

August, 2018

## CURRICULUM VITAE

Douglas S. Levine, MD, AGAF, FACC

### Personal Data

#### *Home:*

240 Woodward Avenue, PO Box 483  
Seekonk, MA 02177  
Mobile phone: 484/238-4928  
Email: [dslev@comcast.net](mailto:dslev@comcast.net)

Citizenship: Unites States  
Married: Barbara Mae Levine, PhD, RN

### Education and Training

1969-70 Undergraduate Research in Biochemistry, Boston University, Boston, MA  
1970-74 BA, Chemistry, Boston University  
1974-75 Research in Marine Biology, New England Aquarium, Boston, MA and Brandeis University, Waltham, MA  
1975-79 MD, University of Massachusetts Medical School, Worcester, MA

### Postgraduate Training

1979-82 Medical Internship & Residency, Rhode Island Hospital, Providence, RI  
1982-84 NIH Research Fellow in Gastroenterology, University of Washington, Seattle, WA  
1982-85 Fellowship in Gastroenterology, University of Washington  
1985-86 Visiting Research Affiliate in Cell Biology, Yale University School of Medicine, New Haven, CT

### Academic and Industry Positions Held

1985-88 Acting Instructor in Medicine, Division of Gastroenterology, University of Washington, Seattle, WA  
1988-94 Assistant Professor of Medicine, Division of Gastroenterology, University of Washington  
1994-97 Associate Professor of Medicine, Division of Gastroenterology, University of Washington  
1997-98 Director, Clinical Research, Gastrointestinal Therapy Area, Astra Merck Inc, Wayne, PA  
1998-99 Director, Clinical Research, Gastrointestinal Therapy, Astra Pharmaceuticals LP, Wayne, PA  
1999-03 Executive Director, Clinical Research, and US Gastrointestinal Medical Leader, AstraZeneca LP, Wayne, PA  
2003-04 Executive Director, Clinical Research, Clinical Science Director, US Gastrointestinal Therapy Area, AstraZeneca LP, Wilmington, DE  
2003-10 Executive Director, Strategic Development, Development Brand Leader (*Nexium*®), AstraZeneca LP  
2007-10 Member, Leading Externally Team (Business Process Leadership Team), AstraZeneca LP  
2010 Executive Director, Medical Science, US Managed Markets, AstraZeneca LP  
2010-14 Vice President, Medical Scientific Affairs, Ironwood Pharmaceuticals, Cambridge, MA  
2014-16 Vice President, Global Medical Affairs, Medical Therapeutic Area Head – GI/IM, Shire, Lexington, MA  
(2015 Additional role: Interim Medical Therapeutic Area Head – Neuroscience, Shire)  
2016-17 Vice President, Head of Internal Medicine, Global Medical Affairs, Shire  
2017- Manager and Sole Member, DSL Consulting, LLC, Seekonk, MA  
2017- Consulting Medical Advisor, ARdVRk Technologies, Austin, TX  
2018- Consultant to the Executive Committee, Rome Foundation Research Institute, Chapel Hill, NC

### Hospital Positions Held

1985-97 Attending Staff Physician, University of Washington Affiliated Teaching Hospitals, Seattle, WA  
1992-93 Provisional Staff Physician, Virginia Mason Hospital, Seattle, WA  
1993-95 Courtesy Medical Staff Physician, Virginia Mason Hospital, Seattle, WA

### Board Certification

1980 Diplomate, National Board of Medical Examiners  
1983 American Board of Internal Medicine  
1987 American Board of Internal Medicine, Gastroenterology Subspecialty Board

## CURRICULUM VITAE (continued)

Douglas S. Levine, MD, AGAF, FACG

### Pharmaceutical Clinical Development and Medical Affairs Experience - US

(Astra Merck Inc / Astra Pharmaceuticals LP / AstraZeneca LP / Ironwood Pharmaceuticals / Shire)

#### Gastrointestinal and Internal Medicine Disorders

**Prilosec**® (omeprazole), **Nexium**® (esomeprazole), **Entocort**<sup>TM</sup> **EC** (budesonide) Commercial and Phase III-IV Programs  
Medical Reviewer for promotional materials (sales force training, prescriber advertising, direct-to-consumer advertising)  
Quality assurance review and approval process (legal-regulatory-medical)

Clinical trial and post-marketing product safety review

Supplemental NDA submissions

Prescribing information amendments

Internally initiated independent and collaborative clinical and marketing research

External investigator-initiated research application review

Field sales force and prescriber customer support

initial product launch or new ad campaign launch

sales force annual meetings

customer unit conferences

consultant advisory conferences

GI trainee professional development conferences

Patent defense

External affairs (public relations) consulting

Continuing medical education programs consulting

**Prilosec**® (omeprazole) Phase IV Pediatric Development Program (Physician Director):

Recruitment and organization of external consultants panel

Development of clinical trial protocols

Medical officer for clinical trials and clinical study reports

Marketing exclusivity extension per FDAMA 1997 provisions

**Nexium**® (esomeprazole) Phase III-IV Development Program

Reviewer for clinical study reports and peer-reviewed literature publications

Reviewer of NDA

Medical oversight of sNDA programs (NSAIDs, functional dyspepsia, IV formulation, Barrett's esophagus)

FDA label negotiations

US Co-leader of multifunctional clinical development and marketing team

**Prilosec OTC**<sup>TM</sup> Phase III Development Program

NDA **submissions** (portions of ISS)

Reviewer of NDA

Safety presentations at NDAC-GDAC FDA Advisory Committee Meetings, 10/20/00 and 6/21/02

**Entocort**<sup>TM</sup> **EC** (budesonide) Phase III Development Program

**Colazide**<sup>TM</sup> (balsalazide sodium) Phase III Development Program (internal consultant)

**Naropin**<sup>TM</sup> (ropivacaine) Phase II Development Program (internal consultant)

In-licensing scientific review of diagnostic and therapeutic product opportunities (internal consultant)

**Linzess**<sup>TM</sup> (linaclotide) – focus of Medical Scientific Affairs function at Ironwood

Medical representative on promotional review committee

GI content expertise (consultant) for publications, opinion leader engagement, regulatory, medical information, life cycle strategy, global partner engagement

Signatory, corporate policies & standard operating procedures

Medical representative on global safety review committee

**Lialda**<sup>TM</sup> / **Mezavant**<sup>TM</sup> (mesalamine); **Resolor**<sup>TM</sup> (prucalopride); **Gattex**<sup>TM</sup> / **Revestive**<sup>TM</sup> (teduglutide); **Natpara**<sup>TM</sup> / **Natpar**<sup>TM</sup> (recombinant parathyroid hormone); Internal Medicine Pipeline products (disease areas: eosinophilic esophagitis; moderate-to-severe inflammatory bowel disease; rare pediatric cholestatic liver diseases; non-alcoholic steatohepatitis; complications of prematurity) – focus of Global Medical Affairs Internal Medicine Franchise at Shire

#### Emerging Products

Reversible proton pump inhibitor (internal consultant)

Reflux inhibitor (internal consultant)

*Helicobacter pylori* monotherapy and vaccine (internal consultant)

## CURRICULUM VITAE (continued)

Douglas S. Levine, MD, AGAF, FACC

### Irritable / Functional Bowel Disorders

In-licensing scientific review of therapeutic product opportunities (internal consultant)

### Gastrointestinal, Cardiovascular, Endocrine, Rheumatology Disorders

In-licensing medical review of therapeutic product opportunities (internal consultant)

### Health Care Innovation Center (AstraZeneca)

Scientific review of business product opportunities (internal consultant)

Lead GI technical advisor on GE Healthcare partnership activities in GERD and NSAID-related GI disease

### Policy, Legal & Scientific Affairs (AstraZeneca)

Member, Medical Quality Team

Member, Global Healthcare Effectiveness Council

Member, Leading Externally Team

### Corporate Organizational Change Initiatives (AstraZeneca)

Leader, Design & Interpretation Operating Model Work Stream

Member, Payer into R&D

### Medical Scientific Affairs, Functional Leadership (Ironwood)

Organization Design and Development: created 20-person department

Leadership Development

High-Performing Team Development

Integration with Corporate Partners

### Global Medical Affairs, Medical Therapy Head Functional Leadership (Shire)

Gastroenterology, Internal Medicine, and Pipeline Medical Therapy Area Head

NPS Integration: GMA Integration Team Lead / R&D Integration Team Member

High-Performing Team Development (IBD, Cholestatic Liver, SBS, HPT medical affairs teams)

Interim Neuroscience Medical Therapy Area Head

Head of Internal Medicine Franchise

### Rare Disease Leadership Initiatives (Shire)

Physician advisor and Global Medical Affairs representative on corporate umbrella initiative and patient centricity and early diagnosis work streams

## CURRICULUM VITAE (continued)

Douglas S. Levine, MD, AGAF, FACG

### Honors

- 1982/85 American Medical Association Physicians' Recognition Award
- 1985 American College of Gastroenterology Research Award
- 1991 Pacific Northwest Gastroenterology Society Research Award
- 1991 Fellow, American College of Gastroenterology
- 1996 Crohn's & Colitis Foundation of American, WA State Chapter Torch of Friendship Award
- 2017 Fellow, American Gastroenterological Association

### Licensure to Practice

- 1980-82 Rhode Island State (No. 5780)
- 1982-98 Washington State (No. 19855)
- 1997-12 Commonwealth of Pennsylvania (No. MD-062687-L)
- 2011- Commonwealth of Massachusetts (No. 246272)

### Organizations

- American Association for the Study of Liver Diseases
- American College of Gastroenterology
- American Gastroenterological Association
- American Neurogastroenterology and Motility Society
- American Society for Gastrointestinal Endoscopy

### General Professional Activities

- 1985-87 Medical Advisor, Seattle Ostomy Society
- 1991 Medical Advisor, Pacific Northwest Society of Gastroenterology Nurses & Associates
- 1991-92 Continuing Medical Education Workshop Facilitator, Crohn's & Colitis Foundation of America
- 1992-95 Speaker, Solvay Pharmaceuticals Inflammatory Bowel Disease Speakers Bureau
- 1992 Contributor, Recertification Exam, American Board of Internal Medicine, GI Subspecialty Board
- 1992-94 Member, American College of Gastroenterology Research Committee
- 1993-97 Member, Medical Advisory Committee, Crohn's & Colitis Foundation of America, WA State Chapter
- 1993-97 Chairman, Professional Education Subcommittee, Crohn's & Colitis Foundation of America, WA State Chapter
- 1993 Member, NIH/NIDDK Pathogenesis of Inflammatory Bowel Disease and Celiac Disease Special Review Committee
- 1993 Member, Dinner Committee, Crohn's & Colitis Foundation of American, WA State Premier Physician Award
- 1994-96 Faculty, Point and Counterpoint in Digestive Diseases Speakers' Bureau
- 1995 Secretary/Treasurer, Pacific Northwest Gastroenterology Society
- 1996 President, Pacific Northwest Gastroenterology Society
- 1998 Member, American College of Gastroenterology Ad Hoc Committee on FDA Related Matters
- 2002 Technical Advisor, Pediatric Gastroenterology World Congress Working Group on Functional Bowel Disorders
- 2003 Industry Representative, National Cancer Institute Stomach/Esophageal Cancer Progress Review Group
- 2005 Industry Representative, ACG Institute for Clinical Research and Education, Advisory Board
- 2005 Peer Reviewer, Comparative Effectiveness of Management Strategies for GERD Evidence Report / Technology Assessment No. 1. Agency for Healthcare Research and Quality, December, 2005.
- 2006 Member, National Institutes of Health, National Commission on Digestive Diseases, Esophageal Cancer Section
- 2006-07 Member, Board of Directors, American Gastroenterological Association Fdn for Digestive Health & Nutrition
- 2010- Member, American Gastroenterological Association Foundation Legacy Society
- 2012-14 Member, American Gastroenterological Association Research Policy Committee
- 2014 Member, American Gastroenterological Association Task Force for Center for Diagnostics and Therapeutics
- 2015-17 Member, Crohn's & Colitis Foundation of America IBD Partners Industry Affairs Work Group
- 2015-16 Industry Representative, Steering Committee, Joint AASLD and FDA Conference on Trial Design and Endpoints for Clinical Trials in Patients with Primary Sclerosing Cholangitis
- 2015-19 Industry Representative, FDA Gastrointestinal Drugs Advisory Committee (GIDAC)

## CURRICULUM VITAE (continued)

Douglas S. Levine, MD, AGAF, FACG

### ***Past Ad hoc Reviewer:***

American Federation for Clinical Research, Western Section Gastroenterology (1987); Gastroenterology (1988-); American Gastroenterological Association, Morphology/Pathology Section (1989-90); Digestive Diseases and Sciences (1990-); Textbook of Gastroenterology, Yamada T, et al., Lippincott, Philadelphia, 1991; Frontiers in Gastrointestinal Research (1991); Cancer (1992-); Gastrointestinal Endoscopy (1992-); American Journal of Gastroenterology (1992-); Cancer Research (1994-); Lancet (1994-); Alimentary Pharmacology & Therapeutics (1995-); Gut (1997-)

## BIBLIOGRAPHY - PEER-REVIEWED ARTICLES

Douglas S. Levine, MD, AGAF, FACG

1. Kustin K, Levine DS, McLeod CG, Curby W. The blood of *Ascidia nigra*: Blood cell frequency distribution, morphology, and the distribution and valence of vanadium in living blood cells. *Biol Bull (Woods Hole)* 1976;150:426-441.
2. Levine DS. Peptic ulcer disease: Review and update. The present state of ulcer diagnosis and therapy are outlined. *RI Med J* 1982;65:315-323.
3. Levine DS, Surawicz CM. Severe intestinal damage following acid ingestion with minimal findings on early endoscopy. *Gastrointest Endosc* 1984; 30:247-249.
4. Levine DS. Intestinal vascular ectasia: Improving diagnostic capability poses therapeutic dilemma. *Am J Med* 1984;76:1151-1155.
5. Levine DS. Does asbestos exposure cause gastrointestinal cancer? *Dig Dis Sci* 1985;30:1189-1198.
6. Levine DS, Ree HJ, Crowley JP. Tropical sprue and multiple myeloma: Chronic immunocyte stimulation may have led to autonomous proliferation of a malignant clone of plasma cells. *RI Med J* 1986;69:277-279.
7. Levine DS. Delayed gastric emptying and chronic diarrhea in a patient with oculodentodigital dysplasia syndrome. *J Ped Gastroenterol Nutr* 1986;5:329-333.
8. Silverstein FE, Kimmey MB, Saunders DR, Levine DS. Gastric protection by misoprostol against 1300 mg of aspirin: An endoscopic study. *Dig Dis Sci* 1986;31:137S-141S.
9. Levine DS, Surawicz CM, Spencer GD, Rohrmann CA, Silverstein FE. Inflammatory polyposis two years after ischemic colon injury. *Dig Dis Sci* 1986;31:1159-1167.
10. Levine DS. "Solitary" rectal ulcer syndrome: Are "solitary" rectal ulcer syndrome and "localized" colitis cystica profunda analogous syndromes caused by rectal prolapse? *Gastroenterology* 1987;92:243-253.
11. Levine DS, Raisys VA, Ainardi V. Coating of oral beclomethasone dipropionate capsules with cellulose acetate phthalate enhances delivery of topically active antiinflammatory drug to the terminal ileum. *Gastroenterology* 1987;92:1037-1044.
12. Levine DS. Proctitis following colonoscopy. *Gastrointest Endosc* 1988;34:269-272.
13. Surawicz CM, Levine DS, Saunders DR, Rubin CE. Comparison of human jejunal and ileal fat absorption by electron microscopy. *Gastroenterology* 1988;94:1376-1382.
14. Levine DS, Surawicz CM, Ajer TN, Dean PJ, Rubin CE. Diffuse excess mucosal collagen in rectal biopsies facilitates the differential diagnosis of solitary rectal ulcer syndrome from other inflammatory bowel diseases. *Dig Dis Sci* 1988;33:1345-1352.
15. Levine DS, Huebers HA, Rubin CE, Finch CA. The blocking action of parenteral desferrioxamine on iron absorption in rodents and men. *Gastroenterology* 1988;95:1242-1248.
16. Levine DS, Reid BJ, Haggitt RC, Rubin CE, Rabinovitch PS. Correlation of ultrastructural aberrations with dysplasia and flow cytometric abnormalities in Barrett's epithelium. *Gastroenterology* 1989;96:355-367.
17. Levine DS, Rubin CE, Reid BJ, Haggitt RC. The specialized metaplastic columnar epithelium in Barrett's esophagus: A comparative transmission electron microscopic study. *Lab Invest* 1989;60:418-432.
18. Mulholland MW, Reid BJ, Levine DS, Rubin CE. Elevated gastric acid secretion in patients with Barrett's esophagus. *Dig Dis Sci* 1989;34:1329-1334.

## BIBLIOGRAPHY - PEER-REVIEWED ARTICLES (continued)

Douglas S. Levine, MD, AGAF, FACG

19. Levine DS, Woods JW. Immunolocalization of transferrin and transferrin receptor in mouse small intestinal absorptive cells. *J Histochem Cytochem* 1990;38:851-858.
20. Burmer GC, Levine DS, Kulander BG, Haggitt RC, Rubin CE, Rabinovitch PS. C-Ki-ras mutations in chronic ulcerative colitis and sporadic colon carcinoma. *Gastroenterology* 1990;99:416-420.
21. Levine DS, Reid BJ. Endoscopic biopsy technique for acquiring larger mucosal samples. *Gastrointest Endosc* 1991;37:332-337.
22. Levine DS, Sanchez CA, Rabinovitch PS, Reid BJ. Formation of the tetraploid intermediate is associated with the development of cells with more than four centrioles in the elastase-simian virus 40 tumor antigen transgenic mouse model of pancreatic cancer. *Proc Natl Acad Sci (USA)* 1991;88:6427-6431.
23. Levine DS, Rabinovitch PS, Haggitt RC, Blount PL, Dean PJ, Rubin CE, Reid BJ. Distribution of aneuploid cell populations in ulcerative colitis with dysplasia or cancer. *Gastroenterology* 1991;101:1198-1210.
24. Levine DS, Fischer SH, Christie DL, Haggitt RC, Ochs HD. Intravenous immunoglobulin therapy for active, extensive, and medically refractory idiopathic ulcerative or Crohn's colitis. *Am J Gastroenterol* 1992;87:91-100.
25. Reid BJ, Blount PL, Rubin CE, Levine DS, Haggitt RC, Rabinovitch PS. Flow cytometric and histological progression to malignancy in Barrett's esophagus: Prospective endoscopic surveillance of a cohort. *Gastroenterology* 1992;102:1212-1219.
26. Ramel S, Reid BJ, Sanchez CA, Blount PL, Levine DS, Neshat K, Haggitt RC, Dean PJ, Thor K, Rabinovitch PS. Evaluation of p53 protein expression in Barrett's esophagus by two-parameter flow cytometry. *Gastroenterology* 1992;102:1220-1228.
27. Raskind WH, Norwood T, Levine DS, Haggitt RC, Rabinovitch PS, Reid BJ. Persistent clonal areas and clonal expansion in Barrett's esophagus. *Cancer Res* 1992;52:2946-2950.
28. Rubin CE, Haggitt RC, Burmer GC, Brentnall TA, Stevens AC, Levine DS, Dean PJ, Kimmey M, Perera DR, Rabinovitch PS. DNA aneuploidy in colonic biopsies predicts future development of dysplasia in ulcerative colitis. *Gastroenterology* 1992;103: 1611-1620.
29. Levine DS, Haggitt RC, Blount PL, Rabinovitch PS, Rusch VW, Reid BJ. An endoscopic biopsy protocol can differentiate high-grade dysplasia from early adenocarcinoma in Barrett's esophagus. *Gastroenterology* 1993;105:40-50.
30. Reid BJ, Sanchez CA, Blount PL, Levine DS. Barrett's esophagus: Accumulation of cell cycle abnormalities in advancing stages of neoplastic progression. *Gastroenterology* 1993;105:119-129.
31. Neshat K, Sanchez CA, Galipeau PC, Blount PL, Levine DS, Joslyn G, Reid BJ. p53 mutations in Barrett's adenocarcinoma and high-grade dysplasia. *Gastroenterology* 1994;106:1589-1595.
32. Blount PL, Galipeau PC, Sanchez CA, Neshat K, Levine DS, Yin J, Greenwald B, Abraham JM, Meltzer SJ, Reid BJ. 17p allelic losses develop in diploid cells of patients with Barrett's esophagus who progress to aneuploidy. *Cancer Res* 1994;54:2292-2295.
33. Rusch VW, Levine DS, Haggitt RC, Reid BJ. The management of high-grade dysplasia and early cancer in Barrett's esophagus: A multidisciplinary problem. *Cancer* 1994;74:1225-1229.
34. Kristal A, Baker M, Flaherty M, Feng Z, Ylvisaker TJ, Feld AD, Levine DS. A pilot study of DNA aneuploidy in colorectal adenomas and risk of adenoma recurrence. *Cancer Epidemiol Biomarkers Prevention* 1995;4:347-352.
35. Bernstein CN, Weinstein WM, Levine DS, Shanahan F. Physicians' perceptions of dysplasia and approaches to surveillance colonoscopy in ulcerative colitis. *Am J Gastroenterol* 1995;90:2106-2114.

## BIBLIOGRAPHY - PEER-REVIEWED ARTICLES (continued)

Douglas S. Levine, MD, AGAF, FACG

36. Baehr PH, Levine DS, Bouvier ME, Hockenbery DM, Gooley TA, Stern JG, Martin PJ, McDonald GB. Oral beclomethasone dipropionate for treatment of human intestinal graft-versus-host disease. *Transplantation* 1995;60:1231-1238.
37. Brentnall TA, Haggitt RC, Rabinovitch PS, Kimmey MB, Bronner MP, Levine DS, Kowdley KV, Stevens AC, Crispin DA, Emond M, Rubin CE. Risk and natural history of colonic neoplasia in patients with primary sclerosing cholangitis and ulcerative colitis. *Gastroenterology* 1996;110:331-338.
38. Castell DO, Richter JE, Robinson M, Sontag SJ, Haber MM, The Lansoprazole Group. Efficacy and safety of lansoprazole in the treatment of erosive reflux esophagitis. *Am J Gastroenterol* 1996;91:1749-1757.
39. Galipeau PC, Cowan DS, Sanchez CA, Barrett MT, Emond M, Levine DS, Rabinovitch PS, Reid BJ. 17p (p53) allelic losses, 4N (G2/tetraploid) populations, and progression to aneuploidy in Barrett's esophagus. *Proc Natl Acad Sci (USA)* 1996;93:7081-7084.
40. Rai R, Hendrix TR, Moskaluk C, Levine DS, Pasricha PJ. Treatment of idiopathic lymphocytic enterocolitis with oral beclomethasone dipropionate. *Am J Gastroenterol* 1997;92:147-149.
41. McDonald GB, Bouvier M, Hockenbery D, Stern JG, Gooley T, Farrand A, Murakami C, Levine DS. Oral beclomethasone dipropionate for treatment of intestinal graft-versus-host disease: A randomized, controlled trial. *Gastroenterology* 1998; 115: 28-35.
42. Hanauer SB, Robinson M, Pruitt R, Lazenby AJ, Persson T, Nilsson L-G, Walton-Bowen K, Haskell LP, Levine JG, US Budesonide Enema Study Group. Budesonide enema for the treatment of active, distal ulcerative colitis and proctitis: a dose-ranging study. *Gastroenterology* 1998;115:525-532.
43. Low DE, Levine DS, Dail D, Kozarek R. Histologic and anatomic changes in Barrett's esophagus after antireflux surgery. *Am J Gastroenterol* 1999;94:80-85.
44. Revicki DA, Crawley JA, Zodet MW, Levine DS, Joelsson B. Complete resolution of heartburn symptoms and health-related quality of life in patients with gastroesophageal reflux disease. *Aliment Pharmacol Ther* 1999;13:1621-1630.
45. Moe GL, Kristal AR, Levine DS, Vaughan TL, Reid BJ. Associations of diet and nutritional status with cell proliferation fractions in Barrett's esophagus. *Nutrition Cancer* 2000;36:7-13.
46. Rudolph RE, Vaughan TL, Storer BE, Haggitt RC, Rabinovitch PS, Levine DS, Reid BJ. The effect of segment length on the risk of neoplastic progression in patients with Barrett's esophagus. *Ann Intern Med* 2000;132:612-620.
47. Levine DS, Blount PL, Rudolph RE, Reid BJ. Safety of a systematic endoscopic biopsy protocol in patients with Barrett's esophagus. *Am J Gastroenterol* 2000;95:1152-1157.
48. Reid BJ, Levine DS, Longton G, Blount PL, Rabinovitch PS. Predictors of progression to cancer in Barrett's esophagus: Baseline histology and flow cytometry identify low and high risk patient subsets. *Am J Gastroenterol* 2000;95:1669-1676.
49. Reid BJ, Blount PL, Feng Z, Levine DS. Optimizing endoscopic biopsy detection of early cancers in Barrett's high-grade dysplasia. *Am J Gastroenterol* 2000;95:3089-3096.
50. Schreiber, S, Fedorak RN, Nielsen OH, Wild G, Williams CN, Nikolaus S, Jacyna M, Lashner BA, Langl A, Rutgeerts P, Isaacs K, Van Deventer SJH, Koningsberger JC, Cohard M, LeBeaut A, Hanauer SB, The Crohn's Disease II-10 Cooperative Study Group. Safety and efficacy of recombinant human interleukin 10 in chronic active Crohn's disease. *Gastroenterology* 2000;119:1461-1472.



## BIBLIOGRAPHY - PEER-REVIEWED ARTICLES (continued)

Douglas S. Levine, MD, AGAF, FACG

51. Fedorak RN, Gangl A, Elson CO, Rutgeerts P, Schreiber S, Wild G, Hanauer SB, Kilian A, Cohard M, LeBeaut A, Feagan, The Interleukin 10 Inflammatory Bowel Disease Cooperative Study Group. Recombinant human interleukin 10 in the treatment of patients with mild to moderately active Crohn's disease. *Gastroenterology* 2000;119:1473-1482.
52. Zimmerman TE, Katona BG, Souney PF, Levine DS. Omeprazole use and administration techniques in pediatrics: A review. *Clin Therapeutics* 2001;23:660-679.
53. Reid BJ, Prevo LJ, Galipeau PC, Sanchez CA, Longton G, Levine DS, Blount PL, Rabinovitch PS. Predictors of progression in Barrett's esophagus II: 17p (p53) loss of heterozygosity identifies a patient subset at increased risk for neoplastic progression. *Am J Gastroenterol* 2001;96:2839-2848.
54. Rabinovitch PS, Longton G, Blount PL, Levine DS, Reid BJ. Predictors of progression in Barrett's esophagus III: Baseline flow cytometric variables. *Am J Gastroenterol* 2001; 96:3071-3083.
55. Vaughan TL, Kristal AR, Blount PL, Levine DS, Galipeau PC, Prevo LJ, Sanchez CA, Rabinovitch PS, Reid BJ. Nonsteroidal anti-inflammatory drug use, body mass index, and anthropometry in relation to genetic and flow cytometric abnormalities in Barrett's esophagus. *Cancer Epidemiol Biomarkers Prev* 2002;11:745-52
56. Levine DS, Riff DS, Pruitt R, Wruble L, Koval G, Sales D, Bell JK, Johnson LK. **A randomized, double blind, dose-response comparison of balsalazide (6.75 g), balsalazide (2.25 g), and mesalamine (2.4 g) in the treatment of active, mild-to-moderate ulcerative colitis.** *Am J Gastroenterol* 2002; 97:1398-1407.
57. Genta RM, Rindi G, Fiocca R, Magner DJ, D'Amico D, Levine DS. Effects of 6-12 months of esomeprazole treatment on the gastric mucosa. *Am J Gastroenterol* 2003; 98:1257-1265.
58. Katz PO, Castell DO, Levine DS. Esomeprazole resolves chronic heartburn in patients without erosive oesophagitis. *Aliment Pharmacol Ther* 2003; 18:875-882.
59. Rudolph RE, Vaughan TL, Kristal AR, Blount PL, Levine DS, Galipeau PC, Prevo LJ, Sanchez CA, Rabinovitch PS, Reid BJ. Serum selenium levels in relation to markers of neoplastic progression among persons with Barrett's esophagus. *J Natl Cancer Inst* 2003; 95:750-757.
60. Revicki DA, Zodet MW, Joshua-Gotlib S, Levine D, Crawley JA. Health-related quality of life improves with treatment-related GERD symptom resolution after adjusting for baseline severity. *Health Quality of Life Outcomes* 2003; 1:73.
61. Vakil NB, Traxler B, Levine D. Dysphagia in patients with erosive esophagitis: prevalence, severity, and response to proton pump inhibitor therapy. *Clin Gastroenterol Hepatol* 2004; 2:665-668.
62. Vakil NB, Traxler B, Levine D. Symptom response and healing of erosive esophagitis with proton pump inhibitors in patients with *Helicobacter pylori* infection. *Am J Gastroenterol* 2004; 99:1437-1441.
63. Niemcryk SJ, Joshua-Gotlib SC, Levine DS. Outpatient experience of patients with GERD in the United States: analysis of the 1998-2001 National Ambulatory Medical Care Survey. *Dig Dis Sci* 2005; 50:1904-1908.
64. Triadafilopoulos G, Kaur B, Sood S, Traxler B, Levine D, Weston A. Effects of esomeprazole combined with aspirin or rofecoxib on prostaglandin E2 production in patients with Barrett's esophagus. *Aliment Pharmacol Ther* 2006; 23:997-1005.
65. Spechler SJ, Sharma P, Traxler B, Levine D, Falk GW. Gastric and esophageal pH in patients with Barrett's esophagus treated with 3 esomeprazole dosages: a randomized, double-blind, crossover trial. *Am J Gastroenterol* 2006; 101:1964-1971.
66. Johnson DA, Katz PO, Levine D, Röhss K, Åstrand M, Junghard O, Nagy P. Prevention of relapse of healed reflux esophagitis is related to the duration of intragastric pH>4. *J Clin Gastroenterol* 2010;44:475-478.
67. Katz PO, Johnson DA, Levine D, Rohss K, Junghard O, Astrand M, Nagy P. A model of healing of Los Angeles grade C and D reflux esophagitis: is there an optimized time of acid suppression for maximal healing? *Aliment Pharmacol Ther* 2010; 32:443-447.

**BIBLIOGRAPHY - PEER-REVIEWED ARTICLES** (continued)

Douglas S. Levine, MD, AGAF, FACP

68. Alemayehu B, Ke X, Youssef NN, Crawley JA, Levine DS. Esomeprazole formulary exclusion: impact on health care use and costs. *Postgrad Med* 2012;124:149-163.

## BIBLIOGRAPHY - INVITED REVIEWS & EDITORIALS

Douglas S. Levine, MD, AGAF, FACC

69. Levine DS, Haggitt RC. Normal histology of the colon *Am J Surg Pathol* 1989;13:966-984.
70. Levine DS, Reid BJ. Endoscopic diagnosis of esophageal neoplasms. *Gastrointest Endosc Clin No Am* 1992;2:395-413.
71. Levine DS. Colonic and anorectal disorders: Diagnosis and treatment. *Geriatrics* 1992;47:22-36.
72. Levine DS. Immunoglobulin therapy in idiopathic inflammatory bowel disease. *Can J Gastroenterol* 1993;7:187-195.
73. Levine DS. Pericholangitis in patients with ulcerative colitis and risk factors for progression to colorectal cancer. *Am J Gastroenterol* 1993;88:1151-1154.
74. Levine DS. Immune modulating therapies for idiopathic inflammatory bowel diseases. *Adv Pharmacol* 1994;25:171-234.
75. Neshat K, Sanchez CA, Galipeau PC, Levine DS, Reid BJ. Barrett's esophagus: The biology of neoplastic progression *Gastroenterol Clin Biol* 1994;18:D71-D76.
76. Levine DS. Commentary: Barrett's oesophagus and p53. *The Lancet* 1994;344:212-213.
77. Reid BJ, Levine DS. Barrett's esophagus: Pathophysiology and cancer risk *Practical Gastroenterol* 1994;18:S20-S23.
78. Levine DS. Barrett's esophagus. *Sci Am Sci Med* 1994; 1(5):16-25.
79. Neshat K, Sanchez CA, Galipeau PC, Cowan DS, Ramel S, Levine DS, Reid BJ. Barrett's esophagus: A model of human neoplastic progression. *CSH Symp Quant Biol* 1994;59:577-583.
80. Levine DS. Medical and surgical options for ulcerative colitis. *Current Opin Gastroenterol* 1995;11:29-35.
81. Levine DS. Barrett's esophagus and other premalignant conditions. *Current Opin Gastroenterol* 1995;11:359-365.
82. Levine DS. Barrett's esophagus: Genomic changes and the importance of p53. *Practical Gastroenterol* 1995;19(9):32B-32H.
83. Levine DS. Neoplastic progression in Barrett's esophagus: Genomic instability, cell cycle abnormalities, and clonal evolution. *Dis Esophagus* 1996;9:165-172.
84. Levine DS. Reference reviews: Barrett's esophagus. *Issues Insights* 1996; No. 4 (July):15.
85. Levine DS. Barrett's esophagus and other premalignant conditions. *Current Opin Gastroenterol* 1996;12:385-391.
86. Levine DS. Crohn's disease: Easing exacerbations and maintaining remission. *Contemp Intern Med* 1996;8(10):47-58.
87. Levine DS. Update: Management of Barrett's esophagus. *Issues Insights* 1996; No. 5 (Dec):6-8.
88. Reid BJ, Barrett MT, Galipeau PC, Sanchez CA, Neshat K, Cowan DS, Levine DS. Barrett's esophagus: Ordering the events that lead to cancer. *Eur J Cancer Prev* 1996;5(suppl 2):57-65.
89. Kimmey MB, Boyce HW, Freston JW, Kahrilas PJ, Richter JE, Levine DS, Peura DA. Therapeutic approaches to healing esophagitis - panel discussion. *Am J Gastroenterol* 1997;92(suppl):S27-S29.
90. Boyce HW, Richter JE, Freston JW, Levine DS, Lechago J, Kahrilas PJ. Long-term management of GERD and its complications - panel discussion. *Am J Gastroenterol* 1997;92(suppl):S34-S35.
91. Levine DS. Management of dysplasia in the columnar lined esophagus. *Gastroenterol Clin No Am* 1997;26:613-634.

## **BIBLIOGRAPHY - INVITED REVIEWS & EDITORIALS**

Douglas S. Levine, MD, AGAF, FACP

92. Goyal R, Hamilton FA, Antonioli DA, et al. Columnar lined (Barrett's) esophagus: Highlights of the NIDDK/VHA Conference. *Clinician* 1999;16(6):1-32.

93. McCourt T, Levine D. My GI Health: Reimagining the Dialogue Between Patients and Physicians. *Medical Marketing & Media*. May 30, 2014.

94. Levine DS. Postfellowship pathways: consider a career in the biopharmaceutical industry. *The New Gastroenterologist* (supplement to *GI & Hepatology News*), Fall 2015:25-27.

## BIBLIOGRAPHY - BOOK CHAPTERS

Douglas S. Levine, MD, AGAF, FACC

95. Levine DS. Ultrastructural insights into Barrett's esophagus: Comparative electron microscopic studies. In: Hirschowitz BI, ed. Accomplishments in oncology: Premalignant lesions of the esophagus and colon, vol 3. Lippincott, Philadelphia, 1989:45-65.
96. Rabinovitch PS, Burner GB, Haggitt RC, Levine DS, Rubin CE, Reid BJ. Flow cytometric changes that precede cancer: Premalignant gastrointestinal disease. In: Salzman GC, ed. Proceedings of the International Society for Optical Engineering: New technologies in cytometry, vol 1063, The Society of Photo-Optical Instrumentation Engineers - the International Society for Optical Engineering, Bellingham, Washington, 1989:170-177.
97. Levine DS. Flow cytometry: Overview and changes in ulcerative colitis. In: Riddell RH, ed. Dysplasia and cancer in colitis. Elsevier, New York, 1991:209-217.
98. Ochs HD, Fischer SH, Christie DL, Haggitt RC, Levine DS. Intravenous immunoglobulin in idiopathic inflammatory bowel disease: Results of an open-label therapeutic trial. In: Imbach P, ed. Immunotherapy with intravenous immunoglobulins. Academic Press, London, 1991:359-376.
99. Levine DS, Haggitt RC. Colon. In: Sternberg SS, ed. Histology for pathologists. Raven Press, New York, 1991:573-591.
100. Rubin CE, Haggitt RC, Levine DS. Endoscopic mucosal biopsy. In: Yamada T, Alpers HD, Owyang C, Powell DW, Silverstein FE, eds. Textbook of gastroenterology, Lippincott, Philadelphia, 1991:2479-2523.
101. Levine DS. Clinical features and complications of Crohn's disease. In: Targan SR, Shanahan F, eds. Inflammatory bowel disease: From bench to bedside. Williams & Wilkins, Baltimore, 1994:296-316.
102. Levine DS. Inflammatory bowel diseases. In: Bierman CW, Pearlman DS, Shapiro GG, Busse WW, eds. Allergy, asthma, and immunology from infancy to adulthood, 3<sup>rd</sup> edition. Saunders, Philadelphia, 1996:687-702.
103. Levine DS. Ulcerative colitis. In: Rakel RE, ed. Conn's current therapy. Saunders, Philadelphia, 1996:468-473.
104. Levine DS. Barrett's esophagus. In: Yamada T, Alpers DH, Laine L, Owyang C, Powell DW, eds. Gastroenterology updates. Lippincott-Raven, Philadelphia, vol 2, no. 2, 1997:1-18.
105. Levine DS. Intravenous immunoglobulin therapy in idiopathic inflammatory bowel diseases. In: Lee ML, Strand V, eds. Intravenous immunoglobulins in clinical practice. Marcell Dekker, New York, 1997:451-465.
106. Levine DS, Haggitt RC. Colon. In: Sternberg SS, ed. Histology for pathologists, 2<sup>nd</sup> edition. Lippincott-Raven, Philadelphia, 1997:519-537.
107. Dattamajumdar AK, Myers JA, Proctor AH, Levine DS, Blount PL, Reid BJ, Martin RW. Novel low-cost fiber-optic colorimetric instrument to rapidly screen premalignant esophageal tissue. In: Proceedings of the International Society for Optical Engineering: Biomedical sensing and imaging technologies, vol 3253, The Society of Photo-Optical Instrumentation Engineers - The International Society for Optical Engineering, Bellingham, Washington, 1998:56-65.
108. Barrett MT, Sanchez CA, Galipeau PC, Neshat K, Cowan DS, Levine DS, and Reid BJ. Neoplastic progression in Barrett's esophagus. 1998 (in press).

