

**Faculty of Medicine of Harvard University
Curriculum Vitae**

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Place of Birth: Boston, MA

Education

1985	AB (<i>cum laude</i>)	Economics	Harvard College
1990	MD	Medicine	University of Massachusetts Medical School
2002	MMSc	Clinical Investigation	Harvard Medical School

Postdoctoral Training

1990 - 1991	Intern	Pediatrics	Johns Hopkins University
1991 - 1993	Resident	Pediatrics	Johns Hopkins University
1993 - 1994	Clinical Fellow	Pediatric Gastroenterology	Boston Children's Hospital, Harvard Medical School
1994 - 1996	Research Fellow	Cell Biology	Boston Children's Hospital
2000 - 2002	Research Fellow	Clinical Investigation	Beth Israel Deaconess Medical Center

Faculty Academic Appointments

07/98 - 03/07	Instructor	Pediatrics	Harvard Medical School
07/03 - 06/12	Adjunct Assistant Professor	Pediatrics	Boston University (Non-Voting)
07/04 - 06/12	Adjunct Assistant Professor	Pediatrics	University of Massachusetts Medical School (Non-Voting)
04/07 -	Assistant	Pediatrics	Harvard Medical School

Present Professor

Appointments at Hospitals/Affiliated Institutions

Past

1993 - 1996	Clinical Fellow in Pediatric Gastroenterology	Medicine (GI/Nutrition)	Boston Children's Hospital
2000 - 2017	Associate Consulting Staff	Medicine	Caritas Norwood Hospital
2003 - 2012	Consulting Staff	Medicine	Boston Medical Center
2004 - 2012	Adjunct Assistant Professor	Medicine	Umass Memorial Medical Center

Current

1998 - Present	Assistant in Medicine	Medicine	Boston Children's Hospital
1998 - Present	Consulting Staff	Medicine	Brigham and Women's Hospital

Other Professional Positions

2015 - 2017	Consultant	Shire Pharmaceuticals	Chair, Data Safety Monitoring Board
2017	Advisory Board Member	Mallinckrodt	Part-Time
2017 - Present	Speaker's Bureau	Abbvie Pharmaceuticals	Intermittent
2018	Consultant	Leutpold Pharmaceuticals	Intermittent
2018 - 2019	Consultant	Sofinnova Partners	Part-Time
2020	Consultant	Orbimed	5 Hours
2020 - Present	Editor	VeryWell	8 Hours per month
2021	Consult	Daiichi Sankyo	10 hours

Major Administrative Leadership Positions

Local

2008 - Present	Director, Harvard Medical School Fellowship in Pediatric Gastroenterology, Hepatology, and Nutrition	Boston Children's Hospital (Medicine, Division of Gastroenterology)
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Committee Service

National

2012 - 2015	Professional Education Committee	North American Society of Pediatric Gastroenterolog
2015 - 2018	Training Committee	North American Society of Peditric Gastroenterology
2018 - 2021	National Scientific Advisory Board 2018 - 2021	Crohn's and Colitis Foundation National Scientific Advisory Committee

Professional Societies

2016 - 2018	North American Society of Pediatric Gastroenterology, Hepatology, and Nutrition 2016 - 2019	Member, Professional Education Committee
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Grant Review Activities

2020 - Present	Department of Defense 2020 - Present	Department of Defense Study Section
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Editorial Activities

Ad hoc Reviewer

Journal of Pediatric Gastroenterology and Nutrition

Journal of Infectious Diseases

Inflammatory Bowel Diseases

American Journal of Gastroenterology

Journal of Clinical Gastroenterology

Journal of Pediatrics

Medical Science Monitor

Expert Opinion on Emerging Drugs

Biomarkers

Scientific Reports

Gastrointestinal Endoscopy

Other Editorial Roles

2010 - Present	Editorial Board Member	<i>Annals of Gastroenterology and Hepatology</i>
2010 - Present	Editorial Board Member	<i>World Journal of Gastrointestinal Physiology</i>
2013 -	Editorial Board Member	<i>World Journal of Gastroenterology</i>

Present

2014 - Present Editorial Review Board Member *Autoimmune Diseases and Therapeutics*

2016 - Present Editorial Review Board Member *The Scientific Pages of Gastroenterology*

2020 - Present Editorial Review Board Member *Case Reports in Pediatrics*

4-6 Articles per month

2021 - Present Editorial Board Member *Gastroenterology Research and Practice*

2-4 articles per month

Honors and Prizes

1981 Robert Winthrop Scholar Harvard College

1985 B.A. Cum Laude in General Studies Harvard College

1985 John Harvard Scholar Harvard College

1990 Hewlett-Packard Award for Academic Excellence University of Massachusetts Medical School

1990 Jacob Brem Award for Excellence in Pediatrics University of Massachusetts Medical School

2011 Excellence in Mentoring HMS Fellowship in Pediatric Gastroenterology Mentoring fellows.

2016 Excellence in Mentoring HMS Fellowship in Pediatric Gastroenterology Mentoring Fellows

2018 Faculty Teaching and Education Award Boston Combined Residency Program Listed as one of the best faculty teachers during the 2017-2018 academic year.

2019 Best in Care Finalist Boston Children's Hospital Best in Care

Report of Funded and Unfunded Projects

Grants and Sponsored Research

Past

1999 - 2000 The Imidazole Agent Clotrimazole Blocks Chloride Secretion in Intestinal Epithelia Through Blockage of Potassium Channels
Glaxo Institute for Digestive Health
PI
The goal of this project was to study the mechanism(s) through which and antifungal

clotrimazole blocks epithelial chloride secretion.

- 1999 - 2001 Treatment of Nelfinavir-induced Secretory Diarrhea with Clotrimazole Administered Orally
Center for Aids Research (CFAR)
PI, Direct Costs: \$20,000
This was a prospective study assessing the safety and efficacy of oral clotrimazole therapy in patients with protease-induced secretory diarrhea
- 1999 - 2001 Treatment of Pouchitis with Clotrimazole Administered Rectally
General Clinical Research Center, Boston Children's Hospital
PI
This was a prospective study evaluating the safety and efficacy of topical clotrimazole, delivered as a suppository, in patients with pouchitis.
- 2003 - 2005 Clinical Efficacy and Safety of mesalamine (CanasaTM/Salofalk) suppositories in the treatment of pediatric ulcerative proctitis: A Multicenter, Open Label, Parallel Group Study
Axcan
Site PI
This was an industry-sponsored and open-label study of Canasa suppositories in the treatment of ulcerative proctitis in children.
- 2003 - 2005 Evaluation of fecal lactoferrin and fecal ASCA as diagnostic parameters for assessing patients suspected of having IBD
TechLab Incorporated
PI
This was a prospective study evaluating the sensitivity and specificity of fecal lactoferrin and ASCA in assessing disease activity in children and young adults with IBD.
- 2004 - 2006 A MultiCenter, Double Blind Study of Colazal in the Treatment of 5-17 Year-Old Pediatric Patients with Mild to Moderate Active Ulcerative Colitis
Salix Pharmaceuticals
Site PI
This was an industry-sponsored, open-label post-marketing study evaluating the safety and efficacy of oral Colazal therapy in children with ulcerative colitis.
- 2010 - 2017 The Natural History of Children with Persistent Gastroesophageal Reflux Disease
AstraZeneca
Co-PI, Direct Costs: \$20,000
This was a retrospective study to assess the long-term outcome of patients diagnosed with gastroesophageal reflux as infants.
- 2010 - 2017 Phase I/II Trial of Topical Clotrimazole Therapy in Pediatric and Adult Patients with Pouchitis
FDA, FD-R-02202
PI, Direct Costs: \$210,000
This was a double-blinded prospective study evaluating the safety and efficacy of topical clotrimazole, delivered as a retention enema, in children and adults with refractory pouchitis.
- 2010 Evaluation of fecal and serum ASCA levels as diagnostic parameters for assessing patients suspected of having inflammatory Bowel disease

Crohn's & Colitis Foundation Of America
 PI
 Assess fecal biomarker responses in patients with IBD.

2017 - 2021 Serial Fecal Biomarker Measurements Predict Response to Biologic Therapy in Children with IBD

Boston Childrens Hospital
 Site PI
 Assess the utility of serial fecal and serum proteins to predict disease activity and response to therapy in patients with IBD.

Current

- 2012 - 2017 Predicting Response to Standardized Pediatric Colitis Therapy (PROTECT)
 NIH, 1U01DK095745-01
 Investigator
 This study will track an inception cohort of newly diagnosed patients with ulcerative colitis to assess both prognostics related to serologic and microbiome profiles as well as response to a standardized therapeutic approach.
- 2017 - 2020 Fecal and Serologic Biomarkers for Use in the Diagnosis and Interval Assessment of Patients with IBD
 TechLab Incorporated
 PI, Direct Costs: \$21,000
 Assess changes in fecal and serum biomarkers in patients with IBD being treated with Remicade
- 2019 - 2020 Oxidation Status as a Predictor of Disease and Response to Therapy in Patients with IBD
 Cure for IBD
 PI, Direct Costs: \$10,000
 Assess the correlation between measurements of fecal redox status and disease activity in patients with IBD.
- 2019 - 2021 Methotrexate Polyglutamate Measurements in Patients with Inflammatory Bowel Disease
 LabCorp
 PI, Direct Costs: \$3,000
 This is a prospective study that will study the relationship between methotrexate dosing and clinical outcome in relation to methotrexate polyglutamate levels.
- 2020 - 2023 Sofia2 Lactoferrin Study
 TechLab
 Site PI
 Assess the reliability of point-of-care measurements of fecal lactoferrin levels.

Projects Submitted for Funding

- Pending Open-Label Induction and Double-Blind Randomized Maintenance Study of Oral CP-690,550 (Tofacitnib) in Children with Moderate to Severe Ulcerative Colitis
 Pfizer
 Site PI
 This prospective intervention study will assess the safety and efficacy of oral tofacitnib

therapy in the treatment of children and adolescents with ulcerative colitis

Pending Open-Label Induction and Maintenance Study of Oral CP-690,550 (Tofacitinib) in Children with Moderately to Severely Active Ulcerative Colitis
Pfizer
Site PI
Assess the efficacy of oral Tofacitinib (Xeljanz) in children and young adults with ulcerative colitis.

Training Grants and Mentored Trainee Grants

2000 - 2004 Clotrimazole Therapy for Human Diarrheal Disease (Completed)
NIH, K23 DK02729
PI
This was a translational project evaluating the efficacy of clotrimazole therapy in the treatment of diarrheal disease.

2016 - 2018 Biomarkers in IBD (Completed)
TechLab Incorporated
Awardee
Assess fecal lactoferrin levels in patients with IBD.

Current Unfunded Projects

2014 - 2016 Active Management of Iron Deficiency Anemia in Patients with IBD
Principle Investigator
This study will evaluate the prevalence of iron deficiency anemia in children and adolescents admitted to the hospital for management of ulcerative colitis

2014 - 2017 Biomarkers in Risk Assessment in Children and Adolescents Completing Colonoscopy
Principle Investigator
This study will review fecal, serologic, and clinical data to predictive a model to assist in risk stratification for children and adolescents undergoing colonoscopy for evaluation of abdominal pain and diarrhea.

2015 - Present Colonoscopy Modeling
PI
The goal of this project is to develop a predictive score to assess the likelihood of a positive (abnormal) finding at the time of initial colonoscopy.

2015 - Present Retrospective Study of Serum Vitamin D in Patients with IBD
PI
The goal of this study is to assess patterns and practices concerning assessment of Vitamin D status in patients with IBD

2016 - 2018 One-Hour Remicade Infusion
PI
This is a prospective study evaluating the safety and efficacy of shortening the infusion time from two to one hours in patients being treated with Remicade for IBD.

2016 - 2020 Effect of parental and child coping on clinical and behavioral outcomes in children with newly diagnosed IBD
Co-Investigator
The goal of this study is to identify coping strategies employed by children and with newly diagnosed IBD and their parents.

2016 - Present	<p>Expedited Remicade Infusion Project PI Assess the safety of reducing the time of Remicade infusions from 2 hours to 1 hour.</p>
2017 - 2019	<p>Retrospective Review of Serum Vitamin D Supplementation and Levels in Patients with IBD PI This is a retrospective study reporting on the prevalence of Vitamin D deficiency in children and adolescents with IBD.</p>
2018 - 2020	<p>High Dose Interval Vitamin D Supplementation in Patients with IBD Receiving Remicade PI Compliance is a major obstacle to long-term dietary supplement. In this study, we will assess the safety and efficacy of high-dose oral Vitamin D therapy in patients with ulcerative colitis and Crohn disease treated with Remicade.</p>
2018 - 2020	<p>Natural History of Patients with Refractory UC Treated with Tacrolimus and Remicade PI This is a retrospective study that will review long-term clinical outcome in patients with steroid-refractory ulcerative colitis who received subsequent rescue therapy with tacrolimus or infliximab.</p>
2019 - 2020	<p>Protein-Losing Enteropathy in the Setting of Severe Iron Deficiency Anemia: A Case Series PI This is a retrospective report of the clinical course and outcome of a population of patients who presented with protein-losing enteropathy in conjunction with iron-deficiency anemia.</p>
2020 - Present	<p>Implementation of High Dose Interval Vitamin D Supplementation in Patients with Inflammatory Bowel Disease Receiving Infliximab or Vedolizuma Co-PI Assess the safety and efficacy of escalating high dose interval Vitamin D therapy in patients with IBD.</p>
2020 - Present	<p>Implementation of High Dose Interval Vitamin D Supplementation in Patients with Inflammatory Bowel Disease Receiving Infliximab or Vedolizumab Co-PI This project will assess the safety and efficacy of providing patients with IBD with interval high-dose Vitamin D therapy.</p>

Report of Local Teaching and Training

Clinical Supervisory and Training Responsibilities

1996 - 1998	<p>Gastroenterology Service Attending. Supervised pediatric resident management hospitalized pediatric patients with a variety of GI diagnoses. Residents</p>	<p>University of Massachusetts Medical Center 10 weeks per year</p>
1998 - Present	<p>Inpatient Service Attending Residents and Fellows</p>	<p>Boston Children's Hospital 8 weeks per year</p>

2000 - Present	One of a group of four Teaching Clinic Preceptors responsible for supervising five clinical fellows. Fellow	Boston Children's Hospital 5%
2007 - Present	Program Director, Harvard Medical School Fellowship in Pediatric Gastroenterology, Hepatology, and Nutrition Fellows	Boston Children's Hospital 20%

Research Supervisory and Training Responsibilities

2009 - Present	Mentored 3-5 students/year in their completion of theses required of their Master's Degree in Medical Science. Pre-Medical Students	Boston Children's Hospital 5 hours/week
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Formally Mentored Harvard Medical, Dental, and Graduate Students

2003 - 2005	Kimberly Ong (Leichtner), Harvard College class of 2005 / High Performing Team Facilitator, University of Pennsylvania, Wharton School of Business <i>Mentoring Role:</i> PI and Primary Mentor <i>Accomplishments:</i> Fecal Calprotectin and the Development of Necrotizing Enterocolitis – Data served as the basis for future studies.
2005 - 2007	Jennifer Wu class of 2007 / Professor and Division Director, UNC Urogynecology and Reconstructive Pelvic Surgery, UNC Health Systems <i>Mentoring Role:</i> PI and Primary Mentor <i>Accomplishments:</i> Natural History of GERD in Children – Poster presentation at 2010 Meetin of the American Gastroenterology Association.
2005 - 2007	Jingshing Wu class of 2007 / Pediatrician, Private Practice, St. Lous, MO <i>Mentoring Role:</i> PI and Primary Mentor <i>Accomplishments:</i> Natural History of GERD in Children – Poster Presentation at the 2010 Annual Meeting of the American Gastroenterology Association
2006 - 2007	Meaghan Colling class of 2007 / Instructor in Pathology, Massachusetts General Hospital <i>Mentoring Role:</i> PI and Primary Mentor <i>Accomplishments:</i> Natural History of GERD in Children – Data resulted in a poster presentation at the 2010 Annual Meeting of the American Gastroenterology Association

Other Mentored Trainees and Faculty

1999 - 2003	Thomas Walker, MD / Associate Professor, Denver Children's Hospital <i>Career Stage:</i> Fellow <i>Mentoring Role:</i> PI/Mentor <i>Accomplishments:</i> Successful publication of manuscript.
2002 - 2003	David Peritz, Boston University class of 2003 / Cardiologist, Salt Lake City, UT <i>Career Stage:</i> Graduate Student <i>Mentoring Role:</i> PI and Primary Mentor <i>Accomplishments:</i> PROTECT Study – Data collected in this study was used to plan future studies.
2002 - 2003	Michelle Land, Boston University class of 2002 / Director of Global Health Economics, Americource Bergen <i>Career Stage:</i> Undergraduate Student <i>Mentoring Role:</i> PI and Primary Mentor <i>Accomplishments:</i> Fecal Lactoferrin in IBD – Walker T, Land ML, Kartashov A, Saslowsky TM, Lyerly DM, Boone JH, Rufo PA. Fecal lactoferrin is a sensitive and

specific marker of disease activity in children and young adults with inflammatory bowel disease. *Journal of pediatric gastroenterology and nutrition*. 2007 Apr 1; 44(4): 414-22. PubMed PMID: 17414136.

- 2006 - 2007 David (Patch) Culbertson, Middlebury College class of 2007 / Vice President of A&R for its record label division,, Big Loud
Career Stage: Undergraduate Student *Mentoring Role:* PI and Primary Mentor
Accomplishments: Natural History of GERD in Children – Data from this project was presented as an abstract at the 2010 Annual Meeting of the American Gastroenterology Association
- 2006 - 2007 Vivian Tang, Brown University School of Medicine class of 2009 / Assistant Professor of Pediatrics, Maimonides Medical Center
Career Stage: Graduate
Accomplishments: Evaluation of fecal ASCA as diagnostic parameters for assessing – Tang V, Valim C, Moman R, Richman A, Zhou J, Ramgopal V, Albert R, Boone JH, Rufo PA. Assessment of Fecal ASCA Measurement as a Biomarker of Crohn Disease in Pediatric Patients. *Journal of pediatric gastroenterology and nutrition*. 2016 Apr 21. PubMed PMID: 27111346..
- 2006 - 2007 Meaghan Colling, MD / Instructor In Pathology, Massachusetts General Hospital
Career Stage: Medical Student *Mentoring Role:* Primary Mentor *Accomplishments:* Completed data collection resulting poster presentation at 2010 annual meeting of the American Gastroenterology Association
- 2007 Dana Sandler, Northeastern University class of 2007 / Physician Assistant in Rheumatology, Boston Children's Hospital
Career Stage: Undergraduate Student *Mentoring Role:* PI and Primary Mentor
Accomplishments: Natural History of GERD in Children – Data from this project was presented as an abstract at the 2010 Annual Meeting of the American Gastroenterology Association
- 2007 - 2009 Peter Townshend, University of Massachusetts, Amherst class of 2009 / Assistant Professor of Pediatrics, Connecticut Children's Hospital
Career Stage: Undergraduate Student *Mentoring Role:* PI and Primary Mentor
Accomplishments: Urinary Isoprostane Measurement in Children with IBD – Data from this project was used in the design of subsequent biomarker studies.
- 2007 - 2009 Saum Ghodoussipour, Boston University class of 2009 / Fellow in Urologic Oncology, University of Southern California
Career Stage: Undergraduate Student *Mentoring Role:* PI and Primary Mentor
Accomplishments: Urinary Isoprostane Measurement in Children with IBD – Data from this project was used in the design of subsequent research studies. He received a Crohn's and Colitis Summer Research Fellowship to complete these studies.
- 2007 - 2009 Veena Ramgopal, Boston University class of 2009 / Pediatric Hospitalist, Texas Children's Hospital
Career Stage: Graduate Student *Mentoring Role:* PI and Primary Mentor
Accomplishments: Fecal ASCA Measurements in Children with IBD – Tang V, Valim C, Moman R, Richman A, Zhou J, Ramgopal V, Albert R, Boone JH, Rufo PA. Assessment of Fecal ASCA Measurement as a Biomarker of Crohn Disease in Pediatric Patients. *Journal of pediatric gastroenterology and nutrition*. 2016 Apr 21. PubMed PMID: 27111346.

- 2008 - 2009 Wen-Hann Tan, MD/PhD / Assistant Professor of Pediatrics, Boston Children's Hospital
Career Stage: Junior Faculty *Mentoring Role:* Primary Research Mentor
Accomplishments: Tan W, Bird LM, Sadhwani A, Barbieri-Welge RL, Skinner SA, Horowitz LT, Bacino CA, Noll LM, Fu C, Hundley RJ, Wink LK, Erickson CA, Barnes GN, Slavotinek A, Jeremy R, Rotenberg A, Kothare SV, Olson H, Poduri A, Nespeca MP, Chu HC, Willen JM, Haas KF, Weeber EJ, Rufo PA. A randomized controlled trial of levodopa in patients with Angelman syndrome. American journal of medical genetics. Part A. 2018 May 1; 176(5): 1099-1107. PubMed PMID: 28944563; PubMed Central PMCID: PMC5867193
- 2009 - 2010 Ashley Richman, Boston University class of 2010 / Resident, Anesthesiology
Career Stage: Graduate Student *Mentoring Role:* PI and Primary Mentor
Accomplishments: Fecal ASCA Measurements in Children with IBD – Tang V, Valim C, Moman R, Richman A, Zhou J, Ramgopal V, Albert R, Boone JH, Rufo PA. Assessment of Fecal ASCA Measurement as a Biomarker of Crohn Disease in Pediatric Patients. Journal of pediatric gastroenterology and nutrition. 2016 Apr 21. PubMed PMID: 27111346.
- 2009 - 2010 Rajat Moman, Boston University class of 2010 / Resident, Anesthesiology and Perioperative Medicine, Mayo Clinic
Career Stage: Graduate Student *Mentoring Role:* PI and Primary Mentor
Accomplishments: Fecal ASCA Measurements in Children with IBD – Tang V, Valim C, Moman R, Richman A, Zhou J, Ramgopal V, Albert R, Boone JH, Rufo PA. Assessment of Fecal ASCA Measurement as a Biomarker of Crohn Disease in Pediatric Patients. Journal of pediatric gastroenterology and nutrition. 2016 Apr 21. PubMed PMID: 27111346.
- 2011 - 2012 Bradley Constant, Stonehill College class of 2012 / Fellow, Pediatric Gastroenterology, Children's Hospital of Colorado
Career Stage: Undergraduate Student *Mentoring Role:* PI and Primary Mentor
Accomplishments: Urinary Isoprostane Measurement in Children with IBD – Data from this study was used in the development of subsequent biomarker studies.
- 2011 - 2012 Cayse Powell, University of Louisville class of 2011 / Obstetrician-Gynecology, High Risk Maternal Fetal Medicine
Career Stage: Graduate Student *Mentoring Role:* PI and Primary Mentor
Accomplishments: Fecal ASCA Measurements in Children with IBD – Poster Presentation "Fecal ASCA Measurements in Children with IBD"
- 2011 - 2012 Meaghan Foster, Bucknell University class of 2011 / Medical Student, University of Massachusetts Medical School
Career Stage: Undergraduate Student *Mentoring Role:* Site PI and Primary Mentor
Accomplishments: PROTECT Study – Multiple manuscripts
- 2012 - 2013 Kellen Mandehr, Boston University class of 2013 / Medical Student, Michigan State University College of Osteopathic Medicine
Career Stage: Graduate Student *Mentoring Role:* PI and Primary Mentor
Accomplishments: Fecal Lactoferrin in IBD – Masters Thesis: "Predictive Utility of Serial Fecal Lactoferrin Measurements in Hospitalized Ulcerative Colitis Patients"
- 2012 - 2013 Priya Rajgopal, Boston University School of Medicine class of 2013 / Chief Resident, Mount Sinai, NY

Career Stage: Graduate

Accomplishments: Fecal Antibody Subtypes Predict Disease Activity in Pediatric Patients with Crohn Disease – This project assessed IgG subtypes levels in the pathogenesis of the intestinal immune response observed in patients with IBD.

- 2014 - 2015 Rachel Mojdehbakhsh, Boston University School of Medicine class of 2015 / Medical Student, Temple University School of Medicine
Career Stage: Graduate
Accomplishments: Serial Fecal ASCA Measurements in the Evaluation of Children with Crohn Disease – This project evaluated measurement of fecal ASCA levels in determining IBD disease type in children with ulcerative colitis and Crohn disease.
- 2014 - 2017 Matthew Egberg, MD / Advanced Fellow, Boston Children's Hospital, Center for IBD
Career Stage: Fellow *Mentoring Role:* PI/Mentor *Accomplishments:* Successful applications to:
 - Health Services Research Fellowship
 - Institute for Healthcare Improvement Fellowship
- 2015 - 2016 Sean Murphy, Boston University class of 2016 / