

1. Zhang FC, **Cao W**. Fever, rash and diarrhea. Chinese J Pathol 1987; 16(2):153-157.
2. **Cao W**, Li LY, Zhu YJ, Luo WC, He ZG. Fever, cough and pulmonary shadows. Chinese Journal of Tuberculosis and Respiratory Diseases 1990; 13(5):309-310.
3. Lu WX, **Cao W**. Pleural effusion and pulmonary shadows Chinese Journal of Tuberculosis and Respiratory Diseases 1991; 14(2):114-115.

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ORIGINAL PUBLICATIONS IN PEER-REVIEWED JOURNALS (continued)

4. **Cao W**, Luo WC, Guo ZJ, Zhu YJ. Effects of methylene blue on acute hypoxic pulmonary hypertension in anesthetized dogs. National Medical Journal of China 1992; 72(3):165-166.
5. **Cao W**, Luo WC, Guo ZJ, Zhu YJ. Methylene blue inhibits the decrease of the hypoxic pulmonary artery pressure produced by ligustrazine. Chinese Journal of Tuberculosis and Respiratory Diseases 1993; 16(2):105.
6. **Cao W**, Zeng ZP, Zhu YJ, Luo WC, Cai BQ. Inhibition of nitric oxide synthesis increases the secretion of endothelin-1 in vivo and in cultured endothelial cells. Chin Med J (Engl.). 1994 Nov; 107(11):822-6. PMID: 7867388.
7. **Cao W**, Zhu YJ, Luo WC, Cai BQ, Xu SY. Inhibition of endogenous nitric oxide synthesis enhances acute hypoxic pulmonary vasoconstriction. Chinese Journal of Tuberculosis and Respiratory Diseases 1994 Jun; 17(3):148-51, 189. Chinese. PMID: 7834769.
8. **Cao W**, Zhu YJ, Xu KF, Wang J, Luo WC. Pulmonary Nocardia infection. Chinese Journal of Internal Medicine 1994; 33(10): 663-665.
9. **Cao W**, Zeng ZP, Luo WC, Zhu YJ, Xu SY. The effect of acute pulmonary alveolar hypoxia on canine plasma endothelin-1 levels. Acta Academiae Medicinae Sinicae 1994; 16(5): 356-360. PMID: 7720127.
10. **Cao W**, Luo WC, Guo ZJ, Zhu YJ. Effects of ligustrazine and nitroglycerine on acute hypoxic pulmonary hypertension in anesthetized dogs. Acta Academiae Medicinae Sinicae 1994; 16(2):79-83. PMID: 7987946.
11. **Cao W**, Zhu YJ, Gao YL, Luo WC. A report of two cases with amyloidosis and pleural effusion. Acta Academiae Medicinae Sinicae 1994; 16(5):401-402.
12. **Cao W**, Zhu YJ. A report of one case with acute hypersensitivity pneumonitis induced by ofloxacin. Chinese Journal of Tuberculosis and Respiratory Diseases 1994; 17(5):300.
13. Sheng RY, Wang AX, **Cao W**, Zhu YJ, Yuan Y. Observation on efficacy of ruid in treatment of respiratory tract infections. Chinese Journal of New Drugs 1994; 3(6):42-44.
14. Li LY, Zhu YJ, Yu L, **Cao W**, Ma Y, Jia SQ, Wang YH, Li X. The Effect of recombinant granulocyte colony-stimulating factor in treatment of neutropenia caused by chemotherapy. Chinese Journal of New Drugs 1994; 3(1):29-32.
15. **Cao W**, Zeng ZP, Zhu YJ, Luo WC, Cai BQ. Effect of N^G-nitro-L-arginine methyl ester on the secretion of endothelin-1 in vivo and in cultured endothelial cells. National Medical Journal of China 1995; 75(3):164-166. PMID: 7780824.

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ORIGINAL PUBLICATIONS IN PEER-REVIEWED JOURNALS (continued)

16. **Cao W**, Zhu YJ, Luo WC, Wang ZF, Yao B. Reversal of acute hypoxic pulmonary hypertension with inhalation of nitric oxide. *Chinese Journal of Internal Medicine* 1995 Jan;34(1):9-12. PMID: 7600881.
17. **Cao W**, Zeng ZP, Zhu YJ, Luo WC, Wang ZF. Effects of L-arginine on acute hypoxic pulmonary hypertension and production of endothelin-1 in vivo and in cultured endothelial cells. *Acta Academiae Medicinae Sinicae* 1996; 18(3):214:218. PMID: 9388995.
18. Sohn UD, Harnett KM, **Cao W**, Rich H, Kim N, Behar J, Biancani P. Acute experimental esophagitis activates a second signal transduction pathway in cat smooth muscle from the lower esophageal sphincter. *J Pharmacol Exp Ther.* 1997 Dec; 283(3):1293-1304. PMID: 9400005.
19. **Cao W**, Zeng ZP, Zhu YJ, Luo WC. Effects of calcium channel blockers and calmodulin inhibitors on the secretion of endothelin-1 in cultured endothelial cells. *Acta Academiae Medicinae Sinicae* 1997; 19(6):465-469. PMID: 10453541.
20. **Cao W**, Zeng Z, Zhu YJ, Luo W, Demura H, Naruse M, Shi Y. Effects of tetramethylpyrazine, a Chinese medicine, on plasma endothelin-1 levels during acute pulmonary hypoxia in anesthetized dogs. *J Cardiovasc Pharmacol.* 1998; 31 Suppl 1:S456-459. PMID: 9595511.
21. Kim N, **Cao W**, Song IS, Kim CY, Sohn UD, Harnett KM, Biancani P. Leukotriene D4-induced contraction of cat esophageal and lower esophageal sphincter circular smooth muscle. *Gastroenterology.* 1998 Oct; 115(4):919-28. PMID: 9753495.
22. **Cao W**, Harnett KM, Chen Q, Jain MK, Behar J, Biancani P. Group I secreted PLA2 (sPLA2) and arachidonic acid metabolites in the maintenance of cat LES tone. *Am J Physiol* 1999 Sep; 277(3 Pt 1):G585-598. PMID: 10484384.
23. Harnett KM, **Cao W**, Kim N, Sohn UD, Rich H, Behar J, Biancani P. Signal transduction in esophageal and LES circular muscle contraction. *Yale J Biol Med* 1999 Mar-Jun; 72(2-3):153-168. Review. PMID: 10780577.
24. **Cao W**, Pricolo VE, Zhang L, Behar J, Biancani P, Kirber MT. Gq-linked NK (2) receptors mediate neurally induced contraction of human sigmoid circular smooth muscle. *Gastroenterology* 2000 Jul; 119(1):51-61. PMID: 10889154.
25. **Cao W**, Harnett KM, Behar J, Biancani P. Group I Secreted PLA2 in the maintenance of human lower esophageal sphincter tone. *Gastroenterology* 2000 Nov; 119(5):1243-1252. PMID: 11054382.
26. **Cao W**, Chen Q, Sohn UD, Kim N, Kirber MT, Harnett KM, Behar J, Biancani P. Ca²⁺⁺ induced contraction of cat esophageal circular smooth muscle cells. *Am J Physiol Cell Physiol* 2001 Apr; 280(4):C980-992. PMID: 11245615.

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ORIGINAL PUBLICATIONS IN PEER-REVIEWED JOURNALS (continued)

27. Sohn UD, **Cao W**, Tang DC, Stull JT, Haeberle JR, Wang CA, Harnett KM, Behar J, Biancani P. Myosin light chain kinase- dependent and PKC-dependent contraction of LES and esophageal smooth muscle. *Am J Physiol Gastrointest Liver Physiol.* 2001 Aug; 281(2):G467-478. PMID: 11447027.
28. Vrees MD, Pricolo VE, Potenti FM, **Cao W***. Abnormal motility in patients with ulcerative colitis: the role of inflammatory cytokines. *Arch Surg.* 2002 Apr; 137(4):439-445; discussion 445-6. PMID: 11926949.
29. **Cao W**, Harnett KM, Behar J, and P Biancani. PGF₂α-induced contraction of cat esophageal and lower esophageal sphincter circular smooth muscle. *Am J Physiol Gastrointestinal Liver Physiol.* 2002 Aug; 283(2):G282-291. PMID: 12121874.
30. **Cao W**, Sohn UD, Bitar KN, Behar J, Biancani P, Harnett KM. MAPK mediates PKC-dependent contraction of cat esophageal and lower esophageal sphincter circular smooth muscle. *Am J Physiol Gastrointestinal Liver Physiol* 2003 Jul; 285(1):G86-95. PMID: 12799309.
31. **Cao W***, Vrees MD, Kirber MT, Fiocchi C, Pricolo VE. Hydrogen peroxide contributes to motor dysfunction in ulcerative colitis. *Am J Physiol Gastrointestinal Liver Physiol* 2004 May; 286(5):G833-843. Epub 2003 Dec 11. doi: 10.1152/ajpgi.00414.2003. PMID: 14670823.
32. **Cao W**, Vrees MD, Potenti FM, Harnett KM, Fiocchi C, Pricolo VE. Interleukin 1beta-induced production of H₂O₂ contributes to reduced sigmoid colonic circular smooth muscle contractility in ulcerative colitis. *J Pharmacol Exp Ther.* 2004 Oct; 311(1):60-70. Epub 2004 Jun 17. PMID: 15205451.
33. Kim N, **Cao W**, Song IS, Kim CY, Harnett KM, Cheng L, Walsh MP, Biancani P. Distinct kinases are involved in contraction of cat esophageal and lower esophageal sphincter smooth muscles. *Am J Physiol Cell Physiol.* 2004 Aug; 287(2):C384-394. Epub 2004 May 5. PMID: 15128504.
34. **Cao W**, Cheng L, Behar J, Fiocchi C, Biancani P, Harnett KM. Proinflammatory cytokines alter/reduce esophageal circular muscle contraction in experimental cat esophagitis. *Am J Physiol Gastrointest Liver Physiol.* 2004; Dec; 287(6):G1131-1139. Epub 2004 Jul 22. PMID: 15271650.
35. Cheng L, **Cao W**, Behar J, Biancani P, Harnett KM. Inflammation induced changes in arachidonic acid metabolism in cat LES circular muscle. *Am J Physiol Gastrointest Liver Physiol.* 2005 Apr; 288(4):G787-797. Epub 2004 Nov 18. PMID: 15550558.
36. **Cao W**, Harnett KM, Cheng L, Kirber MT, Behar J, Biancani P. H₂O₂, a mediator of esophagitis-induced damage to calcium-release mechanisms in cat lower

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ORIGINAL PUBLICATIONS IN PEER-REVIEWED JOURNALS (continued)

- esophageal sphincter. *Am J Physiol Gastrointest Liver Physiol.* 2005 Jun; 288(6):G1170-1178. Epub 2005 Jan 20. PMID: 15662047.
37. Cheng L, **Cao W**, Fiocchi C, Behar J, Biancani P, Harnett KM. Platelet-activating factor and prostaglandin E2 impair esophageal ACh release in experimental esophagitis. *Am J Physiol Gastrointestinal Liver Physiol* 2005 Sep; 289(3):G418-428. Epub 2005 May 12. PMID: 15890711.
38. Cheng L, **Cao W**, Fiocchi C, Behar J, Biancani P, Harnett KM. In vitro model of acute esophagitis in the cat. *Am J Physiol Gastrointest Liver Physiol.* 2005 Nov; 289(5):G860-869. Epub 2005 Jul 21. PMID: 16037543.
39. Harnett KM, **Cao W**, Biancani P. Signal-transduction pathways that regulate smooth muscle function I. Signal transduction in phasic (esophageal) and tonic (gastroesophageal sphincter) smooth muscles. *Am J Physiol Gastrointest Liver Physiol.* 2005 Mar; 288(3):G407-16. Review. PMID: 15701619.
40. **Cao W***, Fiocchi C, Pricolo VE. Production of IL-1beta, hydrogen peroxide, and nitric oxide by colonic mucosa decreases sigmoid smooth muscle contractility in ulcerative colitis. *Am J Physiol Cell Physiol.* 2005 Dec; 289(6):C1408-1416. Epub 2005 Jul 20. PMID: 16033908.
41. Cheng L, Harnett KM, **Cao W**, Liu F, Behar J, Fiocchi F, Biancani P. Hydrogen peroxide reduces lower esophageal sphincter tone in human esophagitis. *Gastroenterology* 2005 Nov; 129(5):1675-1685. PMID: 16285965.
42. Cheng L, **Cao W**, Fiocchi C, Behar J, Biancani P, Harnett KM. HCL-induced inflammatory mediators in cat esophageal mucosa and inflammatory mediators in esophageal circular muscle in an in vitro model of esophagitis. *Am J Physiol Gastrointest Liver Physiol.* 2006 Jun; 290(6):G1307-1317. Epub 2006 Jan 26. PMID: 16439466.
43. Xiao ZL, **Cao W**, Biancani P, Behar J. Non-genomic effects of progesterone on the contraction of muscle cells from guinea pig colon. *Am J Physiol Gastrointest Liver Physiol.* 2006 May; 290(5):G1008-1015. Epub 2006 Jan 6. PMID: 16399876.
44. **Cao W***, Harnett KM, Pricolo VE. NK2 receptor-mediated spontaneous phasic contractions in normal and ulcerative colitis human sigmoid colon. *J Pharmacol Exp Ther.* 2006 Jun; 317(3):1349-55. Epub 2006 Mar 22. PMID: 16554357.
45. Fu X, Beer DG, Behar J, Wands J, Lambeth D, **Cao W***. cAMP response element-binding protein mediates acid-induced NADPH oxidase NOX5-S expression in Barrett's esophageal adenocarcinoma cells. *J Biol Chem.* 2006 Jul 21; 281(29):20368-20382. Epub 2006 May 17. PMID: 16707484.

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ORIGINAL PUBLICATIONS IN PEER-REVIEWED JOURNALS (continued)

46. **Cao W**, Cheng L, Behar J, Biancani P, Harnett KM. IL-1 β signaling in cat lower esophageal sphincter circular muscle. *Am J Physiol Gastrointest Liver Physiol*. 2006 Oct; 291(4):G672-680. Epub 2006 Apr 27. PMID: 16645161.
47. Cheng L, **Cao W**, Behar J, Fiocchi C, Biancani P, Harnett KM. Acid induced release of platelet-activating factor by human esophageal mucosa induces inflammatory mediators in circular smooth muscle. *J Pharmacol Exp Ther*. 2006 Oct; 319(1):117-126. Epub 2006 Jun 28. PMID: 16807360.
48. Si J, Fu X, Behar J, Wands J, Beer DG, Souza RF, Spechler SJ, Lambeth D, **Cao W***. NADPH oxidase NOX5-S mediates acid-induced cyclooxygenase-2 expression via activation of NF-kappa B in Barrett's esophageal adenocarcinoma cells. *J Biol Chem*. 2007 Jun 1; 282(22):16244-16255. Epub 2007 Apr 2. PMID: 17403674.
49. Si J, Behar J, Wands J, Beer DG, Lambeth D, Chin YE, **Cao W***. STAT5 mediates PAF-induced NADPH oxidase NOX5-S expression in Barrett's esophageal adenocarcinoma cells. *Am J Physiol Gastrointest Liver Physiol*. 2008 Jan; 294(1):G174-183. Epub 2007 Oct 18. PMID: 17947454.
50. Cheng L, de la Monte S, Ma J, Hong J, Tong M, **Cao W**, Behar J, Biancani P, Harnett KM. HCl-activated neural and epithelial vanilloid receptors (TRPV1) in cat esophageal mucosa. *Am J Physiol Gastrointest Liver Physiol*. 2009 Jul; 297(1):G135-143. doi: 10.1152/ajpgi.90386.2008. Epub 2009 Apr 23. PMID: 19389802.
51. Hong J, Behar J, Wands J, Resnick M, Wang LJ, DeLellis RA, Lambeth D, Souza RF, Spechler SJ, **Cao W***. Role of a novel bile acid receptor TGR5 in the development of oesophageal adenocarcinoma. *Gut* 2010 Feb; 59(2):170-180. doi: 10.1136/gut.2009.188375. Epub 2009 Nov 18. PMID: 19926617.
52. Hong J, Behar J, Wands J, Resnick M, Wang LJ, DeLellis RA, Lambeth D, **Cao W***. Bile acid reflux contributes to development of esophageal adenocarcinoma via activation of phosphatidylinositol-specific phospholipase Cgamma2 and NADPH oxidase NOX5-S. *Cancer Res*. 2010 Feb 1; 70(3):1247-1255. doi: 10.1158/0008-5472.CAN-09-2774. Epub 2010 Jan 19. PMID: 20086178.
53. Ma J, Harnett KM, Behar J, Biancani P, **Cao W***. Signaling in TRPV1-induced platelet activating factor (PAF) in human esophageal epithelial cells. *Am J Physiol Gastrointest Liver Physiol*. 2010 Feb; 298(2):G233-240. doi: 10.1152/ajpgi.00409.2009. Epub 2009 Dec 3. PMID: 19959817.
54. Hong J, Resnick M, Behar J, Wang LJ, Wands J, DeLellis RA, Souza RF, Spechler SJ, **Cao W***. Acid-induced p16 hypermethylation contributes to development of esophageal adenocarcinoma via activation of NADPH oxidase NOX5-S. *Am J*

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ORIGINAL PUBLICATIONS IN PEER-REVIEWED JOURNALS (continued)

- Physiol Gastrointest Liver Physiol. 2010 Sep; 299(3):G697-706. doi: 10.1152/ajpgi.00186.2010. Epub 2010 Jun 24. PMID: 20576920.
55. Hong J, Resnick M, Behar J, Wands J, DeLellis RA, **Cao W***. Role of Rac1 in regulation of NOX5-S function in Barrett's esophageal adenocarcinoma cells. *Am J Physiol Cell Physiol*. 2011 Aug; 301(2):C413-420. doi: 10.1152/ajpccell.00027.2011. Epub 2011 Apr 27. PMID: 21525435.
56. Zhou X, Li D, Resnick MB, Behar J, Wands J, **Cao W***. Signaling in H₂O₂-induced increase in cell proliferation in Barrett's esophageal adenocarcinoma cells. *J Pharmacol Exp Ther*. 2011 Oct; 339(1):218-227. doi: 10.1124/jpet.111.182352. Epub 2011 Jul 12. PMID: 21750116.
57. Ma J, Altomare A, Guarino M, Cicala M, Rieder F, Fiocchi C, **Cao W**, Behar J, Biancani P, Harnett KM. HCl-induced and ATP-dependent upregulation of TRPV1 receptor expression and cytokine production by human esophageal epithelial cells. *Am J Physiol Gastrointest Liver Physiol*. 2012 Sep 1; 303(5):G635-645. doi: 10.1152/ajpgi.00097.2012. Epub 2012 Jul 12. PMID: 22790593.
58. **Cao W***, Tian W, Hong J, Li D, Tavares R, Noble L, Moss SF, Resnick MB. Expression of bile acid receptor TGR5 in gastric adenocarcinoma. *Am J Physiol Gastrointest Liver Physiol*. 2013 Feb 15; 304(4):G322-327. doi: 10.1152/ajpgi.00263.2012. Epub 2012 Dec 13. PMID: 23238937.
59. Zhou X, Li D, Resnick MB, Wands J, **Cao W***. NADPH oxidase NOX5-S and nuclear factor κB1 mediate acid-induced microsomal prostaglandin E synthase-1 expression in Barrett's esophageal adenocarcinoma cells. *Mol Pharmacol*. 2013 May; 83(5):978-990. doi: 10.1124/mol.112.083287. Epub 2013 Feb 25. PMID: 23439561.
60. Hong J, Li D, Wands J, Souza R, **Cao W***. Role of NADPH oxidase NOX5-S, NF-κB, and DNMT1 in acid-induced p16 hypermethylation in Barrett's cells. *Am J Physiol Cell Physiol*. 2013 Nov 15; 305(10):C1069-1079. doi: 10.1152/ajpccell.00080.2013. Epub 2013 Sep 11. PMID: 24025864.
61. Li D, **Cao W***. Role Of intracellular calcium and NADPH oxidase NOX5-S in acid-induced DNA damage In Barrett's esophageal adenocarcinoma cells. *Am J Physiol Gastrointest Liver Physiol*. 2014 May 15; 306(10):G863-72. doi: 10.1152/ajpgi.00321.2013. Epub 2014 Apr 3. PMID: 24699332.
62. Weng YR, Yu YN, Ren LL, Cui Y, Lu YY, Chen HY, Ma X, Qin WX, **Cao W***, Hong J, Fang JY. Role of C9orf140 in the promotion of colorectal cancer progression and mechanisms of its upregulation via activation of STAT5, β-catenin and EZH2. *Carcinogenesis*. 2014 Jun; 35(6):1389-1398. doi: 10.1093/carcin/bgu057. Epub 2014 Mar 6. PMID: 24608043.

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ORIGINAL PUBLICATIONS IN PEER-REVIEWED JOURNALS (continued)

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73. Hong J, Resnick M, Behar J, Wands J, Wang LJ, DeLellis RA, Lambeth D, **Cao W**. The Bile acid receptor TGR5 and NADPH oxidase NOX5-S mediate bile acid-induced increase in cell proliferation in Barrett's esophageal adenocarcinoma cells. *Gastroenterology* 2010; 138(5, suppl 1): S170 (New Orleans, LA).
74. Ma J, Harnett KM, Behar J, Biancani P, **Cao W**. TRPV1 induced CA $^{2+}$ -dependent production of platelet activating factor (PAF) in human esophageal epithelial cells. *Gastroenterology* 2010; 138 (5, Supplement 1): S-599. (New Orleans, LA)

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ABSTRACTS (continued)

75. **Cao W**, Hong J, Behar J, Wands J, Wang LJ, DeLellis RA, Lambeth D, Resnick M. Bile acid reflux Contributes to the progression from Barrett's esophagus to esophageal adenocarcinoma via activation of a novel bile acid receptor TGR5 and NADPH oxidase NOX5-S. *Modern Pathology* 2010; 23(suppl 1): 139A. (Washington DC).
76. **Cao W**, Tian W, Hong J, Wang LJ, DeLellis RA, Moss S, Resnick M. The role of bile acid in the development of gastric adenocarcinoma via activation of a novel bile acid receptor TGR5. *Modern Pathology* 2010; 23(suppl 1): 139A. (Washington DC).
77. Sciandra K, Winn BJ, **Cao W**, Tavares R, Noble L, Resnick MB. Expression and prognostic value of S-100A proteins in Stage II colon cancer. *Modern Pathology* 2010; 23(suppl 1): 166A. (Washington DC).
78. Zhou X, Li D, Resnick M, Behar J, Wands J, Wang LJ, DeLellis R, **Cao W**. Signaling in H₂O₂-induced increase in cell proliferation In Barrett's Esophageal Adenocarcinoma Cells. *Gastroenterology* 2011; 140 (5, Supplement 1): S-220. (Chicago, IL)
79. Zhou X, Li D, Resnick M, Behar J, Wands J, Wang LJ, DeLellis R, **Cao W**. NADPH oxidase NOX5-S Mediates Acid-Induced mPGES1 Expression in Barrett's Esophageal Adenocarcinoma Cells. *Gastroenterology* 2011; 140 (5, Supplement 1): S-119 - S-220. (Chicago, IL)
80. Li D, Zhou X, Resnick M, Behar J, Wands J, Wang LJ, DeLellis R, **Cao W**. NADPH Oxidase NOX5-S Mediates Acid-induced DNA Damage in Barrett's Esophageal Adenocarcinoma Cells. *Gastroenterology* 2011; 140 (5, Supplement 1): S-220. (Chicago, IL)
81. **Cao W**, Hong J, Behar J, Wang LJ, Wands J, DeLellis R, Resnick M. Acid increases P16 Methylation via Activation of NADPH Oxidase NOX5-S in Barrett's esophageal adenocarcinoma cells. *Modern Pathology* 2011; 24: 391A. (San Antonio, Texas)
82. **Cao W**, Zhou X, Li D, Behar J, Wands J, Resnick M. NF-kB Mediates Acid-Induced mPGES1 Expression in Barrett's Esophageal Adenocarcinoma Cells. *Modern Pathology* 2012; 25: 459A. (San Antonio, Texas)
83. Ma J, Altomare A, Cicala M, Behar J, **Cao W**, Biancani P, Harnett KM. Selective activation of transcription factors in models of erosive and of non-erosive gastro-esophageal reflux disease. *Gastroenterology* 2012; 142 (Issue 5, Supplement 1): S-286. (San Diego, CA)
84. Li D, Resnick M, Wands J, **Cao W**. TGR5-mediated NADPH Oxidase NOX5-S expression contributes to Bile Acid-Induced DNA Damage In Barrett's Esophageal Adenocarcinoma Cells. *Modern Pathology* 2013, 26 (suppl 2): 443A (oral presentation, Baltimore, Maryland).

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ABSTRACTS (continued)

85. Li D, Wands J, **Cao W**. Role of HOXD9 in Acid-Induced increase in cell proliferation in Barrett's Esophageal Adenocarcinoma Cells. *Gastroenterology* 2013; 144 (Issue 5, Supplement 1): S-676 (Orlando, Florida).
86. Li D, Wands J, Souza RF, **Cao W**. Acid-induced production of interleukin-1b causes DNA damage in Barrett's cells. *Gastroenterology* 2013; 144 (Issue 5, Supplement 1): S-704 (Orlando, Florida).
87. Li D, Wands J, **Cao W**. Signaling in Bile Acid-Induced DNA Damage In Barrett's Esophageal Adenocarcinoma Cells. *Gastroenterology* 2013; 144 (Issue 5, Supplement 1): S-360 (Orlando, Florida).
88. Li D, **Cao W**. Calcium Signaling In Acid-Induced DNA Damage In Barrett's Esophageal Adenocarcinoma Cells. *Gastroenterology* 2014; 145 (Issue 5, Supplement 1): S-815 (Chicago, Illinois).
89. Hong J, Li D, **Cao W**. Acid-Induced Decrease In Cell Apoptosis Is Mediated By Activation Of NADPH Oxidase NOX5-S, NF-kB And SODD In Barrett's Esophageal Adenocarcinoma Cells. *Gastroenterology* 2014; 145 (Issue 5, Supplement 1): S-629 (presenter: W Cao, Chicago, Illinois).
90. Li D, **Cao W**. Role Of Intracellular Calcium And NADPH Oxidase NOX5-S In Acid-Induced DNA Damage In Barrett's Esophageal Adenocarcinoma Cells. *Modern Pathology* 2014; 27(suppl 2): 464A (presenter: W Cao, San Diego, California).
91. Lu S, Herzlinger M, Noble L, Yang D, Matoso A, **Cao W**, Resnick M. The utility of 15-s-HETE as a noninvasive serological marker of eosinophilic esophagitis. *Modern Pathology* 2014; 27(suppl 2): 192A. (San Diego, California)
92. Li D., Habr F, Wands J, **Cao W**. Expression of NOTCH signaling molecules in Barrett's associated adenocarcinoma. *Gastroenterology* 2015; 148 (Issue 4, Supplement 1): S78-9. (Washington, DC)
93. Marketkar S, Mangray S, Aswad B, **Cao W**. Cellular angiolipoma of the Breast: series of 4 cases, morphological characteristics, immunoprofile and review of literature. *Modern Pathology* 2015; 28(suppl 2): 55A-56A (Boston, MA).
94. Marketkar S, **Cao W**. TGR5 Expression in Benign, Preneoplastic, and Neoplastic Lesions of Barrett Esophagus: Case Series and Findings. *Archives of Pathology & Laboratory Medicine* 2015; 139 (10, Web-Only Supplement); (<http://archivesofpathology.org/doi/full/10.5858/arpa.2015-0241-AB>). (Nashville, Tennessee).
95. Zhao CL, Amin A, Yang D, Noble L, **Cao W**. TGR5 Is a Marker of the Distal Tubules and Not Expressed in Clear Cell Carcinoma: *Archives of Pathology & Laboratory*

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ABSTRACTS (continued)

- Medicine 2015; 139 (10, Web-Only Supplement);
(<http://archivesofpathology.org/doi/full/10.5858/arpa.2015-0241-AB>). (Nashville, Tennessee)
96. Li D, **Cao W**. HOX Gene Expression In Barrett's Esophageal Dysplastic and Adenocarcinoma Cells. Gastroenterology 2016; 150 (Issue 4, Supplement 1): S855 (presenter: W Cao, San Diego, CA).
97. Li D, Habr F, Wands J, **Cao W**. Role of NOTCH signaling molecules in the development of Barrett's associated adenocarcinoma. Modern Pathology 2016; 29(suppl 2): 452A. (presenter: W Cao, Seattle, WA)
98. Li D, Hong J, **Cao W**. Role of Silencer-of-death-domain (SODD) in Barrett's associated esophageal adenocarcinoma. Modern Pathology 2017; 30 (suppl 2): 454A (presenter: W Cao, San Antonio, TX).
99. Patil P, Lombardo K, Sturtevant A, **Cao W**. Immune Microenvironment in Gallbladder Carcinomas. Laboratory Investigation 2018; 98 (suppl 1): 685 (Vancouver, British Columbia, Canada)
100. Li D, Deconda D, **Cao W**, Habr F. Proton pump inhibitor treatment may reverse acid reflux-induced gene changes. Gastroenterology 2018; 154(6, suppl 1): S242 (presenter: W Cao, Washington, D.C.)
101. He X, Anthony DC and **W. Cao**. Pulmonary tumor embolism: comparison of clinical diagnoses and autopsy findings in a retrospective study over a 29-year period. Modern Pathology 2019; 32 (suppl): 15 (National Harbor, Maryland)
102. Patil PA, Lombardo K, Sturtevant A and **W Cao**. Immune Microenvironment in Barrett's esophagus, Low-Grade Dysplasia, High-Grade Dysplasia and Adenocarcinoma of Esophagus. Modern Pathology 2019; 32 (suppl): 714 (National Harbor, Maryland)
103. **Cao W**. Disseminated invasive fungal infection, a retrospective autopsy study over a 20-year period. USCAP 2021 (poster presentation, presenter: W Cao, online meeting)
104. **Cao W**, Chen S and M Birkenbach. STAT6 expression in the lungs of patients with COVID-19, an autopsy study. USCAP 2021 (poster presentation, presenter: W Cao, online meeting)
105. Chen S, Najibi-Kohne Shahri M, Birkenbach M, **Cao W** and K Dannheim. Post-mortem investigation of the role of MiT/TFE family of transcription factors and autophagy in COVID-19. USCAP 2021 (oral presentation, online meeting)

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ABSTRACTS (continued)

106. **Cao W.** Effect of the COVID-19 pandemic on autopsy rate. USCAP 2022 (poster presentation), Los Angeles, CA
107. **Cao W.** Patterns of inflammatory cell infiltration in the lungs of patients with COVID-19, an autopsy study USCAP 2022 (poster presentation), Los Angeles, CA

INVITED LECTURES

International

1. "Signaling mechanism of lower esophageal sphincter (LES) tone and its change in esophagitis", the Second Hospital affiliated with Zhejiang University School of Medicine, Zhejiang Province, P.R. China, August 15, 2002.
2. "Signaling mechanism of lower esophageal sphincter (LES) tone and its change in esophagitis", Peking Union Medical College Hospital, Beijing, P.R. China, August 21, 2002.
3. "Role of NADPH oxidase NOX5 in the development of Barrett's adenocarcinoma cells", Conference NOX Family NADPH Oxidases, Les Diablerets, Switzerland, October 15-20, 2006.
4. "Diagnosis of Barrett's esophagus: are goblet cells necessary?", Department of Gastroenterology, Peking Union Medical College Hospital, Beijing, China, March 28, 2019.
5. "COVID19: What have we learned from autopsies?". Department of Pathology, McGill University, McGill University Health Center, Montreal, Quebec, H4A 3J1, Canada, March 12, 2021.
Topics covered: 1) SARS-CoV-2 variants; 2) modified method to perform autopsy during the COVID pandemic; 3) presenting five interesting COVID-19 cases, including a patient with sickle cell disease, and patients complicated by systemic infarctions, myocarditis, acute esophagitis or sepsis; 4) examining the infiltration of CD4+ and CD8+ lymphocytes and macrophages, and the expression of STAT6 in the lungs of COVID-19
6. "Autopsy and gastrointestinal interesting cases, including Langerhans cell histiocytosis in an autopsy case, diffuse amyloidosis of the heart in an autopsy case, giardiasis in common variable immunodeficiency, cryptosporidiosis, spirochetosis, goblet cell adenocarcinoma, mixed MSS and MSI colorectal adenocarcinoma, mixed rectal adenocarcinoma and small cell carcinoma and Cronkhite-Canada syndrome", Department of Pathology, McGill University, McGill University Health Center, Montreal, Quebec, H4A 3J1, Canada, March 12, 2021.

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National

7. "Role of NADPH oxidase NOX5 in acid induced progression of Barrett's esophagus (BE) from metaplasia to esophageal adenocarcinoma", Boston VA Hospital, Boston, MA, September 2005.
8. "Role of a novel bile acid receptor TGR5 in the progression from Barrett's esophagus to esophageal adenocarcinoma", OESO 10th World Conference, Boston, MA, August 29, 2010.
9. "Role of NADPH oxidase NOX5-S in acid-induced progression from Barrett's esophagus to esophageal adenocarcinoma", OESO 10th World Conference, Boston, MA, August 29, 2010.
10. "A novel enzyme associated with esophageal adenocarcinoma, a look at NADPH oxidase NOX5-S", Department of Pathology, University of Pittsburgh Medical Center, Pittsburgh, PA, September 8, 2011.
11. "A novel enzyme in the progression from Barrett's esophagus to esophageal adenocarcinoma, a look at NADPH oxidase NOX5-S", Department of Pathology, University of Michigan, Ann Arbor, MI, September 23, 2019.
12. "Diagnosis of Barrett's esophagus: are goblet cells necessary?", Department of Pathology, New York University/Winthrop Hospital, Mineola, NY, November 22, 2019.
13. "Gastrointestinal interesting cases, including giardiasis in common variable immunodeficiency, cryptosporidiosis, spirochetosis, goblet cell adenocarcinoma, mixed MSS and MSI colorectal adenocarcinoma, mixed rectal adenocarcinoma and small cell carcinoma, Cronkhite-Canada syndrome, tubular adenoma with kayexalate crystals" Department of Pathology, New York University/Winthrop Hospital, Mineola, NY, November 22, 2019.
14. "Gastrointestinal interesting cases, including giardiasis in common variable immunodeficiency, cryptosporidiosis, spirochetosis, goblet cell adenocarcinoma, mixed MSS and MSI colorectal adenocarcinoma, mixed rectal adenocarcinoma and small cell carcinoma and Cronkhite-Canada syndrome", Department of Pathology, University of Massachusetts Medical School, Worcester, MA, January 8, 2020.
15. "A novel enzyme in the progression from Barrett's esophagus to esophageal adenocarcinoma, a look at NADPH oxidase NOX5-S", Department of Pathology, University of Massachusetts Medical School, Worcester, MA, January 8, 2020.
16. "COVID19: What have we learned from autopsies?". Department of Hematopathology, The University of Texas MD Anderson Cancer Center, Houston, Texas, March 12, 2021.

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INVITED LECTURES National (continued)

Topics covered: 1) SARS-CoV-2 variants; 2) modified method to perform autopsy during the COVID pandemic; 3) presenting five interesting COVID-19 cases, including a patient with sickle cell disease, and patients complicated by systemic infarctions, myocarditis, acute esophagitis or sepsis; 4) examining the infiltration of CD4+ and CD8+ lymphocytes and macrophages, and the expression of STAT6 in the lungs of COVID-19

17. "COVID19: What have we learned from autopsies?". Online education series of the Chinese American Pathologists Association (CAPA), West Roxbury, MA, USA, March 28, 2021.
Topics covered as described above. The lecture had 111 participants.
18. "Mixed neuroendocrine-non-neuroendocrine neoplasm (MiNEN) of the appendix: pre-mortem and postmortem findings". The 7th Annual CAPA Diagnostic Courses, USA, Sept. 11-12, 2021

Regional

19. "Mechanisms of development of lower esophageal sphincter (LES) tone", Division of Gastroenterology, Department of Medicine, Rhode Island Hospital, Providence, RI, April 15, 2003.
20. "H₂O₂ and motor dysfunction in ulcerative colitis", Conference: ROS as Signaling Molecules and Mediators of Inflammation, Providence, RI, June 5, 2004.
21. "Role of NADPH oxidases in acid-induced progression of Barrett's esophagus (BE) from metaplasia to esophageal adenocarcinoma", COBRE Symposium, Providence, RI, 2005.
22. "Signal transduction in acid-induced progression from Barrett's esophagus to adenocarcinoma", COBRE Symposium, Providence, RI, June 24, 2006.
23. "NADPH oxidase NOX5-S and Barrett's esophageal adenocarcinoma", COBRE Symposium, Providence, RI, May 30, 2007.
24. "Colonic motor dysfunction in ulcerative colitis", Department of Surgery, Rhode Island Hospital, Providence, RI, August 4, 2011.
25. "A novel bile acid receptor TGR5 and esophageal adenocarcinoma", COBRE Center, Rhode Island Hospital, Providence, RI, October 19, 2011.
26. "Barrett's esophagus: are goblet cells necessary for diagnosis?" Division of Gastroenterology, Department of Medicine, Rhode Island Hospital, Providence, RI, October 25, 2012 .

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INVITED LECTURES Regional (continued)

27. “Diagnosis of Barrett’s esophagus: are goblet cells necessary?” Department of Pathology, Rhode Island Hospital, Providence, RI, October 2015.
28. “Esophageal adenocarcinoma: the role of bile acid receptor TGR5”, Division of Gastroenterology, Department of Medicine, Rhode Island Hospital, Providence, RI, May 7, 2019.
29. “Esophageal adenocarcinoma: the role of bile acid receptor TGR5”, Department of Pathology, Rhode Island Hospital, Providence, RI, July 25, 2019.

GRANTS

1. **Principal Investigator**, The Scientific Grant of Chinese Academy of Medical Sciences for young investigators in China, entitled “Endothelin in hypoxic pulmonary hypertension”, Direct cost \$10,000 (RMB), 1992.
2. **Principal Investigator**, The Scientific Grant of the Ministry of Public Health for young investigator in China, entitled “Nitric oxide and hypoxic pulmonary hypertension”. Direct cost \$10,000 (RMB), 1993.
3. **Principal Investigator**, The Scientific Grant of Chinese Academy of Medical Sciences for young investigators in China, “Treatment of hypoxic pulmonary hypertension with inhalation of nitric oxide”. Direct cost \$10,000 (RMB), 1994.
4. **Principal Investigator**, Lifespan Research Funds, Providence, RI. Entitled “Interleukin 1 beta and contractile signal transduction in ulcerative colitis”. Direct cost \$29,960. 4/2002-12/2002.
5. **Coinvestigator**, NIH RO1-DK57030-02, entitled “Inflammation and Signal Transduction in Esophagitis”, Direct cost \$175,097. 12/1/99 – 2/28/03.
6. **Principal Investigator**, NIH R21 grant DK062775-01 entitled “Contractile signal transduction in ulcerative colitis”. Direct cost \$100,000 per year, Jan. 10, 2003-11. 30, 2004 (no cost extension to 12/31/2005). 1/10/2003-12/31/2005.
7. **Principal Investigator**, subproject of NIH COBRE grant 1P20RR17695-01, “Signal Transduction in Acid induced Progression of Barrett’s Esophagus (BE) from Metaplasia to Dysplasia.” Direct cost \$76,493 per year (Oct. 1, 2002 – Jan. 31 2006) and \$130,000 (Feb. 1, 2006 - Jun. 30, 2007). 10/1/2006-6/30/2007.
8. **Coinvestigator**, NIH RO1-DK28614, entitled “Biophysical Principles of Peristaltic Phenomena”. Direct cost \$242,000 per year. 8/1/03-6/30/07.
9. **Coinvestigator**, NIH RO1-DK57030, entitled “Inflammation and Signal Transduction in Esophagitis”, Direct cost \$200,000 2/1/07-11/30/2007.

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GRANTS (continued)

10. **Principal Investigator**, NIH 1 R21 DK073327-01, entitled “NADPH oxidases-associated transition from Barrett's esophagus to adenocarcinoma”. Direct cost \$125,000 at the first year and \$150,000 at the second year, 5/1/2006-4/30/2008 (no cost extension to 4/30/2009). 5/1/2006-4/30/2009.
11. **Principal Investigator**, NIH R01 DK080703-01A1, entitled “NADPH oxidases-associated transition from Barrett's esophagus to adenocarcinoma”. Direct cost \$175,000 per year (\$200,000 per year in the first two years), 5/1/2009-4/30/2014 (NCE 10/30/2015). 5/1/2009-10/30/2015.

UNIVERSITY TEACHING ROLES

Undergraduate Independent research project course (BIOL1950)
Student: BiYu Li, the Warren Alpert Medical School of Brown University
2011-2012
Honors project awarded: Significance of Inflammation in Esophageal Cancer
Current position: Research Associate, Verily life Science, San Francisco

MEDICAL SCHOOL COURSE

RISE Exam Review Course Leader
RISE Exam Review Course, new course created by me
Innovative teaching style: Jeopardy style with competition
Brown University Pathology Residency Program. I have been teaching residents the knowledge of anatomical pathology and clinical pathology
July, 2019-present (12-16 residents, 1-2 hours per month plus 2-3 hour course preparation)

GRADUATE MEDICAL EDUCATION – FELLOW EDUCATION

Lecturer “Introduction to GI pathology”, Gastroenterology fellows, Department of Medicine, Division of Gastroenterology Rhode Island Hospital
2011-present (around 4 fellows per year)

Fellow training GI pathology sign-out teaching
Department of Pathology, Rhode Island Hospital

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2012-present (2 fellows per year)

GRADUATE MEDICAL EDUCATION – RESIDENT EDUCATION

Resident Training

Surgical pathology sign-out teaching
Brown Pathology Residency Program, Department of
Pathology, Alpert Medical School of Brown University and
Rhode Island Hospital

2012-present (12-16 residents per year)

As a surgical pathologist, my teaching covers all areas of surgical pathology. During daily signing-out (one-on-one teaching) when I was on clinical service (2-4 weeks per month), I spent 1-2 hours a day to teach residents anatomical pathology. For example, when I signed out a breast cancer case with residents, I taught them morphological changes and types of breast cancer, precancerous lesions and prognostic factors. When I signed out a prostate cancer case with them, I reviewed Gleason score patterns, specific morphological features of prostate cancer, types of prostate cancer and immunohistochemical staining patterns. Besides glass slides, I also used PowerPoint presentations and many images from multiple books to teach them.

In addition, I also give multiple lectures as follows:

“Non-neoplastic small and large intestine”, Apr. 2014, Jun. 2015, 9/11/2017, 2018, 9/9/2019, 2020, Aug. 16, 2021

“Unknown slides”, Jan. 2016, 8/15/2016, 9/13/2021

“Unknown interesting cases”, Sept. 19, 2018

“Barrett esophagus, esophageal dysplasia and neoplasms”, 12/10/2018, 12/20/2020

“Gastrointestinal histology”, 7/14/2021

“Liver and pancreas histology”, 7/15/2021

“Introduction to Autopsy”, July, 2018, July 2019, July 2020, July 2021

Brown Pathology Residency Program, Department of
Pathology, Alpert Medical School of Brown University and
Rhode Island Hospital (12-15 residents per year)

Autopsy director and autopsy lecture leader

Department of Pathology, Rhode Island Hospital

Dec. 2017- 3/2022 (12-16 residents per year)

Innovative approach to incorporate clinical pathology knowledge into anatomic pathology. For example, when the patient had HIV, I taught residents how to look for specific organisms based on the patient’s lymphocyte count. When a patient had acute pancreatitis, I taught residents the methods of amylase and phospholipase A2 measurements, different

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RESEARCH FELLOWS TRAINED (continued)

2003-2005

Jin Si

Department of Medicine, Rhode Island Hospital
2006-2007

Jie Hong

Department of Medicine, Rhode Island Hospital
2007-2010

Current position: Professor
President Assistant
Shanghai Renji Hospital, China

Xiaoxu Zhou

Department of Medicine, Rhode Island Hospital
2009-2011

Current position: Assistant professor, University of
Minnesota Medical School

Dan Li

Department of Medicine, Rhode Island Hospital
2011-2016

Aihua Li,

Department of Medicine, Rhode Island Hospital
Sept. 2018-Aug. 2019

Current Position: Attending physician, Chongqing Cancer
Hospital, Chongqing, P.R. China