## BIBLIOGRAPHY - LETTERS

Douglas S. Levine, MD, AGAF, FACC

109. Levine DS. *Reply to* “Is Barrett’s guilty as charged?” by WS Hughes [submitted in response to Levine DS, Haggitt RC, Blount PL, Rabinovitch PS, Rusch VW, Reid BJ. An endoscopic biopsy protocol can differentiate high-grade dysplasia from early adenocarcinoma in Barrett’s esophagus. *Gastroenterology* 1994;105:40-50.] *Gastroenterology* 1994;106:274-275.

110. Levine DS. *Reply to* “Cancer surveillance in Barrett’s esophagus: What is the end point?” by SJ Spechler, RK Goyal [submitted in response to Levine DS, Haggitt RC, Blount PL, Rabinovitch PS, Rusch VW, Reid BJ. An endoscopic biopsy protocol can differentiate high-grade dysplasia from early adenocarcinoma in Barrett’s esophagus. *Gastroenterology* 1994;105:40-50.] *Gastroenterology* 1994;106:275-277.

111. Levine DS. *Reply to* “Dysplastic Barrett’s: Is continued surveillance appropriate?” by GWB Clark, AP Ireland, TR DeMeester [submitted in response to Levine DS, Haggitt RC, Blount PL, Rabinovitch PS, Rusch VW, Reid BJ. An endoscopic biopsy protocol can differentiate high-grade dysplasia from early adenocarcinoma in Barrett’s esophagus. *Gastroenterology* 1994;105:40-50.] *Gastroenterology* 1994;106:1128-1129.

112. Bernstein CN, Weinstein WM, Levine DS, Shanahan F. *Reply to* “Re: Bernstein et al.: Surveillance colonoscopy in ulcerative colitis.” By BA Lashner, JW Singleton [submitted in response to Bernstein CN, Weinstein WM, Levine DS, Shanahan F. Physicians’ perceptions of dysplasia and approaches to surveillance colonoscopy in ulcerative colitis. *Am J Gastroenterol* 1996;90:2106-2114.] *Am J Gastroenterol* 1997;91:1472-1473.

## PUBLISHED ABSTRACTS

Douglas S. Levine, MD, AGAF, FACC

113. Levine DS, Rubin CE. Topical beclomethasone dipropionate enemas improve distal ulcerative colitis and idiopathic proctitis without systemic toxicity. *Gastroenterology* 1985;88:1473.
114. Levine DS, Surawicz CM, Ajer TN, Rubin CE. A saffron collagen stain facilitates the diagnosis of solitary ulcer-colitis cystica profunda in the usual shallow rectal biopsy. *Gastroenterology* 1985;88:1473.
115. Levine DS, Rohrmann CA, Silverstein FE. Endoscopic-fluoroscopic intubation of the small bowel in a patient with oculodentodigital dysplasia (ODDD). *Gastrointest Endosc* 1985;31:132-133.
116. Silverstein FE, Saunder DR, Chapman RW, Levine DS, Kimmey MB, Reid BJ. Cimetidine mucosal protection: A dose response study. *Gastrointest Endosc* 1985;31:136.
117. Levine DS, Surawicz CM, Ajer TN, Rubin CE. Differentiation of idiopathic inflammatory bowel disease from solitary rectal ulcer-colitis cystica profunda syndrome by demonstration of excess rectal mucosal collagen. *Proceedings of the Second International Symposium on Inflammatory Bowel Disease, Jerusalem, Israel, September, 1985.*
118. Levine DS, Surawicz CM, Ajer TN, Rubin CE. Demonstration of mucosal fibrosis differentiates solitary rectal ulcer syndrome from idiopathic inflammatory bowel disease. *Clin Res* 1986;34:30A.
119. Levine DS, Rubin CE. Electron microscopic evidence for the gastric origin of Barrett's metaplasia and dysplasia. *Gastroenterology* 1986;90:1519.
120. Levine DS, Rubin CE. Neoplastic features of dysplastic epithelium in Barrett's esophagus by electron microscopy. *Gastroenterology* 1986;90:1519.
121. Levine DS, Ainaidi V, Raisys VA, Rubin CE. Selective delivery of orally administered beclomethasone dipropionate (BDP) to the terminal ileum and right colon. *Gastroenterology* 1986;90:1519.
122. Silverstein FE, Kimmey MB, Saunders DR, Levine DS. Mucosal protection with misoprostol: Dose response study using a single dose aspirin model. *Gastrointest Endosc* 1986;32:176-177.
123. Levine DS, Reid BJ, Rubin CE, Haggitt RC. Barrett's esophagus: Ultrastructural epithelial abnormalities in dysplasia and adenocarcinoma. *Gastroenterology* 1987;92:1503.
124. Levine DS, Woods JW. Provision of iron-containing diet does not induce expression of transferrin and transferrin receptors in mouse enterocyte microvillous brush border membrane. *Gastroenterology* 1987;92:1504.
125. Levine DS, Surawicz CM, Saunders DR, Rubin CE. Electron microscopic comparison of human jejunum and ileum: Fasting and during fat absorption. *Gastroenterology* 1987;92:1504.
126. Levine DS, Reid BJ, Haggitt RC, Rubin CE, Rabinovitch PS. EM of Barrett's esophagus: Dysplasia and early carcinoma have aberrations of mucus synthesis that correlate with aneuploidy or increased G2/tetraploid fractions. *J Cell Biol* 1987;105:78a.
127. Levine DS. Solitary rectal ulcer syndrome: Are solitary rectal ulcer syndrome and "localized colitis cystica profunda" analogous syndromes caused by rectal prolapse? *Gastroenterol Digest* 1987;3:3-4.
128. Levine DS, Huebers HA, Rubin CE, Finch CA. Parenteral desferrioxamine blocks mucosal iron absorption in rodent and man. *Gastroenterology* 1988;94:A259.
129. Levine DS, Reid BJ, Haggitt RC, Rubin CE, Dean PJ, Rabinovitch PS. Distribution of aneuploidy and proliferative abnormalities in sporadic colon cancers and morphologically normal surrounding mucosa. *Gastroenterology* 1988;94:A259.

## PUBLISHED ABSTRACTS (continued)

Douglas S. Levine, MD, AGAF, FACC

130. Levine DS, Reid BJ, Haggitt RC, Rubin CE, Dean PJ, Rabinovitch PS. Frequency and distribution of aneuploid cell populations in chronic ulcerative colitis. *Gastroenterology* 1988;94:A260.
131. Mulholland MW, Melendez RL, Reid BJ, Levine DS, Rubin CE. Effects of cimetidine (Cim) and methscopolamine (MS) on stimulated acid secretion and esophageal acid exposure in patients with Barrett's esophagus. *Gastroenterology* 1988;94:A314.
132. Mulholland MW, Melendez RL, Reid BJ, Levine DS, Rubin CE. Stimulated gastric acid secretion in patients with reflux esophagitis. *Gastroenterology* 1988;94:A314.
133. Levine DS. Correlation of ultrastructural aberrations with dysplasia and flow cytometric abnormalities in Barrett's epithelium. *Gastroenterol Digest* 1989;8:17-18.
134. Reid BJ, Pope EW, Levine DS, Haggitt RC, Dean PJ, Blount PL, Rabinovitch PS. Proliferative abnormalities and histologic indicators of neoplastic risk in Barrett's esophagus. *Gastroenterology* 1990;98:A111.
135. Haggitt RC, Rubin CE, Levine DS, Dean PJ, Rabinovitch PS. Aneuploidy in ulcerative colitis biopsies that are histologically indefinite for dysplasia may predict future progression to definite dysplasia. *Gastroenterology* 1990;98:A173.
136. Fischer SH, Levine DS, Haggitt RC, Christie DL, Ochs HD. Immunoglobulin therapy for active and extensive idiopathic ulcerative colitis and Crohn's colitis. *Gastroenterology* 1990;98:A170.
137. Levine DS, Sanchez CA, Rabinovitch PS, Reid BJ. Deregulation of centriole number accompanies formation of a tetraploid intermediate during neoplastic progression in a transgenic mouse model of pancreatic cancer. *Gastroenterology* 1990;98:A225.
138. Levine DS, Reid BJ, Haggitt RC, Rubin CE, Dean PJ, Silverman BA, Rabinovitch PS. Flow cytometrically identified fields of abnormal proliferation surround some but not all colonic neoplasms. *Gastroenterology* 1990;98:A294.
139. Reid BJ, Blount PL, Rubin CE, Levine DS, Haggitt RC, Rabinovitch PS. Predictors of progression to malignancy in Barrett's esophagus: Histologic and flow cytometric followup of a cohort. *Gastroenterology* 1990;98:A305.
140. Levine DS, Reid BJ. Endoscopic biopsy technique for acquiring larger mucosal samples. *Gastrointest Endosc* 1990;36:210.
141. Levine DS, Haggitt RC, Blount PL, Rabinovitch PS, Rusch VW, Reid BJ. A systematic endoscopic biopsy protocol can differentiate high-grade dysplasia from early adenocarcinoma in Barrett's esophagus. *Gastroenterology* 1993;104:A420.
142. Baehr PH, Bouvier ME, Levine DS, Martin PJ, McDonald GB. Oral beclomethasone for intestinal graft-vs.-host disease. *Gastroenterology* 1993;104:A663.
143. Baehr PH, Bouvier ME, Levine DS, McDonald GB. Oral beclomethasone dipropionate for intestinal graft-versus-host disease. *Trends in Inflammatory Bowel Disease Therapy 1994. Poster Abstracts, Victoria Conference Center, April 6-9, 1994. Interfalk Canada Inc. & The Canadian Association of Gastroenterology Symposium, Victoria, British Columbia, Canada, 1994.*
144. Baehr PH, Bouvier ME, Stern J, Levine DS, McDonald GB. Oral beclomethasone for enteritis caused by graft-vs.-host disease. *Gastroenterology* 1994;106:A648.
145. Thomas Jr CW, Kimmey MB, Russell KJ, Wood DE, Austin-Seymour M, Bavisotto L, Griffin TW, Koh WJ, Laramore GE, Levine DS, Lilly MB, Marchioro TL, Murphy A, Pellegrini CA, Reid BJ, Shields AF, Thompson T. Phase II study of neo-adjuvant chemo-radiation for stage IIB-III adenocarcinoma of the esophagus and/or gastro-esophageal junction. *Radiology* 1994;193P(suppl):284.



## PUBLISHED ABSTRACTS (continued)

Douglas S. Levine, MD, AGAF, FACC

146. Levine DS, Patt LM, Koren MA. An open label study of PC1020 rectal solution in the treatment of distal inflammatory bowel disease. World Congresses of Gastroenterology, Abstracts II: Poster Presentations, Los Angeles Convention Center, October 2-7, 1994, Los Angeles, California. Academy Professional Information Services, Inc, New York, 1994:1771P.
147. Levine DS, Haggitt RC, Rabinovitch PS, Reid BJ. Complete regression of high-grade dysplasia, DNA content abnormalities, and Barrett's esophagus. *Gastroenterology* 1995;108:A496.
148. Levine DS, Baker MS, Flaherty MJ, Fenz Z, Ylvisaker TJ, Feld AD, Kristal AR. DNA aneuploidy in colorectal adenomas is associated with an increased risk of adenoma recurrence. *Gastroenterology* 1995;108:A496.
149. Levine DS, Reid BJ, Irvine S, GI Endoscopy Unit Staff. Safety of a systematic endoscopic biopsy protocol. *Gastroenterology* 1995;108:A497.
150. Levine DS, Patt LM, Koren MA, Joslin J. An open-label, pilot study of preztidie copper acetate (PCA) rectal solution in the treatment of distal inflammatory bowel disease. *Gastroenterology* 1995;108:A861.
151. Galipeau PC, Cowan DS, Sanchez CA, Barrett MT, Emond MJ, Levine DS, Rabinovitch PS, Reid BJ. 17p (p53) allelic losses, 4N (G2/tetraploid) populations, and progression to aneuploidy in Barrett's esophagus. *Gastroenterology* 1996;110:A515.
152. Levine DS, Haggitt RC, Irvine S, Reid BJ. Natural history of high-grade dysplasia in Barrett's esophagus. *Gastroenterology* 1996;110:A550.
153. Low DE, Levine DS, Dail DH, Kozarek RA. Histologic and anatomic changes in Barrett's esophagus following antireflux surgery. *Am J Gastroenterol* 1996;91:1892.
154. Martin RW, Reid BJ, Dattamajumdar AK, Myers J, Proctor A, Levine D. System for detecting pre-malignant esophageal tissue. *Ann Biomed Eng* 1996;24(suppl 1):S71.
155. Dattamajumdar AK, Levine DS, Emond MJ, Goldman BH, Reid BJ. Quantitative colorimetric analysis of esophageal squamo-columnar junction in patients with Barrett's esophagus. *Gastroenterology* 1997;112:A97.
156. Irvine EJ, Levine DS, Lashner BA, Thompson AK, Zhou Q. A short health related quality of life instrument (SIBDQ) for inflammatory bowel disease (IBD) in clinical practice. *Gastroenterology* 1997;112:A1003.
157. Levine DS, Hanauer SB, Patt LM, Koren MA, Branca AA, PCA Study Group. A placebo-controlled study of preztidie copper acetate retention enemas in the treatment of mild-to-moderate ulcerative colitis. *Gastroenterology* 1997;112:A1026.
158. Levine DS, Pruitt R, Riff D, Koval G, Sales D, Wruble L, Rex D, Salzberg B, Merrell D, Berry W, Torres E, Rubin A, Kogut D, Young D, Johnson LK. A multi-center, double-blind dose-response trial of Colazide (balsalazide disodium) and Asacol (mesalamine) for mild-moderately active ulcerative colitis. *Gastroenterology* 1997;112:A1026.
159. McDonald GB, Bouvier M, Stern JG, Gooley T, Farrand A, Levine DS. A randomized, double-blinded, placebo-controlled study of oral beclomethasone dipropionate for treatment of intestinal graft-vs-host disease. *Gastroenterology* 1997;112:A1037.
160. Parent J, Levine DS, Haggitt RC, Wood DE, Reid BJ, Kimmey MB. Accuracy of endoscopic ultrasound staging in patients with Barrett's esophagus and intramucosal carcinoma. *Gastrointest Endosc* 1997;45:AB76.
161. Parent J, Levine DS, Haggitt RC, Reid BJ, Kimmey MB. Role of endoscopic ultrasound in patients with Barrett's esophagus and high grade dysplasia. *Gastrointest Endosc* 1997;45:AB76.
162. Feagan BG, Fedorak RN, IL-10 IBD Cooperative Study Group. Recombinant interleukin-10 (rHuIL-10) in patients with active Crohn's disease. *Am J Gastroenterol* 1997;92:1675.

## PUBLISHED ABSTRACTS (continued)

Douglas S. Levine, MD, AGAF, FACC

163. Fedorak, RN, Gangl A, Elson CO, Gasche C, Rutgeerts P, D'Haens G, Schreiber S, Wild G, Hanauer SB, Sninsky CA, Wilson JHP, Tilg H, Isaacs K, Jacyna M, Colombel JF, Desreumaux P, van Deventer SJH, Wright JP, Irvine EJ, Levine DS, Tremaine WJ, Lashner BA, Warner AS, McDermott R, Mayer L, Koningsberger JC, van Gossum A, Befrits R, Deusch K, Targan S, Gibson P. Safety, tolerance and activity of multiple doses of subcutaneous recombinant human interleukin-10 (rHuIL-10) in patients with mild to moderate active Crohn's disease. *Gut* 1997;41:A16.
164. Moe G, Kristal A, Levine D. Associations of diet and nutritional status with cell proliferative fractions in Barrett's esophagus. *FASEB J* 1998;12(5):A876.
165. Levine DS, Carlsson R, Whipple J, Joelsson B. Manifestations of gastroesophageal reflux disease (GERD) are common in patients experiencing heartburn on at least two to four days per week. *Gastroenterology* 1998;114:A202.
166. Fedorak RN, Gangl A, Elson CO, Rutgeerts P, Schreiber S, Wild G, Hanauer S, van Deventer SJH, Grint P, IL-10 IBD Cooperative Study Group. Safety, tolerance and efficacy of multiple doses of subcutaneous interleukin-10 in mild to moderate active Crohn's disease. *Gastroenterology* 1998;114:A974.
167. Dattamajumdar AK, Blount PL, Goldman BH, Levine DS, Reid BJ, Martin RW. A colorimetric instrument for detecting patients with Barrett's esophagus in the population. *Gastroenterology* 1999;116:A144-A145.
168. Levine D, Hamelin B, Magner D, Hyg MS, Rogers P, Barrett R, Joelsson B. Correlation between patient demographics and heartburn severity with Los Angeles (LA) classification of erosive esophagitis. *Am J Gastroenterol* 1999;94:2591
169. Reid BJ, Blount PL, Feng Z, Levine DS. Optimizing endoscopic biopsy detection of early cancers in Barrett's high-grade dysplasia. *Am J Gastroenterol* 1999;94:2598.
170. Reid BJ, Levine DS, Longton G, Blount PL, Rabinovitch PS. Predictors of progression to cancer in Barrett's esophagus: baseline histology and flow cytometry identify low and high risk patient subsets. *Am J Gastroenterol* 1999;94:2598.
171. Crawley JA, Anderson KW, Joshua-Gotlib S, Levine DS. Are patients carrying the burden of managed care cost control measures in treating GERD? *Am J Gastroenterol* 1999;94:2750.
172. Crawley JA, Revicki DA, Zodet MW, Levine DS, Joelsson B. Complete resolution of heartburn symptoms and health-related quality of life in patients with gastroesophageal reflux disease. *Am J Gastroenterol* 1999;94:2751.
173. Genta RM, Magner DJ, D'Amico D, Levine DS. Safety of long-term treatment with a new PPI, esomeprazole, in GERD patients. *Gastroenterology* 2000;118:A16.
174. Reid BJ, Prevo LJ, Galipeau PC, Sanchez CA, Longton G, Levine DS, Blount PL, Rabinovitch PS. Predictors of progression in Barrett's esophagus: Baseline 17p (p53) loss of heterozygosity identifies a patient subset at increased risk for neoplastic progression. *Gastroenterology* 2001;120:A-78.
175. Zodet MW, Joshua-Gotlib S, Revicki D, Levine D, Crawley JA. Health-related quality of life improves with GERD symptom resolution: Treatment effects by baseline severity. *Gastroenterology* 2001;120:A-402.
176. Malone T, Kuczmanski M, Levine D, Gold B, Gunasekaran T. Omeprazole safely and effectively relieved symptoms of GERD in a pediatric population aged 2-16 years. *Ped Gastroenterol Nutr* 2001;33:423.
177. Kraynak RA, Kuczmanski M, Levine D, Whittington G, Antonson DL. Omeprazole treatment of GERD symptoms in infants. *J Ped Gastroenterol Nutr* 2001;33:424.
178. Pruitt R, Levine DS, Safdi M, Riff D, Hanson J, Wruble L, Koval G, Sales D, Bettenhausen D, Sykes S, Mangel A, Johnson LK. Balsalazide as alternative therapy in mesalamine dose-escalation for acute, mild to moderate ulcerative colitis. *Gastroenterology* 2002;122:A-499.

## PUBLISHED ABSTRACTS (continued)

Douglas S. Levine, MD, AGAF, FACC

179. Johnson DA, Traxler BM, Levine D. Is epigastric pain a predictor of erosive or nonerosive GERD? *Gastroenterology* 2003; 124:A-539.
180. Johnson DA, Lauritsen K, Junghard O, Levine D. Evaluation of symptoms is an unreliable predictor of relapse of erosive esophagitis in patients receiving maintenance PPI therapy. *Gastroenterology* 2003; 124:A-540.
181. Vakil NB, Katz PO, Traxler BM, Levine D. Resolution of epigastric pain accompanies resolution of heartburn in endoscopy-negative GERD. *Gastroenterology* 2003; 124:A-542.
182. Vakil NB, Lauritsen K, Junghard O, Levine D. Esomeprazole provides more effective maintenance therapy following healing of erosive esophagitis in patients with dysphagia at baseline compared with lansoprazole. *Gastroenterology* 2003; 124:A-542-543.
183. Johnson D, Hoyle P, Traxler B, Levine D. An evidence-based approach provides a quantitative assessment of the efficacy of esomeprazole for healing of erosive esophagitis based on disease severity. *Am J Gastroenterol* 2003; 98:S16.
184. Castell DO, Traxler BM, Levine D. Incidence of hiatus hernia and its effect on the treatment of patients with erosive esophagitis. *Am J Gastroenterol* 2003; 98:S17-S18.
185. Lauritsen K, Junghard O, Levine D. Esomeprazole compared with lansoprazole for maintaining healed erosive esophagitis in patients with hiatus hernia. *Am J Gastroenterol* 2003; 98:S18.
186. Johnson D, Lauritsen K, Hoyle P, Traxler B, Levine D. Esomeprazole as maintenance therapy in erosive esophagitis: A quantitative assessment of efficacy using an evidence-based approach. *Am J Gastroenterol* 2003; 98:S34.
187. Niemcryk SJ, Ke X, Joshua-Gotlib S, Levine D. Medical service use and expenditures in patients with gastroesophageal reflux disease: an analysis of data from the Medical Expenditure Survey, 1997-2000. *Gastroenterology* 2004; 126:A173.
188. Niemcryk SJ, Joshua-Gotlib S, Levine D. Outpatient experience of patients with GERD in the United States: an analysis of the 1998-2001 National Ambulatory Medical Care Survey. *Gastroenterology* 2004; 126:A173.
189. Spechler S, Sharma P, Traxler B, Levine D, Falk G. Effect of esomeprazole on intragastric and intraesophageal pH in patients with Barrett's esophagus. *Gastroenterology* 2004; 126:A180.
190. Goldstein JL, Johanson J, Hawkey CJ, Suchower L, Levine D. The comparative healing of gastric ulcers with esomeprazole versus ranitidine in patients taking either continuous COX-2 selective NSAIDs or nonselective NSAIDs. *Gastroenterology* 2004; 126:A610.
191. Triadafilopoulos G, Kaur B, Traxler B, Chu N, Levine D, Weston A. The effects of esomeprazole combined with aspirin or rofecoxib on steady state prostaglandin E2 production in patients with Barrett's esophagus. *Gastroenterology* 2004; 126:A617.
192. Sharpe LM, Li X, Cowan D, Reid BJ, Levine DS, Ayub K, Blount PL. Temporal change in Barrett's esophagus segment length (BESL) during prospective surveillance. *Gastrointestinal Endoscopy* 2004; 59: AB262.
193. Spechler S, Sharma P, Traxler B, Levine DS, Falk GW. Effect of esomeprazole on intraesophageal pH in patients with Barrett's esophagus. *Am J Gastroenterol* 2004; 99:S16.
194. Kahrilas P, Levine D, Röhss K, Åstrand M, Junghard O, Lind T. Relationship between healing of erosive esophagitis and percent time with intragastric pH>4. *Am J Gastroenterol* 2008; 103:S17-S18.
195. Johnson DA, Levine D, Röhss K, Åstrand M, Junghard O, Lind T. Relationship between maintenance of healed erosive esophagitis and percent time with intragastric pH>4. *Am J Gastroenterol* 2008; 103: S18-S19.

**PUBLISHED ABSTRACTS** (continued)

Douglas S. Levine, MD, AGAF, FACC

196. Katz PO, Levine D, Röhss K, Junghard O, Åstrand M, Lind T. A model of healing of LA Grade C And D erosive esophagitis: is there a threshold percent time pH>4 for maximal healing? *Am J Gastroenterol* 2008; 103:S19.

197. Röhss K, Wilder-Smith C, Sagar M, Bokelund-Singh S, Nagy P, Levine D, Lind T. Can acid control be improved with a modified-release formulation of a proton pump inhibitor? *Am J Gastroenterol* 2008; 103:S19.

198. Röhss K, Wilder-Smith C, Sagar M, Bokelund-Singh S, Nagy P, Levine D, Lind T. Dose and timing effects of esomeprazole administration on 24-h intragastric pH control. *Am J Gastroenterol* 2008; 103:S24.

199. Alemayehu B, Ke X, Levine DS, Crawley JA. Impact on resource utilization and costs when formulary exclusion triggers switching of proton pump inhibitor (PPI) therapy. *Gastroenterology* 2010; 138:S-482.

200. Levine D, Chey WD, Lembo AJ, Shao JZ, Lavins BJ, Schneier HA, Johnston JM. Efficacy and safety of linaclotide administered orally once-daily for 26 weeks in patients with irritable bowel syndrome with constipation (IBS-C). *Neurogastroenterology and Motility* 2011; .23:38.

## ACKNOWLEDGED CONTRIBUTIONS

Douglas S. Levine, MD, AGAF, FACG

1. In: Faust RA, Albers JJ. Regulated vectorial secretion of cholesteryl ester transfer protein (LTP-1) by the CaCo-2 model of human enterocyte epithelium. *J Biol Chem* 1988;263:8786-8789.
2. In: Engel LD, Pasquinelli KL, Leone SA, Moncla BJ, Nielson KD, Rabinovitch PS. Abnormal lymphocyte profiles and leukotriene B4 status in a patient with Crohn's disease and severe periodontitis. *J Periodontol* 1988;59:841-847.
3. In: Silverstein FE, Tytgat GNJ. Atlas of gastrointestinal endoscopy, 2<sup>nd</sup> edition. Gower, New York, 1991.
4. In: Blount PL, Meltzer SJ, Yin J, Huang Y, Krasna MJ, Reid BJ. Clonal ordering of 17p and 5q allelic losses in Barrett dysplasia and adenocarcinoma. *Proc Natl Acad Sci (USA)* 1993;90:3221-3225.
5. In: Silverstein FE, Tytgat GNJ. Atlas of gastrointestinal endoscopy, 3<sup>rd</sup> edition. Mosby-Wolf, London, 1996.
6. In: Palanca-Wessels MC, Barrett MT, Galipeau PC, Rohrer KL, Reid BJ, Rabinovitch PS. Genetic analysis of long-term Barrett's esophagus epithelial cultures exhibiting cytogenetic and ploidy abnormalities. *Gastroenterology* 1998;114:295-304.
7. In: Barrett MT, Sanchez CA, Prevo LJ, Wong DJ, Galipeau PC, Paulson TG, Rabinovitch PS, Reid BJ. Evolution of neoplastic cell lineages in Barrett oesophagus. *Nature Genetics* 1999;22:106-109.
8. In: Doshi JA, Cai Q, Buono JL, Spalding WM, Sarocco P, Tan , Stephenson JJ, Carson RT. Economic burden of irritable bowel syndrome with constipation: a retrospective analysis of health care costs in a commercially insured population. *Journal of Managed Care & Specialty Pharmacy* 2014;20:382-390.
9. In: Lieberman DA, Williams L, Holub JL, Morris CD, Logan JR, Eisen GM, Carney P. Colonoscopy utilization and outcomes 2000 to 2011. *Gastrointestinal Endoscopy* 2014; .doi.org/10.1016/j.gie.2014.01.014

## REQUESTS FOR COPYRIGHTED MATERIALS & PUBLICATION SYNOPSES

Douglas S. Levine, MD, AGAF, FACC

1. In: Krey MJ. Excessive mucosal collagen in ulcer syndrome: Rectal biopsy finding excludes IBD. *Gastroenterology & Endoscopy News*, May, 1989 {cover article}, McMahon Medical News, New York. [Figure 1 from: Levine DS, Surawicz CM, Ajer TN, Dean PJ, Rubin CE. Diffuse excess mucosal collagen in rectal biopsies facilitates the differential diagnosis of solitary rectal ulcer syndrome from other inflammatory bowel diseases. *Dig Dis Sci* 1988;33:1345-1352.]
2. In: Lashner BA. Cancer in inflammatory bowel disease. *Curr Opin Gastroenterol* 1992;8:683-687. [Figure 6 from: Levine DS, Rabinovitch PS, Haggitt RC, Blount PL, Dean PJ, Rubin CE, Reid BJ. Distribution of aneuploid cell populations in ulcerative colitis with dysplasia or cancer. *Gastroenterology* 1991;101:1198-1210.]
3. In: Earnest DL. Other diseases of the colon and rectum. In: Sleisenger MH, Fordtran JS, eds. *Gastrointestinal disease: Pathophysiology, diagnosis, management*, 5<sup>th</sup> edition. Saunders, Philadelphia, 1993:1537-1570. [Figures 2 and 3 from Levine DS, Reid BJ. Endoscopic biopsy technique for acquiring larger mucosal samples. *Gastrointest Endosc* 1991;37:332-337.]
4. In: Cohen MH. From the literature. *Practical Gastroenterol* 1993;17(9):2. [Synopsis of: Levine DS, Haggitt RC, Blount PL, Rabinovitch PS, Rusch VW, Reid BJ. An endoscopic biopsy protocol can differentiate high-grade dysplasia from early adenocarcinoma in Barrett's esophagus. *Gastroenterology* 1993;105:40-50.]
5. In: Rotterdam H, Sheahan DG, Sommers SC, Green PHR. *Biopsy diagnosis of the digestive tract*, 2<sup>nd</sup> edition. Raven, New York, 1993. [Figure 1 from: Levine DS, Rubin CE, Reid BJ, Haggitt RC. The specialized metaplastic columnar epithelium in Barrett's esophagus: A comparative transmission electron microscopic study. *Lab Invest* 1989;60:418-432.]
6. In: Surawicz CM. Basic principles. In: Raskin JB, Nord HH, eds. *Colonoscopy*. Igaku-Shoin, New York, 1995. [Figures 22 and 25 from: Levine DS, Haggitt RC. Colon. In: Sternberg SS, ed. *Histology for pathologists*. Raven, New York, 1991:573-591.]
7. In: Nelson BJ. Managing Barrett's esophagus: Debate continues on prompt surgery for high-grade Barrett's dysplasia; Surgical resection to rule out cancer in Barrett's esophagus called unwarranted. *Gastroenterology & Endoscopy News*, March, 1996 {cover article}, McMahon Medical News, New York. [Figure from: Levine DS. Barrett's esophagus. *Sci Am Sci Med* 1994;1(5):16-25.]
8. In: Alexander D. Patients who experience GER four days per week may be candidates for PPI therapy. *Gastroenterology & Endoscopy News*, August, 1998, McMahon Publishing Group, New York. [Data from: Levine DS, Carlsson R, Whipple J, Joelsson B. Manifestations of gastroesophageal reflux disease (GERD) are common in patients experiencing heartburn on at least two to four days per week. *Gastroenterology* 1998;114:A202.]

## INVITED RESEARCH PRESENTATIONS: INTERNATIONAL & NATIONAL

Douglas S. Levine, MD, AGAF, FACG

1. Levine DS, Rubin CE. Topical beclomethasone dipropionate enemas improve distal ulcerative colitis and idiopathic proctitis without systemic toxicity. (Poster Session, Annual Meeting of the American Gastroenterological Association, New York, New York, May, 1985.)
2. Silverstein FE, Saunders DR, Chapman RW, Levine DS, Kimmey MB, Reid BJ. Cimetidine mucosal protection: A dose response study. (Poster Session, Annual Meeting of the American Gastroenterological Association, New York, New York, May, 1985.)
3. Levine DS, Surawicz CM, Ajer TN, Rubin CE. Demonstration of mucosal fibrosis differentiates solitary rectal ulcer syndrome from idiopathic inflammatory bowel disease. (Platform Session, Annual Meeting of the American Federation for Clinical Research, Western Section Gastroenterology Subspecialty, Carmel, California, February, 1986.)
4. Levine DS, Rubin CE. Electron microscopic evidence for the gastric origin of Barrett's metaplasia and dysplasia. (Poster Session, Annual Meeting of the American Gastroenterological Association, San Francisco, California, May, 1986.)
5. Levine DS, Ainardi V, Raisys V, Rubin CE. Selective delivery of orally administered beclomethasone dipropionate (BDP) to the terminal ileum and right colon. (Poster Session, Annual Meeting of the American Gastroenterological Association, San Francisco, California, May, 1986.)
6. Levine DS, Reid BJ, Haggitt RC, Rubin CE, Rabinovitch PS. EM of Barrett's esophagus: dysplasia and early carcinoma have aberrations of mucus synthesis that correlate with aneuploidy or increased G2/tetraploid fractions. (Poster Session, Annual Meeting of the American Society for Cell Biology, St Louis, Missouri, November, 1987.)
7. Levine DS, Rubin CE. What is the role of colorectal biopsy in the diagnosis and management of patients with other inflammatory disorders of the colon? (Platform Session, Gastrointestinal Pathology Society Symposium: "Colorectal Biopsy in Inflammatory Disorders of the Colon," Annual Meeting of the American Gastroenterological Association, Chicago, Illinois, May, 1987.)
8. Levine DS. Ultrastructural insights into Barrett's esophagus. (Platform Session, General Motors Cancer Research Foundation, Kettering Prize Conference: "Premalignant Lesions of the Esophagus and Colon," University of Alabama School of Medicine, Birmingham, Alabama, April, 1988.)
9. Levine DS, Huebers HA, Rubin CE, Finch CA. Parenteral desferrioxamine blocks mucosal iron absorption in rodent and man. (Platform Session, Research Forum, Annual Meeting of the American Gastroenterological Association, New Orleans, Louisiana, May, 1988.)
10. Mulholland MW, Melendez RL, Reid BJ, Levine DS, Rubin CE. Effects of cimetidine (Cim) and methscopolamine (MS) on stimulated acid secretion and esophageal acid exposure in patients with Barrett's esophagus. (Poster Session, Annual Meeting of the American Gastroenterological Association, New Orleans, Louisiana, May, 1988.)
11. Mulholland MW, Melendez RL, Reid BJ, Levine DS, Rubin CE. Stimulated gastric acid secretion in patients with reflux esophagitis. (Platform Session, Research Forum, Annual Meeting of the American Gastroenterological Association, New Orleans, Louisiana, May, 1988.)
12. Levine DS, Reid BJ, Haggitt RC, Rubin CE, Dean PJ, Rabinovitch PS. Distribution of aneuploidy and proliferative abnormalities in sporadic colon cancers and morphologically normal surrounding mucosa. (Platform Session, Research Forum, Annual Meeting of the American Gastroenterological Association, New Orleans, Louisiana, May, 1988.)
13. Levine DS, Reid BJ, Haggitt RC, Rubin CE, Dean PJ, Rabinovitch PS. Frequency and distribution of aneuploid cell populations in chronic ulcerative colitis. (Platform Session, Research Forum, Annual Meeting of the American Gastroenterological Association, New Orleans, Louisiana, May, 1988.)

**INVITED RESEARCH PRESENTATIONS: INTERNATIONAL & NATIONAL (continued)**

Douglas S. Levine, MD, AGAF, FACG

14. Rabinovitch PS, Burmer GB, Haggitt RC, Levine DS, Rubin CE, Reid BJ. Flow cytometric changes that precede cancer: Premalignant gastrointestinal disease. (Platform Session, Annual Meeting of the International Society for Optical Engineering, Los Angeles, California, January, 1989.)
15. Levine DS. Flow cytometry: Overview and changes in ulcerative colitis. (Workshop Lecture, "Dysplasia and Cancer in Colitis," Crohn's & Colitis Foundation of America, National Institutes of Health, and Rebecca Meyerhoff Philanthropic Fund Symposium, Baltimore, Maryland, June, 1989.)
16. Reid BJ, Pope EW, Levine DS, Haggitt RC, Dean PJ, Blount PL, Rabinovitch PS. Proliferative abnormalities and histologic indicators of neoplastic risk in Barrett's esophagus. (Platform Session, Research Forum, Annual Meeting of the American Gastroenterological Association, San Antonio, Texas, May, 1990.)
17. Haggitt RC, Rubin CE, Levine DS, Dean PJ, Rabinovitch PS. Aneuploidy in ulcerative colitis biopsies that are histologically indefinite for dysplasia may predict future progression to definite dysplasia. (Platform Session, Research Forum, Annual Meeting of the American Gastroenterological Association, San Antonio, Texas, May, 1990.)
18. Fischer SH, Levine DS, Haggitt RC, Christie DL, Ochs HD. Immunoglobulin therapy for active and extensive idiopathic ulcerative and Crohn's colitis. (Poster Session, Annual Meeting of the American Gastroenterological Association, San Antonio, Texas, May, 1990.)
19. Levine DS, Sanchez CA, Rabinovitch PS, Reid BJ. Deregulation of centriole number accompanies formation of a tetraploid intermediate during neoplastic progression in a transgenic mouse model of pancreatic cancer. (Platform Session, Research Forum, Annual Meeting of the American Gastroenterological Association, San Antonio, Texas, May, 1990.)
20. Levine DS, Reid BJ, Haggitt RC, Rubin CE, Dean PJ, Silverman BA, Rabinovitch PS. Flow cytometrically identified fields of abnormal proliferation surround some but not all colonic neoplasms. (Poster Session, Annual Meeting of the American Gastroenterological Association, San Antonio, Texas, May, 1990.)
21. Reid BJ, Blount PL, Rubin CE, Levine DS, Haggitt RC, Rabinovitch PS. Predictors of progression to malignancy in Barrett's esophagus: Histologic and flow cytometric followup of a cohort. (Platform Session, Research Forum, Annual Meeting of the American Gastroenterological Association, San Antonio, Texas, May, 1990.)
22. Levine DS, Reid BJ. Endoscopic biopsy technique for acquiring larger mucosal samples. (Poster Session, Annual Meeting of the American Gastroenterological Association, San Antonio, Texas, May, 1990.)
23. Ochs HD, Fischer SH, Christie DL, Haggitt RC, Levine DS. Intravenous immunoglobulin in idiopathic inflammatory bowel disease: Results of an open-label therapeutic trial. (Platform Session, "Conference on Immunotherapy With Intravenous Immunoglobulin," Interlaken, Switzerland, May, 1990.)
24. Levine DS. Endoscopic surveillance of gastrointestinal neoplastic disease. (Platform Session, Continuing Medical Education Program, "Inflammatory Bowel Disease," T<sup>2</sup> Medical Inc and Sandoz Corporation, Captiva, Florida, March, 1991.)
25. Levine DS. Case presentations: Experimental therapy for idiopathic inflammatory bowel diseases. (Platform Session, Continuing Medical Education Program, "Inflammatory Bowel Disease," T<sup>2</sup> Medical Inc and Sandoz Corporation, Captiva, Florida, March, 1991.)
26. Levine DS. Immunoglobulin therapy in inflammatory bowel disease. (Platform Session, Falk Symposium, "Trends in Inflammatory Bowel Disease Therapy 1992," Quebec City, Quebec, Canada, May, 1992.)
27. Levine DS. What benefits do anti-reflux surgery or acid suppression have for Barrett's esophagus? (Gastroesophageal Reflux Disease Workshop, "Acid-Related Disorders: Clinical Science and Implications for Management," Boston, Massachusetts, May, 1993.)



**INVITED RESEARCH PRESENTATIONS: INTERNATIONAL & NATIONAL (continued)**

Douglas S. Levine, MD, AGAF, FACG

28. Baehr PH, Bouvier ME, Levine DS, Martin PJ, McDonald GB. Oral beclomethasone for intestinal graft-vs-host disease. (Platform Session, Research Forum, Annual Meeting of the American Gastroenterological Association, Boston, Massachusetts, May, 1993.)
29. Baehr PH, Bouvier ME, Levine DS, Martin PJ, McDonald GB. Oral beclomethasone for intestinal graft-vs-host disease. (Poster Session, Annual Meeting of the American Gastroenterological Association, Boston, Massachusetts, May, 1993.)
30. Levine DS, Haggitt RC, Blount PL, Rabinovitch PS, Rusch VW, Reid BJ. A systematic endoscopic biopsy protocol can differentiate high-grade dysplasia from early adenocarcinoma in Barrett's esophagus. (Poster Session, Annual Meeting of the American Gastroenterological Association, Boston, Massachusetts, May, 1993.)
31. Levine DS. Endoscopic biopsy surveillance technique in Barrett's esophagus. (Continuing Medical Education Video Presentation, MNN: Medical News Network, Whittle Productions, New York, New York, January, 1994.)
32. Levine DS. Barrett's esophagus: Management and surveillance strategies. (Working Party Review of Specialist Topics, "Point and Counterpoint in Digestive Diseases," St Petersburg, Florida, March, 1994.)
33. Baehr PH, Bouvier ME, Levine DS, McDonald GB. Oral beclomethasone dipropionate for intestinal graft-versus-host disease. (Poster Session, Interfalk Canada Inc and the Canadian Association of Gastroenterology, "Trends in Inflammatory Bowel Disease Therapy 1994," Victoria, British Columbia, Canada, April, 1994.)
34. Baehr PH, Bouvier ME, Stern J, Levine DS, McDonald GB. Oral beclomethasone for enteritis caused by graft-vs-host disease. (Poster Session, Annual Meeting of the American Gastroenterological Association, New Orleans, Louisiana, May, 1994.)
35. Levine DS, Patt LM, Koren MA. An open label study of PC1020 rectal solution in the treatment of distal inflammatory bowel disease. (Poster Session, World Congresses of Gastroenterology, Los Angeles, California, October, 1994.)
36. Levine DS. Barrett's esophagus. (Continuing Medical Education Video Presentation, The Network for Continuing Medical Education, Seacaucus, New Jersey, November, 1994.)
37. Thomas Jr CR, Kimmey MB, Russell KJ, Wood DE, Austin-Seymour M, Bavisotto L, Griffin TW, Koh WJ, Laramore GE, Levine DS, Lilly MB, Marchioro TL, Murphy A, Pellegrini CA, Reid BJ, Shields AF, Thompson T. Phase II study of neo-adjuvant chem-radiation for stage IIB-III adenocarcinoma of the esophagus and/or gastro-esophageal junction. (Platform Session, 80<sup>th</sup> Scientific Assembly and Annual Meeting of the Radiological Society of North America, Chicago, Illinois, November, 1994.)
38. Levine DS. Prospective endoscopic biopsy surveillance is an option in patients with high-grade dysplasia in Barrett's esophagus. (Combined Symposium, "Controversies in the Management of Esophageal Cancer," Annual Meetings of the American Gastroenterological Association, the American Society for Gastrointestinal Endoscopy, and the Society for Surgery of the Alimentary Tract, San Diego, California, May, 1995.)
39. Levine DS, Patt LM, Koren MA, Joslin J. An open-label, pilot study of preztatide copper acetate (PCA) rectal solution in the treatment of distal inflammatory bowel disease. (Poster Session, Annual Meeting of the American Gastroenterological Association, San Diego, California, May, 1995.)
40. Levine DS, Haggitt RC, Rabinovitch PS, Reid BJ. Complete regression of high-grade dysplasia, DNA content abnormalities, and Barrett's esophagus. (Poster Session, Annual Meeting of the American Gastroenterological Association, San Diego, California, May, 1995.)
41. Levine DS, Reid BJ, Irvine S, and GI Endoscopy Unit Staff. Safety of a systematic endoscopic biopsy protocol in Barrett's esophagus. (Poster Session, Annual Meeting of the American Gastroenterological Association, San Diego, California, May, 1995.)

## INVITED RESEARCH PRESENTATIONS: INTERNATIONAL & NATIONAL (continued)

Douglas S. Levine, MD, AGAF, FACG

42. Levine DS, Baker MS, Flaherty MJ, Feng Z, Ylvisaker TJ, Feld AD, Kristal AR. DNA aneuploidy in colorectal adenomas is associated with an increased risk of adenoma recurrence. (Platform Session, Research Forum, Annual Meeting of the American Gastroenterological Association, San Diego, California, May, 1995.)
43. Levine DS. Barrett's esophagus. (Platform Session, "Heartburn: The Who, What, Why & How," Annual Meeting of the American College of Gastroenterology, New York, New York, October, 1995.)
44. Levine DS, Haggitt RC, Emond MJ, Rabinovitch PS, Irvine S, Reid BJ. Natural history of high-grade dysplasia in Barrett's esophagus. (Platform Session, Topic Forum, Annual Meeting of the American Gastroenterological Association, San Francisco, California, May, 1996.)
45. Galipeau PC, Cowan DS, Sanchez CA, Barrett MT, Emond MJ, Levine DS, Rabinovitch PS, Reid BJ. 17p (p53) allelic losses, 4N (G2/tetraploid) populations, and progression to aneuploidy in Barrett's esophagus. (Poster Session, Annual Meeting of the American Gastroenterological Association, San Francisco, California, May, 1996.)
46. Levine DS. Barrett's esophagus. (Platform Session, Program for Gastrointestinal Nurses, Annual Meeting of the American Gastroenterological Association, San Francisco, California, May, 1996.)
47. Levine DS. Barrett's esophagus: New definitions and new concepts in screening. (Continuing Medical Education Lecture, Digestive Disease Week, San Francisco, California, May, 1996.)
48. Sampliner RE, Levine DS. Barrett's esophagus: Diagnosis and treatment. (Co-chair, Topic Forum, Annual Meeting of the American Society for Gastrointestinal Endoscopy, San Francisco, California, May, 1996.)
49. Levine DS. Barrett's esophagus. (Chairman, Platform Session, Focused Update Session, Annual Meeting of the American Gastroenterological Association, San Francisco, California, May, 1996.)
50. Low DE, Levine DS, Dail D, Kozarek R. Histologic and anatomic changes in Barrett's esophagus following antireflux surgery. (Platform Session, Annual Meeting of the American College of Gastroenterology, Seattle, Washington, October, 1996.)
51. Levine DS, Pruitt R, Riff D, Koval G, Sales D, Wruble L, Rex D, Salzberg B, Merrell D, Berry W, Torres E, Rubin A, Kogut D, Young D, Johnson LK. A multi-center, double-blind dose-response trial of Colazide (balsalazide disodium) and Asacol (mesalamine) for mild-moderately active ulcerative colitis. (Poster Session, Annual Meeting of the American Gastroenterological Association, Washington, DC, May, 1997.)
52. Levine DS, Hanauer SB, Patt LM, Koren MA, Branca AA, and the PCA Study Group. A placebo-controlled study of prezatide copper acetate retention enemas in the treatment of mild-to-moderate ulcerative colitis. (Platform Session, Research Forum, Annual Meeting of the American Gastroenterological Association, Washington, DC, May, 1997.)
53. McDonald GB, Bouvier M, Stern JG, Gooley T, Farrand A, Levine DS. A randomized, double-blinded, placebo-controlled study of oral beclomethasone dipropionate for treatment of intestinal graft-vs-host disease. (Platform Session, Research Forum, Annual Meeting of the American Gastroenterological Association, Washington, DC, May, 1997.)
54. Dattamajumdar AK, Levine DS, Emond MJ, Goldman BH, Reid BJ. Quantitative colorimetric analysis of esophageal squamo-columnar junction in patients with Barrett's esophagus. (Poster Session, Annual Meeting of the American Gastroenterological Association, Washington, DC, May, 1997.)
55. Irvine EJ, Levine DS, Lashner BA, Thompson AK, Zhou Q. A short health related quality of life instrument for inflammatory bowel disease in clinical practice. (Presidents' Plenary Poster Session, Annual Meeting of the American Gastroenterological Association, Washington, DC, May, 1997.)

**INVITED RESEARCH PRESENTATIONS: INTERNATIONAL & NATIONAL (continued)**

Douglas S. Levine, MD, AGAF, FACC

56. Parent J, Levine DS, Haggitt RC, Reid BJ, Kimmey MB. Role of endoscopic ultrasound in patients with Barrett's esophagus and high grade dysplasia. (Poster Session, Annual Meeting of the American Gastroenterological Association, Washington, DC, May, 1997.)
57. Parent J, Levine DS, Haggitt RC, Wood DE, Reid BJ, Kimmey MB. Accuracy of endoscopic ultrasound staging in patients with Barrett's esophagus and intramucosal carcinoma. Annual Meeting of the American Gastroenterological Association, Washington, DC, May, 1997.)
58. Levine DS. State of the Art Lecture: Barrett's esophagus - Controversies in patient management. (Platform Session, Annual Meeting of the American Gastroenterological Association, Washington, DC, May, 1997.)
59. Katz PO, Bozyski EM, Castell DO, Fendrick AM, Hill C, Johanson JF, Johnson DA, Katzka D, Levine D, Monahan T, Munoz SJ, Neil G. Clinical vignettes and case series on GI disease. (Program Faculty, American College of Gastroenterology National Fellows Forum, Colorado Springs, Colorado, August, 1997.)
60. Levine DS. Clinical management of Barrett's esophagus. (Platform Session & Panel Discussion on Barrett's Esophagus, Advisory Council for Cardiothoracic Surgery, 83<sup>rd</sup> Clinical Congress of the American College of Surgeons, Chicago, Illinois, October, 1997.)
61. Levine DS. New research data on GERD and therapy with Prilosec. (Lecture to Sales Force, Astra Merck All Company and Annual Meeting, Atlanta, Georgia, February, 1998.)
62. Falk GW, Bacon BR, Camilleri M, Chang E, Fleischer DE, Gores GJ, Kaplan L, Levine DS, Pasricha PJ, VanDam J, Wilcox CM. Young Investigators' Conference in Digestive Diseases. (Program Faculty, American Society for Gastrointestinal Endoscopy, American Gastroenterological Association, and American Association for the Study of Liver Diseases, Santa Monica, California, April, 1998.)
63. Levine DS, Carlsson R, Whipple J, Joelsson B. Manifestations of gastroesophageal reflux disease (GERD) are common in patients experiencing heartburn on at least two to four days per week. (Poster Session, Annual Meeting of the American Gastroenterological Association, Washington, DC, May, 1998.)
64. Fedorak RN, Gangl A, Elson CO, Rutgeerts P, Schreiber S, Wild G, Hanauer S, van Deventer SJH, Grint P, IL-10 IBD Cooperative Study Group. Safety, tolerance and efficacy of multiple doses of subcutaneous interleukin-10 in mild to moderate active Crohn's disease. (Poster Session, Annual Meeting of the American Gastroenterological Association, Washington, DC, May, 1998.)
65. Katz PO, Anderson WA, Braden LL, Fendrick AM, Fennerty MB, Johnson DA, Keeffe EB, Levine DS, Metz DC, Peterson WL, Rex DK. Clinical vignettes and case series on GI disease. (Program Faculty, American College of Gastroenterology National Fellows Forum, San Diego, California, August, 1998.)
66. Levine DS. Surveillance for dysplasia. (Columnar Lined [Barrett's] Esophagus Conference, National Institute of Diabetes and Digestive and Kidney Diseases, National Institutes of Health, Veterans Health Administration, and Veterans New England Health Care System, Boston, Massachusetts, September, 1998.)
67. Dent J, Richter JE, Kahrilas PJ, Fennerty MB, Barrett R, Brothers L, Levine D, Maslowski R, Romankiewicz J (Planning Committee, Astra Pharmaceuticals Gastroenterology Advisory Summit Meeting, Montreaux, Switzerland, December, 1998).
68. Dattamajumdar AK, Blount PL, Goldman BH, Levine DS, Reid BJ, Martin RW. A colorimetric instrument for detecting patients with Barrett's esophagus in the population. (Poster Session, Annual Meeting of the American Gastroenterological Association, Orlando, Florida, May, 1999.)

## INVITED RESEARCH PRESENTATIONS: INTERNATIONAL & NATIONAL (continued)

Douglas S. Levine, MD, AGAF, FACC

69. Levine D, Hamelin B, Magner D, Hyg MS, Rogers P, Barrett R, Joelsson B. Correlation between patient demographics and heartburn severity with Los Angeles (LA) classification of erosive esophagitis. (Poster Session, 64<sup>th</sup> Annual Scientific Meeting of the American College of Gastroenterology, Phoenix, Arizona, October, 1999.)
70. Levine DS, Reid BJ, Blount PL, Feng Z. Optimizing endoscopic biopsy detection of early cancers in Barrett's high-grade dysplasia. (Platform Session, 64<sup>th</sup> Annual Scientific Meeting of the American College of Gastroenterology, Phoenix, Arizona, October, 1999.)
71. Reid BJ, Levine DS, Longton G, Blount PL, Rabinovitch PS. Predictors of progression to cancer in Barrett's esophagus: baseline histology and flow cytometry identify low and high risk patient subsets. (Presidential Plenary Session, 64<sup>th</sup> Annual Scientific Meeting of the American College of Gastroenterology, Phoenix, Arizona, October, 1999.)
72. Crawley JA, Anderson KW, Joshua-Gotlib S, Levine DS. Are patients carrying the burden of managed care cost control measures in treating GERD? (Poster Session, 64<sup>th</sup> Annual Scientific Meeting of the American College of Gastroenterology, Phoenix, Arizona, October, 1999.)
73. Crawley JA, Revicki DA, Zodet MW, Levine DS, Joelsson B. Complete resolution of heartburn symptoms and health-related quality of life in patients with gastroesophageal reflux disease. (Poster Session, 64<sup>th</sup> Annual Scientific Meeting of the American College of Gastroenterology, Phoenix, Arizona, October, 1999.)
74. Genta RM, Magner DJ, D'Amico D, Levine DS. Safety of long-term treatment with a new PPI, esomeprazole, in GERD patients. (Poster Session, Annual Meeting of the American Gastroenterological Association, San Diego, California, May, 2000.)
75. Levine DS. Ethics of clinical trials: Clinical trials – academic and industry viewpoints. (Committee Sponsored Symposium, Annual meeting of the American Gastroenterological Association, San Diego, California, May, 2000.)
76. Reid BJ, Prevo LJ, Galipeau PC, Sanchez CA, Longton G, Levine DS, Blount PL, Rabinovitch PS. Predictors of progression in Barrett's esophagus: Baseline 17p (p53) loss of heterozygosity identifies a patient subset at increased risk for neoplastic progression. (Platform Session, Annual Meeting of the American Gastroenterological Association, Atlanta, Georgia, May, 2001.)
77. Zodet MW, Joshua-Gotlib S, Revicki D, Levine D, Crawley JA. Health-related quality of life improves with GERD symptom resolution: Treatment effects by baseline severity. (Poster Session, Annual Meeting of the American Gastroenterological Association, Atlanta, Georgia, May, 2001.)
78. Kraynak RA, Kuczanski M, Levine D, Whittington G, Antonson DL. Omeprazole for the treatment of clinically diagnosed GERD in pediatric patients. (Poster Session, Annual Meeting of the North American Society for Pediatric Gastroenterology and Nutrition, Orlando, Florida, October, 2001.)
79. Malone TL, Kuczanski M, Levine D, Gold B, Gunasekaran T. Omeprazole safely and effectively relieved symptoms of GERD in a pediatric population aged 2-16 years. (Poster Session, Annual Meeting of the North American Society for Pediatric Gastroenterology and Nutrition, Orlando, Florida, October, 2001.)
80. Vakil NB, Lauritsen K, Junghard O, Levine D. Esomeprazole provides more effective maintenance therapy following healing of erosive esophagitis in patients with dysphagia at baseline compared with lansoprazole. (Poster Session, Annual Meeting of the American Gastroenterological Association, Orlando, Florida, May, 2003.)
81. Vakil NB, Katz PO, Traxler BM, Levine D. Resolution of epigastric pain accompanies resolution of heartburn in endoscopy-negative GERD. (Poster Session, Annual Meeting of the American Gastroenterological Association, Orlando, Florida, May, 2003.)

**INVITED RESEARCH PRESENTATIONS: INTERNATIONAL & NATIONAL (continued)**

Douglas S. Levine, MD, AGAF, FACC

82. Johnson DA, Lauritsen K, Junghard O, Levine D. Evaluation of symptoms is an unreliable predictor of relapse of erosive esophagitis in patients receiving maintenance PPI therapy. (Poster Session, Annual Meeting of the American Gastroenterological Association, Orlando, Florida, May, 2003.)
83. Johnson DA, Traxler BM, Levine D. Is epigastric pain a predictor of erosive or nonerosive GERD? (Poster Session, Annual Meeting of the American Gastroenterological Association, Orlando, Florida, May, 2003.)
84. Johnson D, Hoyle P, Traxler B, Levine D, Lauritsen K. Esomeprazole as maintenance therapy in erosive esophagitis: A quantitative assessment of efficacy using an evidence-based approach. (Poster Session, 68<sup>th</sup> Annual Meeting of the American College of Gastroenterology, Baltimore, Maryland, October, 2003.)
85. Castell DO, Traxler BM, Levine D. Incidence of hiatus hernia and its effect on the treatment of patients with erosive esophagitis. (Poster Session, 68<sup>th</sup> Annual Meeting of the American College of Gastroenterology, Baltimore, Maryland, October, 2003.)
86. Johnson D, Hoyle P, Traxler B, Levine D. An evidence-based approach provides a quantitative assessment of the efficacy of esomeprazole for healing of erosive esophagitis based on disease severity. (Poster Session, 68<sup>th</sup> Annual Meeting of the American College of Gastroenterology, Baltimore, Maryland, October, 2003.)
87. Spechler S, Sharma P, Traxler B, Levine D, Falk G. Effect of esomeprazole on intragastric and intraesophageal pH in patients with Barrett's esophagus. (Poster Session, Annual Meeting of the American Gastroenterological Association, New Orleans, Louisiana, May, 2004.)
88. Triadafilopoulos G, Kaur B, Traxler B, Chu N, Levine D, Weston A. The effects of esomeprazole combined with aspirin or rofecoxib on steady state prostaglandin E2 production in patients with Barrett's esophagus. . (Poster Session, Annual Meeting of the American Gastroenterological Association, New Orleans, Louisiana, May, 2004.)
89. Goldstein JL, Johanson J, Hawkey CJ, Suchower L, Levine D. The comparative healing of gastric ulcers with esomeprazole versus ranitidine in patients taking either continuous COX-2 selective NSAIDs or nonselective NSAIDs. (Poster Session, Annual Meeting of the American Gastroenterological Association, New Orleans, Louisiana, May, 2004.)
90. Niemcryn SJ, Ke X, Joshua-Gotlib S, Levine D. Medical service use and expenditures in patients with gastroesophageal reflux disease: an analysis of data from the Medical Expenditure Survey, 1997-2000. (Poster Session, Annual Meeting of the American Gastroenterological Association, New Orleans, Louisiana, May, 2004.)
91. Niemcryn SJ, Joshua-Gotlib S, Levine D. Outpatient experience of patients with GERD in the United States: an analysis of the 1998-2001 National Ambulatory Medical Care Survey. (Poster Session, Annual Meeting of the American Gastroenterological Association, New Orleans, Louisiana, May, 2004.)
92. Sharpe LM, Li X, Cowan D, Reid BJ, Levine DS, Ayub K, Blount PL. Temporal change in Barrett's esophagus segment length (BESL) during prospective surveillance. (Poster Session, Annual Meeting of the American Society for Gastrointestinal Endoscopy, New Orleans, Louisiana, May, 2004.)
93. Spechler S, Sharma P, Traxler B, Levine DS, Falk GW. Effect of esomeprazole on intraesophageal pH in patients with Barrett's esophagus. (Poster Session, 69<sup>th</sup> Annual Meeting of the American College of Gastroenterology, Orlando, Florida, November, 2004.)
94. Levine DS. Pharmaceutical / Academic GI Partnership for Clinical Research. (American Gastroenterological Association Institute, 3<sup>rd</sup> Annual GI Division Chiefs' Workshop, Lake Buena Vista, Florida, November, 2006.)
95. Alemayehu B, Ke X, Levine DS, Crawley JA. Impact on resource utilization and costs when formulary exclusion triggers switching of proton pump inhibitor (PPI) therapy. (Poster Session, Annual Meeting of the American Gastroenterological Association, New Orleans, Louisiana, May, 2010.)

## INVITED RESEARCH PRESENTATIONS: INTERNATIONAL & NATIONAL (continued)

Douglas S. Levine, MD, AGAF, FACG

96. Levine DS. The place of comparative effectiveness research (CER) in defining the value of treatment interventions. (Platform Session, Late Phase Drug Development World Americas 2011, Health Network Communications, Boston, Massachusetts, March, 2011.)
97. Levine DS, Lauer M. Comparative effectiveness research in late phase drug development. (Platform Session, Late Phase Drug Development World Americas 2011, Health Network Communications, Boston, Massachusetts, March, 2011.)
98. Levine DS. Chronic constipation with abdominal symptoms. (Platform Session, Rome Foundation Advisory Council Meeting, Intercontinental Hotel, Chicago, Illinois, May, 2011.)
99. Levine DS, Chey WD, Lembo A, Shao JZ, Lavins BJ, Schneier H, Johnston JM. Efficacy and safety of linaclotide administered orally once-daily for 26 weeks in patients with irritable bowel syndrome with constipation (IBS-C). (Poster Session, American Academy of Nurse Practitioners 26th National Conference, Las Vegas, Nevada, June, 2011.)
100. Levine DS. Use of comparative effectiveness research to define the value of medical treatment by evaluating total health impact. (Platform Session, Demonstrating Drug Value Through Late Phase Data Generation, NextLevel Pharma 2011, KeyBridge Marriott Hotel, Arlington, Virginia, September, 2011.)
101. Levine DS, Ahmed E-T, Mantick N. Incorporating comparative effectiveness into late-phase research design. (Panel Session, Demonstrating Drug Value Through Late Phase Data Generation, NextLevel Pharma 2011, KeyBridge Marriott Hotel, Arlington, Virginia, September, 2011.)
102. Levine DS, Chey WD, Lembo A, Shao JZ, Lavins BJ, Schneier H, Johnston JM. Efficacy and safety of linaclotide administered orally once-daily for 26 weeks in patients with irritable bowel syndrome with constipation (IBS-C). (Poster Session, 16th Neurogastroenterology & Motility Meeting, St. Louis, Missouri, September, 2011.)
103. Levine DS. Post-Approval Executive Summit for Pharmaceutical, Biotech, and Medical Device Companies: Data sources for comparative effectiveness research. (Panel Session, CBI's 14th Registries and Post-Approval Congress, Loews Hotel, Philadelphia, Pennsylvania, September, 2011.)
104. Levine DS. Life Science Clinical Research Forum. (Platform Session, Recognizing the importance of clinical research in comparative effectiveness. Q1 Productions, Embassy Suites Boston, Boston, Massachusetts, November, 2011.)
105. Levine DS. Integrating Comparative Effectiveness Research. (Platform Session. Impact of formulary restrictions on available treatments for the patients. Q1 Productions, Sheraton Society Hill Hotel, Philadelphia, Pennsylvania, December, 2011.)
106. Levine DS. Keynote Speech: New Era of IBS Treatment. (American Chinese Medical Exchange Society Annual Conference, Hyatt Regency Cambridge, Cambridge, Massachusetts, November, 2012.)
107. Levine DS. Panel Discussion: Gastroesophageal Reflux Disease. (American Gastroenterological Association Drug Development Conference: Clinical Endpoints in Upper GI Disorders, The Liaison Capitol Hill, Washington, DC, October, 2016.)
108. Levine DS. Panel Discussion: Best Practices - How to Apply Real-World Evidence Early in the Product Development for Commercial Success. (Massachusetts Biotechnology Council: INC Research/inVentiv Health Thought Leadership Luncheon, MassBio, Cambridge, MA, October, 2017.)

## INVITED LECTURES: REGIONAL & LOCAL

Douglas S. Levine, MD, AGAF, FACG

1. Levine DS, Rubin CE. Ultrastructural aspects of Barrett's metaplasia and dysplasia. (Seminar, Gastroenterology Unit Research Group, Yale University School of Medicine, New Haven, Connecticut, January, 1986.)
2. Levine DS, Ainardi V, Raisys VA, Rubin CE. Treatment of inflammatory bowel disease with beclomethasone dipropionate. (Poster Session, NIH Clinical Research Center 25<sup>th</sup> Anniversary Meeting, University of Washington, Seattle, Washington, March, 1986.)
3. Levine DS. Peptic esophagitis and Barrett's esophagus. (Continuing Medical Education Lecture, Stevens Memorial Hospital, Edmonds, Washington, September, 1986.)
4. Levine DS. Differential diagnosis of diarrhea. (Medical Housestaff Noon Conference, Swedish Hospital Medical Center, Seattle, Washington, September, 1986.)
5. Levine DS, Surawicz CM, Ajer TN, Rubin CE. Diffuse mucosal collagen excess in rectal biopsies differentiates solitary rectal ulcer syndrome from idiopathic inflammatory bowel disease. (Platform Session, Young Investigators Symposium in the Biomedical Sciences, "Connective Tissues: Clinical and Basic Science," University of Washington, Seattle, Washington, October, 1986.)
6. Levine DS. Ultrastructural evaluation of Barrett's metaplasia and dysplasia. (Wade Volwiler Visiting Professorship Research Presentation, Division of Gastroenterology, University of Washington, Seattle, Washington, October, 1986.)
7. Levine DS. Ultrastructural evaluation of Barrett's metaplasia and dysplasia. (Grand Rounds, Division of Gastroenterology, University of Washington, Seattle, Washington, January, 1987.)
8. Levine DS. Therapy of ambulatory idiopathic inflammatory bowel disease. (Continuing Medical Education Lecture, Good Samaritan Hospital, Puyallup, Washington, May, 1987.)
9. Levine DS. Diarrhea, constipation, idiopathic inflammatory bowel disease, and functional bowel syndrome. (Family Nurse Practitioner Graduate Program Lecture, University of Washington, Seattle, Washington, May, 1987.)
10. Levine DS. Therapy of idiopathic inflammatory bowel disease. (Continuing Medical Education Lecture, Evergreen Hospital, Kirkland, Washington, August, 1987.)
11. Levine DS. Gastroenterologic problems in the elderly. (School of Nursing Gerontological Nurse Practitioner Program Lecture, University of Washington, Seattle, Washington, September, 1987.)
12. Levine DS. Upper endoscopy and colonoscopy: Indications and risks. (Medical Housestaff Noon Conference, Harborview Medical Center, Seattle, Washington, October, 1987.)
13. Levine DS. Future therapy for inflammatory bowel disease. (Continuing Medical Education Lecture, George N. Aagaard Annual Postgraduate Course, "Current Concepts in Drug Therapy," University of Washington, Seattle, Washington, November, 1987.)
14. Levine DS. The approach to management of ambulatory idiopathic inflammatory bowel disease. (Continuing Medical Education Lecture, Cascade Valley Hospital, Arlington, Washington, November, 1987.)
15. Levine DS. Diagnosis and treatment of ambulatory idiopathic inflammatory bowel disease. (Continuing Medical Education Lecture, Humana Hospital, Tacoma, Washington, December, 1987.)
16. Levine DS. Diagnosis and treatment of distal colitis: A guide to therapy of ambulatory patients. (Continuing Medical Education Lecture, University of Washington CME Course: "Update in Gastroenterology," Blaine, Washington, March, 1988.)

## INVITED LECTURES: REGIONAL & LOCAL (continued)

Douglas S. Levine, MD, AGAF, FACC

17. Levine DS. Selective drug delivery: New approaches to therapy of idiopathic inflammatory bowel disease. (Continuing Medical Education Lecture, University of Washington CME Course: "Update in Gastroenterology," Blaine, Washington, March, 1988.)
18. Levine DS. Histologic-flow cytometric analysis of a patient with chronic ulcerative colitis. (Case Presentation, GI Pathology Conference, Swedish Hospital Medical Center, Seattle, Washington, March, 1988.)
19. Levine DS. Gastroenterologic problems in the elderly. (School of Nursing Gerontological Nurse Practitioner Program Lecture, University of Washington, Seattle, Washington, April, 1988.)
20. Levine DS. Drug delivery in the GI tract. (Fellows Pathophysiology Conference, Division of Gastroenterology, University of Washington, Seattle, Washington, April, 1988.)
21. Levine DS. Diagnosis and treatment of ambulatory idiopathic inflammatory bowel disease. (Continuing Medical Education Lecture, West Seattle Community Hospital, West Seattle, Washington, April, 1988.)
22. Levine DS. Precursors of sporadic colon cancer. (Grand Rounds, Division of Gastroenterology, University of Washington, Seattle, Washington, April, 1988.)
23. Levine DS. Treatment of GI disease in the elderly. (Continuing Nursing Education Lecture, "Current Drug Therapy Concepts for the Elderly," University of Washington, Seattle, Washington, April, 1988.)
24. Levine DS. Diagnosis and treatment of ambulatory idiopathic inflammatory bowel disease. (Continuing Medical Education Lecture, Harrison Hospital, Bremerton, Washington, May, 1988.)
25. Levine DS. Neoplastic progression in ulcerative colitis. (Medical Grand Rounds, Lahey Clinic Medical Center, Burlington, Massachusetts, August, 1988.)
26. Levine DS. Gastrointestinal disease of the elderly. (Continuing Nursing Education Lecture, "Update in Gerontological Nursing," University of Washington, Seattle, Washington, September, 1988.)
27. Levine DS. Diagnosis and treatment of ambulatory idiopathic inflammatory bowel disease. (Continuing Medical Education Lecture, Stevens Memorial Hospital, Edmonds, Washington, October, 1988.)
28. Levine DS. Cellular signaling; EM of Barrett's esophagus. (Residents Conference, Department of Pathology, University of Washington, Seattle, Washington, October, 1988.)
29. Levine DS. Diagnosis and treatment of ambulatory idiopathic inflammatory bowel disease. (Continuing Medical Education Lecture, St Joseph's Hospital, Bellingham, Washington, October, 1988.)
30. Levine DS. Diseases of the colon in the elderly. (Grand Rounds, Division of Geriatrics, Harborview Medical Center, Seattle, Washington, March, 1989.)
31. Levine DS. Neoplastic progression in the colon. (Cancer Conference, United General Hospital, Sedro-Woolley, Washington, May, 1989.)
32. Levine DS. Pathogenesis of colon cancer: p53 gene mutations and chromosome 17 deletions (Journal Club, Division of Gastroenterology, University of Washington, Seattle, Washington, August, 1989.)
33. Levine DS. Inflammatory bowel disease. (Continuing Medical Education Lecture, Whidbey General Hospital, Coupeville, Washington, September, 1989.)



## INVITED LECTURES: REGIONAL & LOCAL (continued)

Douglas S. Levine, MD, AGAF, FACG

34. Levine DS. Cell biologic aspects of neoplastic progression. (Journal Club, Division of Gastroenterology, University of Washington, Seattle, Washington, October, 1989.)
35. Levine DS. Acute and chronic hepatitis. (Medical Housestaff Noon Conference, Harborview Medical Center, Seattle, Washington, October, 1989)
36. Levine DS. Gastrointestinal diseases in the elderly. (School of Nursing Gerontological Nurse Practitioner Program Lecture, University of Washington, Seattle, Washington, November, 1989.)
37. Levine DS. Diagnosis and treatment of ambulatory idiopathic inflammatory bowel disease. (Continuing Medical Education Lecture, Valley Medical Center, Renton, Washington, November, 1989.)
38. Levine DS. Eukaryotic cell cycle. (Journal Club, Division of Gastroenterology, University of Washington, Seattle, Washington, January, 1990.)
39. Levine DS. Gastrointestinal disorders in the elderly. (Division of Geriatrics Continuing Medical Education Lecture, Harborview Medical Center, Seattle, Washington, February, 1990.)
40. Levine DS. Pathogenesis of pancreatic cancer in a transgenic mouse model: Genomic instability illustrated? (Grand Rounds, Division of Gastroenterology, University of Washington, Seattle, Washington, April, 1990.)
41. Levine DS. Therapy of idiopathic inflammatory bowel disease. (Fellows Pathophysiology Conference, Division of Gastroenterology, University of Washington, Seattle, Washington, June, 1990.)
42. Levine DS. Ileocolic anastomosis: An alternative surgical procedure for patients with UC or FPC. (AGA Meeting Review, Division of Gastroenterology, University of Washington, Seattle, Washington, August, 1990.)
43. Levine DS. Diagnosis and therapy in inflammatory bowel disease. (Pacific Northwest Society of Gastrointestinal Nurses and Assistants 1990 Fall Course Lecture, Bellevue, Washington, October, 1990.)
44. Levine DS. Barrett's adenocarcinoma: Managing the cancer risk. (Continuing Medical Education Lecture, "Gastrointestinal Cancer in the 1990s," Virginia Mason Hospital, Seattle, Washington, October, 1990.)
45. Levine DS. Neoplastic progression in Barrett's esophagus and a transgenic mouse model of pancreatic cancer. (Attending Rounds, Division of Oncology, University of Washington, Seattle, Washington, October, 1990.)
46. Levine DS. Therapy of ambulatory idiopathic colitis. (Continuing Medical Education Lecture, St Joseph's Hospital, Tacoma, Washington, January, 1991.)
47. Levine DS. Idiopathic inflammatory bowel diseases (IIBD): Etiologic and epidemiologic considerations. (Continuing Medical Education Lecture, "Inflammatory Bowel Disease in the '90s," Virginia Mason Hospital, Seattle, Washington, March, 1991.)
48. Levine DS. Surveillance: Is it justified? (Continuing Medical Education Lecture, "Inflammatory Bowel Disease in the '90s," Virginia Mason Hospital, Seattle, Washington, March, 1991.)
49. Levine DS. Recent developments in the etiology of idiopathic ulcerative colitis and Crohn's disease. (Journal Club, Division of Gastroenterology, University of Washington, Seattle, Washington, March, 1991.)
50. Levine DS. Distribution of proliferative abnormalities in colon tumors and morphologically normal surrounding mucosa. (Journal Club, Section of Nutritional and Metabolic Biochemistry and Nutritional Epidemiology, Cancer Prevention Research Program, Fred Hutchinson Cancer Research Center, Seattle, Washington, April, 1991.)

## INVITED LECTURES: REGIONAL & LOCAL (continued)

Douglas S. Levine, MD, AGAF, FACC

51. Levine DS. Inflammatory bowel disease. (Continuing Medical Education Lecture, American College of Physicians Board Review Course, Seattle, Washington, August, 1991.)
52. Levine DS. Idiopathic inflammatory bowel disease. (Fellows Seminar, Division of Gastroenterology, University of Washington, Seattle, Washington, August, 1991.)
53. Levine DS. Treatment of patients with idiopathic inflammatory bowel disease (IBD). (Continuing Medical Education Lecture, Pierce County Nutrition Support Committee Educational Series, "Nutrition Through the Life Cycle," St Joseph's Hospital and Health Care Center, Tacoma, Washington, September, 1991.)
54. Levine DS. Intermediate biomarkers of precancer and their application in chemoprevention: Review of Keystone Conference. (Journal Club, Division of Gastroenterology, University of Washington, Seattle, Washington, October, 1991.)
55. Levine DS. Inflammatory bowel disease: Diagnosis and treatment. (Pacific Northwest Society of Gastroenterology Nurses and Associates Fall Course, Bellevue, Washington, October, 1991.)
56. Levine DS. Inflammatory bowel disease. (Medical Residents Teaching Conference, Department of Medicine, University of Washington, Seattle, Washington, October, 1991.)
57. Levine DS. Neoplastic progression in Barrett's esophagus and a transgenic mouse model of pancreatic cancer. (Attending Rounds, Division of Oncology, University of Washington, Seattle, Washington, October, 1991.)
58. Haggitt RC, Levine DS. Pathologic and endoscopic diagnosis in inflammatory bowel disease. (Continuing Medical Education Lectures, Crohn's & Colitis Foundation of America Workshop, Richland Memorial Hospital, Columbia, South Carolina, November, 1991.)
59. Levine DS. Idiopathic inflammatory bowel diseases (IBD). (Continuing Medical Education Course Lecture, "Current Concepts in Drug Therapy 1991," University of Washington, Seattle, Washington, November, 1991.)
60. Levine DS. Do's and do not's for oral presentations. (Fellows Seminar, Division of Gastroenterology, University of Washington, Seattle, Washington, December, 1991.)
61. Levine DS. New therapies for patients with Crohn's disease and ulcerative colitis. (Crohn's & Colitis Foundation of America Puget Sound Chapter Education Meeting, Virginia Mason Hospital, Seattle, Washington, January, 1992.)
62. Levine DS. Extinguishing the burning bowel: Strategies for managing Crohn's disease and ulcerative colitis. (Medical Grand Rounds, Department of Medicine, University of Washington, Seattle, Washington, February, 1992.)
63. Levine DS. Colonic and anorectal disorders in the elderly. (Division of Geriatrics Continuing Medical Education 16<sup>th</sup> Annual Symposium Program, "Aging and the Elderly," Seattle, Washington, March, 1992.)
64. Levine DS. Inflammatory bowel disease: Strategies for medical management. (Medical Grand Rounds, Madigan Army Hospital, Tacoma, Washington, June, 1992.)
65. Levine DS. Pathogenesis of idiopathic inflammatory bowel disease and new therapeutic approaches. (AGA Meeting Review, Division of Gastroenterology, University of Washington, July, 1992.)
66. Levine DS. Inflammatory bowel disease. (Continuing Medical Education Lecture, American College of Physicians Board Review Course, Seattle, Washington, August, 1992.)
67. Levine DS. Inflammatory bowel disease. (Medicine Grand Rounds, Tacoma General Hospital, Tacoma, Washington, August, 1992.)

## INVITED LECTURES: REGIONAL & LOCAL (continued)

Douglas S. Levine, MD, AGAF, FACC

68. Levine DS. Do's and do not's for oral presentations. (Fellows Seminar, Division of Gastroenterology, University of Washington, August, 1992.)
69. Levine DS. Colorectal cancer surveillance. (Primary Care Conference, Department of Medicine, University of Washington, Seattle, Washington, September, 1992.)
70. Levine DS. Precursors of colorectal cancer. (Research in Progress, Division of Gastroenterology, University of Washington, Seattle, Washington, September, 1992.)
71. Levine DS. Endoscopic screening for gastrointestinal malignancies. (Continuing Medical Education Lecture, Valley Medical Center, Renton, Washington, September, 1992.)
72. Levine DS. Inflammatory bowel disease. (Medicine Grand Rounds, Tucson Medical Center, Tucson, Arizona, September, 1992.)
73. Levine DS. Idiopathic colitis: Diagnosis and treatment. (Continuing Medical Education Lecture, Highline Community Hospital, Seattle, Washington, October, 1992.)
74. Levine DS. Inflammatory bowel disease: The disease and the patient's perspective. (Pacific Northwest Society of Gastroenterology Nurses and Associates Fall Course, Seattle, Washington, October, 1992.)
75. Levine DS. Inflammatory bowel disease. (Surgery Grand Rounds, Providence Medical Center, Seattle, Washington, November, 1992.)
76. Levine DS, Sinanan M. Esophageal motility disorders. (Residents Conference, Division of Thoracic Surgery, University of Washington, Seattle, Washington, November, 1992.)
77. Levine DS. Surveillance of gastrointestinal malignancies. (Residents Teaching Conference, Department of Medicine, University of Washington, Seattle, Washington, December, 1992.)
78. Levine DS. Endoscopic biopsy surveillance in Barrett's esophagus. (Combined Medical Staff of Everett Tumor Conference, General Hospital of Everett, Everett, Washington, December, 1992.)
79. Levine DS. Differentiation of high-grade dysplasia and early adenocarcinoma in Barrett's esophagus. (Journal Club, Division of Gastroenterology, University of Washington, Seattle, Washington, January, 1993.)
80. Levine DS. Peptic disease of the esophagus: Barrett's esophagus. (Medicine Grand Rounds, Tacoma General Hospital, Tacoma, Washington, January, 1993.)
81. Levine DS. Chronic abdominal pain. (School of Nursing Primary Care Nurse Practitioner Program Lecture, University of Washington, Seattle, Washington, February, 1993.)
82. Levine DS. Gastroesophageal reflux disease and Barrett's esophagus. (Continuing Medical Education Lecture, The Polyclinic, Seattle, Washington, February, 1993.)
83. Levine DS. Medical management of patients with ulcerative colitis and Crohn's disease. (Residents Teaching Conference, Department of Family Medicine, University of Washington, Seattle, Washington, February, 1993.)
84. Sninsky C, Levine D, Nilsson LG, Senior J. Overcoming enrollment difficulties. (Panel Discussion, Astra Pharmaceuticals and GH Besselaar Associates Investigators Workshop, "2.0 mg Budesonide vs Placebo vs Cortenema in Distal Ulcerative Colitis," Kansas City, Missouri, February, 1993.)

## INVITED LECTURES: REGIONAL & LOCAL (continued)

Douglas S. Levine, MD, AGAF, FACC

85. Levine DS. Inflammatory bowel disease. (Continuing Medical Education Lecture, Tri-Cities Crohn's & Colitis Group Meeting, Kennewick, Washington, March, 1993.)
86. Levine DS. Barrett's esophagus. (Continuing Nursing Education Course Lecture, "Spring Update: GI Research, GI Related Surgeries, and Future Trends," Virginia Mason Hospital, Seattle, Washington, March, 1993.)
87. Levine DS. Inflammatory bowel disease. (Continuing Medical Education Lecture, Maricopa Country Hospital Staff Meeting, Maricopa Country Hospital, Phoenix, Arizona, March, 1993.)
88. Levine DS. Inflammatory bowel disease. (Continuing Medical Education Lecture, Saddleback Memorial Medical Center, Laguna Hills, California, April, 1993.)
89. Levine DS. Inflammatory bowel disease. (Medical Housestaff Noon Conference, Harborview Medical Center, Seattle, Washington, April, 1993.)
90. Levine DS. Inflammatory bowel disease. (Medical Housestaff Noon Conference, University of Washington, Seattle, Washington, May, 1993.)
91. Levine DS. Alimentary tract diseases. (Continuing Nursing Education Lecture, "Continuing Nurse Specialist Series: The Management of Acute and Chronic Health Problems of Adults and Older Adults," University of Washington, Seattle, Washington, June, 1993.)
92. Levine DS. Pathogenesis of idiopathic inflammatory bowel diseases and new therapeutic approaches. (AGA Meeting Review, Division of Gastroenterology, University of Washington, Seattle, Washington, June, 1993.)
93. Levine DS. Inflammatory bowel disease. (Continuing Medical Education Lecture, Idaho Gut Club Annual Meeting, McCall, Idaho, June, 1993.)
94. Levine DS. Barrett's esophagus. (Continuing Medical Education Lecture, Idaho Gut Club Annual Meeting, McCall, Idaho, June, 1993.)
95. Levine DS. Gastroesophageal reflux disease and its complications. (Continuing Medical Education Lecture, Kennewick General Hospital, Kennewick, Washington, July, 1993.)
96. Levine DS. Inflammatory bowel disease. (Continuing Medical Education Lecture, American College of Physicians Board Review Course, Seattle, Washington, August, 1993.)
97. Wallace JF, Burke W, Stimson J, Levine DS, Wipf J, Robertson T. Career Planning Panel Discussion. (Fall Residents Retreat, Department of Medicine, University of Washington, Seattle, Washington, November, 1993.)
98. Levine DS. Treatment of idiopathic colitis with PC1020 retention enemas. (Research in Progress, Division of Gastroenterology, University of Washington, Seattle, Washington, November, 1993.)
99. Levine DS. Ulcerative colitis and sclerosing cholangitis. (Professor's Rounds, Department of Medicine, University of Washington, Seattle, Washington, November, 1993.)
100. Levine DS. Medical management of patients with large intestinal disorders. (Residents Teaching Conference, Department of Medicine, University of Washington, Seattle, Washington, December, 1993.)
101. Levine DS. Neoplastic progression in Barrett's esophagus. (Attending Round, Division of Oncology, University of Washington, Seattle, Washington, December, 1993.)

## INVITED LECTURES: REGIONAL & LOCAL (continued)

Douglas S. Levine, MD, AGAF, FACC

102. Levine DS. Inflammatory bowel disease. (Medical Housestaff Noon Conference, University of Washington, Seattle, Washington, January, 1994.)
103. Levine DS. Inflammatory bowel disease. (Continuing Medical Education Lecture, General Hospital of Everett, Everett, Washington, January, 1994.)
104. Levine DS. Chronic abdominal pain. (School of Nursing Primary Care Nurse Practitioner Program Lecture, University of Washington, Seattle, Washington, February, 1994.)
105. Berg A, Brawer M, Levine DS, Belcher D. Workshop Panel Discussion and Workshop: Controversies in health screening. (Society of General Internal Medicine Tenth Annual Northwest Regional Meeting, "Prevention: Where Does It Fit In Health Care Reform?" Providence Medical Center, Seattle, Washington, February, 1994.)
106. Levine DS. Inflammatory bowel disease. (Continuing Medical Education Lecture, Northwest Hospital, Seattle, Washington, March, 1994.)
107. Levine DS. Strategies in the pharmacologic management of GI illness. (Continuing Nursing Education Lecture, "Adult Drug Therapy," Shoreline Conference Center, Seattle, Washington, May, 1994.)
108. Levine DS. Screening for cancer: Colorectal cancer and Barrett's esophageal cancer. (Graduate Course Lecture, Department of Pathobiology, University of Washington, Seattle, Washington, May, 1994.)
109. Levine DS. Inflammatory bowel disease. (Continuing Medical Education Lecture, American College of Physicians Board Review Course, Seattle, Washington, August, 1994.)
110. Levine DS. Review of Interfalk Canada IBD Symposia. (Journal Club, Division of Gastroenterology, University of Washington, Seattle, Washington, August, 1994.)
111. Levine DS. Barrett's esophagus. (Residents Conference, Division of Thoracic Surgery, University of Washington, Seattle, Washington, September, 1994.)
112. Levine DS. Barrett's esophagus: Management and surveillance strategies. (Continuing Medical Education Lecture, "Point and Counterpoint in Digestive Diseases," New York, New York, September, 1994.)
113. Levine DS. Barrett's esophagus: Management and surveillance strategies. (Continuing Medical Education Lecture, "Point and Counterpoint in Digestive Diseases," Philadelphia, Pennsylvania, October, 1994.)
114. Levine DS. Barrett's esophagus: Pathophysiology and cancer risk. (Continuing Medical Education Lecture, "Point and Counterpoint in Digestive Diseases," Los Angeles, California, November, 1994.)
115. Levine DS. Issues, Cases & Questions in Crohn's and Colitis, Program Chair. (Continuing Medical Education Program, Crohn's & Colitis Foundation of America, Seattle, Washington, December, 1994.)
116. Levine DS. Etiopathogenesis of Crohn's disease and colitis, Panel Moderator. (Continuing Medical Education Program, "Issues, Cases & Questions in Crohn's and Colitis," Crohn's & Colitis Foundation of America, Seattle, Washington, December, 1994.)
117. Levine DS. IIBD and the infection connection: Mucosal barrier. (Continuing Medical Education Lecture, "Issues, Cases & Questions in Crohn's and Colitis," Crohn's & Colitis Foundation of America, Seattle, Washington, December, 1994.)
118. Haggitt RC, Tarr P, Levine DS, Meisel J. IIBD and the infection connection: Panel discussion. (Continuing Medical Education Lecture, "Issues, Cases & Questions in Crohn's and Colitis," Crohn's & Colitis Foundation of America, Seattle, Washington, December, 1994.)

## INVITED LECTURES: REGIONAL & LOCAL (continued)

Douglas S. Levine, MD, AGAF, FACG

119. Meisel J, Haggitt RC, Brentnall T, Levine DS. Complications - intestinal neoplasia: Panel discussion. (Continuing Medical Education Lecture, "Issues, Cases & Questions in Crohn's and Colitis," Crohn's & Colitis Foundation of America, Seattle, Washington, December, 1994.)
120. Levine DS. Screening for colon cancer. (Continuing Medical Education Lecture, American College of Physicians Annual Scientific Meeting, Seattle, Washington, December, 1994.)
121. Levine DS. Barrett's esophagus. (Continuing Medical Education Lecture, Virginia Mason Clinic Medical Grand Rounds, Seattle, Washington, December, 1994.)
122. Levine DS. Enteric infections and malabsorption. (Residents Reading Conference, Department of Surgery, Providence Medical Center, Seattle, Washington, January, 1995.)
123. Levine DS. Chronic abdominal pain. (School of Nursing Primary Care Nurse Practitioner Program Lecture, University of Washington, Seattle, Washington, January, 1995.)
124. Levine DS, Boyce W, Richter J. Long-term management of GERD and its complications: Panel discussion. (Continuing Medical Education Program, "The Management of Acid-Related Disorders: Clinical Practice and Therapeutic Principles," Clearwater, Florida, February, 1995.)
125. Levine DS. Barrett's esophagus: Management and surveillance strategies. (Continuing Medical Education Lecture, "Point and Counterpoint in Digestive Diseases," Washington, DC, March, 1995.)
126. Levine DS. Inflammatory bowel disease therapy. (Seattle Area Society of Hospital Pharmacists, Seattle, Washington, March, 1995.)
127. Levine DS. Barrett's esophagus: Management and surveillance strategies. (Continuing Medical Education Lecture, "Point and Counterpoint in Digestive Diseases," Houston, Texas, April, 1995.)
128. Levine DS. Screening for cancer: Barrett's esophageal adenocarcinoma. (Graduate Course Lecture, Department of Pathobiology, University of Washington, Seattle, Washington, May, 1995.)
129. Levine DS. Drug therapy for GI conditions. (School of Nursing and School of Pharmacy Applied Drug Therapy in Nursing Course Lecture, University of Washington, Seattle, Washington, May, 1995.)
130. Levine DS. High-grade dysplasia in Barrett's esophagus: Ploidy of colorectal adenomas. (AGA Meeting Review, Division of Gastroenterology, University of Washington, Seattle, Washington, June, 1995.)
131. Levine DS. Management of GERD and Barrett's esophagus. (Continuing Medical Education Lecture, "Update on the Management of Gastroesophageal Diseases," Kennewick, Washington, June, 1995.)
132. Levine DS. Review of ongoing UW clinical trials. (Journal Club, Division of Gastroenterology, University of Washington, Seattle, Washington, July, 1995.)
133. Levine DS. Inflammatory bowel disease. (Continuing Medical Education Lecture, American College of Physicians Board Review Course, Seattle, Washington, July, 1995.)
134. Levine DS. Do's and do not's for oral presentations. (Fellows Seminar, Division of Gastroenterology, University of Washington, Seattle, Washington, August, 1995.)
135. Levine DS. High-grade dysplasia in Barrett's esophagus. (UWMC GI Endoscopy Nursing Staff Inservice, University of Washington, Seattle, Washington, September, 1995.)

## INVITED LECTURES: REGIONAL & LOCAL (continued)

Douglas S. Levine, MD, AGAF, FACG

136. Levine DS. Barrett's esophagus: A human model of neoplastic progression. (Continuing Medical Education Lecture, University of Massachusetts Medical School 25<sup>th</sup> Anniversary Reunion Program, University of Massachusetts Medical School, Worcester, Massachusetts, September, 1995.)
137. Levine DS. Inflammatory bowel diseases: Pathogenesis and treatment. (Corporate Instructional Session, Squibb-Bristol Meyers, Seattle, Washington, September, 1995.)
138. Levine DS. Topical steroid treatment of inflammatory bowel diseases with beclomethasone. (Continuing Medical Education Lecture, Kansas City Crohn's & Colitis Foundation of America, Kansas City, Kansas, October, 1995.)
139. Levine DS. Extinguishing the burning bowel: Current management for Crohn's disease and ulcerative colitis. (Medical Grand Rounds, Department of Medicine, University of Kansas Medical Center, Kansas City, Kansas, October, 1995.)
140. Levine DS. Idiopathic inflammatory bowel diseases. (Continuing Medical Education Lecture, "Current Concepts in Drug Therapy 1995," University of Washington, Seattle, Washington, October, 1995.)
141. Levine DS. Management of chest pain of esophageal origin. (School of Nursing Acute Care Nurse Practitioner Program Lecture, University of Washington, Seattle, Washington, November, 1995.)
142. Levine DS. Barrett's esophagus: Pathophysiology and cancer risk. (Continuing Medical Education Lecture, "Point and Counterpoint in Digestive Diseases," San Francisco, California, November, 1995.)
143. Levine DS. Inflammatory bowel disease. (Continuing Medical Education Lecture, "What's New in General Surgery 1995," University of Washington Department of Surgery Harkins Symposium, Fred Hutchinson Cancer Research Center, Seattle, Washington, November, 1995.)
144. Levine DS. Barrett's esophagus: A model system of human cancer. (Continuing Medical Education Lecture, Columbia University College of Physicians & Surgeons 12<sup>th</sup> Annual Update in Gastroenterology, Hepatology and Nutrition, New York, New York, December, 1995.)
145. Levine DS. Cytokines in idiopathic inflammatory bowel disease. (Journal Club, Division of Gastroenterology, University of Washington, Seattle, Washington, January, 1996.)
146. Levine DS. Chronic gastrointestinal problems. (School of Nursing Primary Care Nurse Practitioner Program Lecture, University of Washington, Seattle, Washington, January, 1996.)
147. Levine DS. Natural history of high-grade dysplasia in Barrett's esophagus. (Research in Progress, Division of Gastroenterology, University of Washington, Seattle, Washington, March, 1996.)
148. Levine DS. Barrett's esophagus. (Discussant, Joint Meeting, Divisions of Gastroenterology, University of Washington and Oregon Health Sciences University, Olympia, Washington, April, 1996.)
149. Levine DS. Extraintestinal manifestations of inflammatory bowel disease. (J-Pouch Support Group Lecture, University of Washington, Seattle, Washington, April, 1996.)
150. Levine DS. Gastroesophageal reflux disease. (Continuing Medical Education Lecture, "Point and Counterpoint in Digestive Diseases," Los Angeles, California, April, 1996.)
151. Levine DS. Drug therapy for GI conditions. (School of Nursing and School of Pharmacy Applied Drug Therapy in Nursing Course Lecture, University of Washington, Seattle, Washington, May, 1996.)

## INVITED LECTURES: REGIONAL & LOCAL (continued)

Douglas S. Levine, MD, AGAF, FACG

152. Levine DS. Idiopathic inflammatory bowel diseases (IIBD). (Continuing Medical Education Lecture, Pierce County Medical Society College of Medical Education, "Nuts, Bolts & Innovation in Gastrointestinal Disease," Tacoma, Washington, June, 1996.)
153. Schulte S, Levine DS, Medwell S. Inflammatory bowel disease: A multi-disciplinary approach. (Panel Discussion, Pierce County Medical Society College of Medical Education, "Nuts, Bolts & Innovation in Gastrointestinal Disease," Tacoma, Washington, June, 1996.)
154. Levine DS. AGA review: Barrett's esophagus. (Journal Club, Division of Gastroenterology, University of Washington, Seattle, Washington, June, 1996.)
155. Levine DS. Diagnosis and management of Barrett's esophagus. (Medical Grand Rounds, Department of Medicine, University of Iowa College of Medicine, Iowa City, Iowa, June, 1996.)
156. Levine DS. AGA focused update: Barrett's esophagus. (Division of Gastroenterology Research Conference, University of Iowa College of Medicine, Iowa City, Iowa, June, 1996.)
157. Levine DS. Natural history of high-grade dysplasia in Barrett's esophagus. (Combined Grand Rounds, Division of Gastroenterology and Department of Surgery, University of Iowa College of Medicine, Iowa City, Iowa, June, 1996.)
158. Levine DS. Inflammatory bowel disease. (Continuing Medical Education Lecture, American College of Physicians Board Review Course, Seattle, Washington, August, 1996.)
159. Levine DS. Complications of GERD: Barrett's esophagus. (Corporate Instructional Session, Astra Merck, Seattle, Washington, September, 1996.)
160. Levine DS. Gastroesophageal reflux disease. (Continuing Nursing Education Lecture, Pacific Northwest Primary Care Conference, University of Washington, Seattle, Washington, October, 1996.)
161. Levine DS. Barrett's esophagus: A human model of cancer development. (Continuing Medical Education Lecture, 20<sup>th</sup> Annual McCall Winter Conference, McCall, Idaho, January, 1997.)
162. Levine DS. Inflammatory bowel diseases: Current management. (Continuing Medical Education Lecture, 20<sup>th</sup> Annual McCall Winter Conference, McCall, Idaho, January, 1997.)
163. Levine DS. Colorectal cancer surveillance. (Continuing Medical Education Lecture, 20<sup>th</sup> Annual McCall Winter Conference, McCall, Idaho, January, 1997.)
164. Levine DS. Inflammatory bowel disease. (Residents' Conference, Department of Medicine, University of Washington, Seattle, Washington, February, 1997.)
165. Levine DS. Barrett's esophagus. (Residents' Conference, Division of Thoracic Surgery, University of Washington, Seattle, Washington, February, 1997.)
166. Levine DS. Neoplastic progression in Barrett's esophagus. (Attending Rounds, Division of Oncology, University of Washington, Seattle, Washington, February, 1997.)
167. Levine DS. Approaches in diarrhea. (Continuing Medical Education Lecture, Hall Health Primary Care Center, University of Washington, Seattle, Washington, April, 1997.)
168. Levine DS. Gastrointestinal agents. (School of Nursing and School of Pharmacy Applied Drug Therapy in Nursing Course Lecture, University of Washington, Seattle, Washington, May, 1997.)



**INVITED LECTURES: REGIONAL & LOCAL** (continued)

Douglas S. Levine, MD, AGAF, FACC

169. Oster G, et al. GERD Outcomes Trial. (Investigators Meeting, Boston, Massachusetts, December, 1997.)
170. Levine DS, et al. Facilitating pediatric labeling for pharmaceuticals. (Chairman, Astra Merck - Pediatric Gastroenterology Consultants Conference, Scottsdale, Arizona, February, 1998.)
171. Fennerty MB, Richter J, Drea E, Fendrick M, Hogan WJ, Johnson DA, Katz PO, Levine DS, Ofman JJ, Sheppard B. Content development meeting. (Pathways Program, Dallas, Texas, February, 1998.)
178. Levine DS. Current and future research in GI diseases. (Conference Lecture, Astra Merck South Central Regional GI Consultants Conference, New Orleans, Louisiana, April, 1998.)
179. Levine DS. High-grade dysplasia: Operate, Survey, or Ablate? (Continuing Medical Education Lecture, Astra Merck Northwest Regional GI Consultants Conference, "Integrating Pathology Into GI Clinical Decision Making," Seattle, Washington, April, 1998.)
180. Levine DS. Current and future research in GI diseases. (Conference Lecture, Astra Merck Northwest Regional GI Consultants Conference, "Integrating Pathology Into GI Clinical Decision Making," Seattle, Washington, April, 1998.)
181. Fennerty MB, Richter J, et al. Consensus meeting. (Pathways Program, Newport Beach, California, April, 1998.)
182. Levine DS, et al. Facilitating pediatric labeling for pharmaceuticals. (Chairman, Astra Merck - Pediatric Gastroenterology Consultants Conference, Chesterbrook, Pennsylvania, May, 1998.)
183. Levine DS, et al. Facilitating pediatric labeling for pharmaceuticals. (Chairman, Astra Merck - Pediatric Pharmacology Research Unit Consultants Conference, Chesterbrook, Pennsylvania, May, 1998.)
184. Levine DS. Current and future research in GI diseases. (Conference Lecture, Astra Merck Mid-Atlantic Regional GI Consultants Conference, Hot Springs, Virginia, May, 1998.)
185. Levine DS. GERD and Prilosec. (Conference Lecture, Astra Merck Mid-West Regional GI Consultants Conference, Cincinnati, Ohio, June, 1998.)
186. Levine DS. Current and future research in GI diseases. (Conference Lecture, Astra Pharmaceuticals Southwest Regional GI Consultants Conference, Phoenix, Arizona, July, 1998.)
187. Levine DS. Barrett's esophagus: A human model of cancer. (Conference Lecture, Astra Pharmaceuticals Midwest Regional GI Consultants Conference, Lake Geneva, Wisconsin, August, 1998.)
188. Levine DS. GI update from Astra Pharmaceuticals. (Conference Lecture, Astra Pharmaceuticals Indianapolis Regional GI Consultants Conference, South Haven, Michigan, October, 1998.)
189. Levine DS. Barrett's esophagus. (Medical Grand Rounds, Mercy Medical Center, Rockville Centre, Long Island, New York, June, 1999.)

## PREVIOUS GRANT AND CONTRACT SUPPORT (at University of Washington)

Douglas S. Levine, MD, AGAF, FACG

National Institutes of Health UO1 CA2548 (cooperative agreement, subcontract)

Barrett's Esophagus: Diet Intervention and Intermediate Markers

Douglas S. Levine, MD, Principal Investigator, 15% Salary Support

\$494,117/\$695,332 Direct/Total Costs: 9/1/95-8/31/00

National Institutes of Health RO1 CA61202 (grant subcontract)

Predictors of Progression in Barrett's Esophagus

Douglas S. Levine, MD, Principal Investigator, 35% Salary Support

\$617,978/\$819,582 Direct/Total Costs: 5/1/96-11/30/99

National Institutes of Health, NINR RO1 NR04101

Nursing Management of IBS: Improving Outcomes

Margaret M. Heitkemper, RN, PhD, Principal Investigator; Douglas S. Levine, MD, Co-Investigator, 3% Salary Support

\$675,031 Total Costs: 9/20/95-7/31/99

TAP Holdings, Inc Protocol M96-521 (contract)

A Study to Evaluate the Effects of Lansoprazole 15 mg and 30 mg QD Versus Ranitidine 150 mg BID on Non-Erosive Gastroesophageal Reflux Disease

Douglas S. Levine, MD, Principal Investigator, 2% Salary Support

\$27,404/\$34,255 Direct/Total Costs: 3/1/97-6/30/98

Vanguard Medical Ltd / Corning Besselaar Inc Protocol 96/21 (contract)

A Double Blind, Placebo-Controlled, Parallel Group Study to Assess the Efficacy and Safety of 8 Weeks Treatment With VML295 at a Daily Oral Dose of 400 mg (200 mg bid) in Patients With Acute Ulcerative Colitis

Douglas S. Levine, MD, Principal Investigator, 2% Salary Support

\$51,220/\$66,586 Direct/Total Costs: 9/1/96-12/31/97

Astra USA Protocols 08-3025/08-3046 (contract)

Budesonide Controlled Ileal Release Capsules Once or Twice a Day in Active Crohn's Disease: A Placebo Controlled Study and Budesonide Controlled Ileal Release Capsules as Maintenance Treatment in Crohn's Disease

Douglas S. Levine, MD, Principal Investigator, 2% Salary Support

\$71,850/\$83,432 Direct/Total Costs: 6/1/96-12/31/97

Schering-Plough Research Institute Protocols C95-152/171 (contract supplement)

Safety, Tolerance & Efficacy of Multiple Doses of Subcutaneous rHuIL-10 (SCH 52000) in Patients With Chronic Active Crohn's Disease and Companion Protocol: Safety & Tolerance of Retreatment With Multiple Doses of Subcutaneous rHuIL-10 (SCH 52000) in Patients With Chronic Active Crohn's Disease

Douglas S. Levine, MD, Principal Investigator, 2% Salary Support

\$67,080/\$80,496 Direct/Total Costs: 5/20/96-12/31/97

Food and Drug Administration Office of Orphan Products Development FD-R-000827 (grant)

Clinical Studies of Safety and Effectiveness of Orphan Products, RFA-FDA-OP092-2

Beclomethasone For Intestinal Graft-Versus-Host Disease

Douglas S. Levine, MD, Principal Investigator, 2% Salary Support

\$344,817/\$523,914 Direct/Total Costs: 9/30/92-9/29/97

Immunex Corporation Protocol 16.0006 (contract supplement)

Pharmacokinetic and Bioavailability Study of Radiolabeled Soluble TNF Receptor in Normal Volunteers and in Active Crohn's Disease

Janet Eary, MD, Principal Investigator; Douglas S. Levine, MD, Sub-Investigator, 0% Salary Support

\$64,694/\$90,577 Direct/Total Costs: 10/1/95-6/30/97

**PREVIOUS GRANT AND CONTRACT SUPPORT (at University of Washington) (continued)**

Douglas S. Levine, MD, AGAF, FACG

Schering-Plough Research Institutes Protocol C95-038 (contract)  
Safety, Tolerance and Activity of Multiple Doses of Subcutaneous rHuIL-10 (SCH 52000) in Patients With Mildly to Moderately Active Crohn's Disease  
Douglas S. Levine, MD, Principal Investigator, 0% Salary Support  
\$55,552/\$66,662 Direct/Total Costs: 6/30/95-6/30/97

Schering-Plough Research Institute Protocol C95-039 (contract)  
Safety, Tolerance and Activity of Multiple Doses of Subcutaneous rHuIL-10 (SCH 52000) in Patients With Mildly to Moderately Active Ulcerative Colitis  
Douglas S. Levine, MD, Principal Investigator, 0% Salary Support  
\$48,911/\$58,693 Direct/Total Costs: 6/30/95-6/30/97

ProCyte Corporation Protocol CS-020-90-07 (contract supplement)  
A Randomized Placebo Controlled Study of Prezatide Copper Acetate (PCA) 0.1% or 1.0% Rectal Solution for the Treatment of Ulcerative Colitis  
Douglas S. Levine, MD, Principal Investigator, 0% Salary Support  
\$33,532/\$43,592 Direct/Total Costs: 1/2/95-6/30/97

Salix Pharmaceuticals Inc Protocol CP099301 (contract supplement)  
A Phase III, Randomized, Double-Blind, Dose-Response Comparison of Colazide (Balsalazide Disodium) 6.75G or 2.25G Daily Versus Asacol (Mesalamine) 2.4G Daily in Patients With Active Mild or Moderate Ulcerative Colitis  
Douglas S. Levine, MD, Principal Investigator, 0% Salary Support  
\$79,360/\$111,104 Direct/Total Costs: 6/1/94-6/30/97

ProCyte Corporation Protocol CS-020-90-07 (contract supplement)  
A Research Study of PC1020 Rectal Solution (Iamin-IB) When Administered to Patients With Idiopathic Inflammatory Bowel Disease (IIBD) and Normal Volunteers  
Douglas S. Levine, MD, Principal Investigator, 5% Salary Support  
\$41,058/\$53,375 Direct/Total Costs: 7/1/94-12/31/95

Immunex Corporation Protocol 16.0005 (contract)  
Multicenter Phase I/II Clinical Trial of Recombinant Human TNFR:Fc Receptor (rhu TNFR:Fc) in Active Crohn's Disease  
Douglas S. Levine, MD, Principal Investigator, 0% Salary Support  
\$35,715/\$50,000 Direct/Total Costs: 1/10/94-12/31/95

National Institutes of Health University of Washington Clinical Nutrition Research Unit  
Pilot and Feasibility Grant: Diet and Bile Salt Modulation in Barrett's Esophagus  
Douglas S. Levine, MD, Principal Investigator, 0% Salary Support  
\$25,000 Direct Costs: 12/1/94-11/30/95

Marion Merrell Dow Inc Protocol PAPR0024, Study PAST0472 (contract)  
Efficacy and Safety of Oral Pentasa in the Treatment of Active Crohn's Disease  
Douglas S. Levine, MD, Principal Investigator, 0% Salary Support  
\$58,690/\$71,220 Direct/Total Costs: 1/10/94-6/30/95

Salix Pharmaceuticals Inc Protocol CP069101 continuation (contract supplement)  
An Open-Label Continuation of Protocol CP069101 Evaluating Colazide (Balsalazide Sodium) 6.75G/Day for Acute Treatment and 3.0G/Day for Maintenance Therapy of Patients with Mild or Moderate Ulcerative Colitis  
Douglas S. Levine, MD, Principal Investigator, 0% Salary Support  
\$9,565/\$13,391 Direct/Total Costs: 11/15/93-6/30/95

**PREVIOUS GRANT AND CONTRACT SUPPORT (at University of Washington) (continued)**

Douglas S. Levine, MD, AGAF, FACG

Merck Protocol 024-10 (contract supplement)

An Open-Label Extension Study to Evaluate the Safety and Tolerability of MK-0591 for 12 Months in Patients with Mild to Moderate Ulcerative Colitis

Douglas S. Levine, MD, Principal Investigator, 0% Salary Support

\$62,218/\$74,577 Direct/Total Costs: 11/1/93-6/30/95

National Institutes of Health RO1 CA55814 (grant)

The Cell Cycle and Genomic Instability in Neoplasia

Brian J. Reid, MD, PhD, Principal Investigator; Douglas S. Levine, MD, Co-Investigator, 10% Salary Support

\$404,824/\$619,381 Direct/Total Costs: 2/1/92-1/30/95

Salix Pharmaceuticals Inc Protocol CP069101 (contract)

A Phase III Randomized, Placebo Controlled Double-Blind Dose Response Comparison of Colazide (Balsalazide Sodium) 4.5G and 6.75G Daily Vs Placebo in Patients with Mild or Moderate Ulcerative Colitis

Douglas S. Levine, MD, Principal Investigator, 0% Salary Support

\$56,775/\$79,485 Direct/Total Costs: 10/1/93-12/31/94

Merck Protocol 024-00 (contract)

A Double-Blind, Randomized, Multiple-Dose, Placebo-Controlled, Parallel Group Dose Ranging Study to Evaluate the Effects of MK-0591 in Induction of Symptomatic and Endoscopic Remission in Patients with Active Mild to Moderate Ulcerative Colitis

Douglas S. Levine, MD, Principal Investigator, 0% Salary Support

\$33,936/\$40,338 Direct/Total Costs: 6/15/93-12/31/94

ProCyt Corporation Protocol CS-020-90-07 (contract)

Retention Enema Formulations of PC1020 [Iamin, Glycyl-L-Histidyl-L-Lysine: Copper (2:1)] For the Treatment of Patients With Idiopathic Inflammatory Bowel Disease (IBD): Ulcerative Colitis or Crohn's Disease

Douglas S. Levine, MD, Principal Investigator, 10% Salary Support

\$57,063/\$74,182 Direct/Total Costs: 10/15/92-12/30/94

TAP Pharmaceuticals Inc Protocol M92-712 (contract)

A Study to Evaluate the Effects of Lansoprazole 15 mg and 30 mg Versus Omeprazole 20 mg QD on Acute Erosive Esophagitis

Douglas S. Levine, MD, Principal Investigator, 10% Salary Support

\$174,750/\$218,438 Direct/Total Costs: 10/1/92-8/31/94

Astra Draco & GH Besselaar Associates Protocol GHBA-171 Extension (contract supplement)

A 42-Day, Blinded, Parallel Group, Multicenter Study to Compare the Safety and Efficacy of One Dose Level of Budesonide With Placebo and Cortenema in Adult Patients With Distal Ulcerative Colitis/Proctitis

Douglas S. Levine, MD, Principal Investigator, 0% Salary Support

\$38,613/\$44,588 Direct/Total Costs: 12/1/92-6/30/94

Astra Draco & GH Besselaar Associates Protocol GHBA-171 (contract supplement)

A 42-Day, Blinded, Parallel Group, Multicenter Study to Compare the Safety and Efficacy of One Dose Level of Budesonide With Placebo and Cortenema in Adult Patients With Distal Ulcerative Colitis/Proctitis

Douglas S. Levine, MD, Principal Investigator, 0% Salary Support

\$48,553/\$55,875 Direct/Total Costs: 12/1/92-6/30/94

Astra Draco & GH Besselaar Associates Protocol GHBA-170 Extension (contract)

An Open-Label, Multicenter Study to Assess the Long-Term Safety, Tolerability, and Efficacy of Budesonide 2 mg Rectal Retention Enemas in Adult Patients with Distal Ulcerative Colitis/Proctitis

Douglas S. Levine, MD, Principal Investigator, 0% Salary Support

\$41,059/\$43,126 Direct/Total Costs: 5/1/92-6/30/94

**PREVIOUS GRANT AND CONTRACT SUPPORT (at University of Washington) (continued)**

Douglas S. Levine, MD, AGAF, FACG

National Institutes of Health PO1 DK32971-09 (grant)  
Structural and Genomic Changes in the Human GI Mucosa  
Cyrus E. Rubin, MD, Principal Investigator; Douglas S. Levine, MD, Project Leader: Precursors of Colon Cancer  
75%-40% Salary Support  
\$3,733,551/\$5,427,562 Direct/Total Costs: 12/1/88-11/30/93

Astra Draco & GH Besselaar Associates Protocol GHBA-170 (contract)  
A 42-Day Double-Blind Parallel Group Multicenter Study to Compare the Safety and Efficacy of 3 Doses of Budesonide vs  
Placebo in Patients With Distal Ulcerative Colitis/Proctitis  
Douglas S. Levine, MD, Principal Investigator, 0% Salary Support  
\$48,350/\$55,871 Direct/Total Costs: 12/1/91-3/30/93

Sandoz Pharmaceuticals (contract)  
Intravenous Immunoglobulin for Idiopathic Inflammatory Bowel Disease  
Hans Ochs, MD, Principal Investigator; Douglas S. Levine, MD, Co-Investigator, 0% Salary Support  
\$9,823/\$13,394 Direct/Total Costs: 10/1/88-9/30/89

National Institutes of Health PO1 AM32971 (grant)  
Structure and Function of Human GI Mucosa  
Cyrus E. Rubin, MD, Principal Investigator; Douglas S. Levine, MD, Co-Investigator, 75% Salary Support  
\$1,708,064/\$2,493,773 Direct/Total Costs: 7/1/84-11/30/88

National Institutes of Health T32 AM07113 (grant)  
United States Public Health Service Gastroenterology Fellowship Training Grant  
Douglas S. Levine, MD, Trainee, 100% Salary Support  
\$34,595/\$50,509 Direct/Total Costs: 7/1/82-6/30/84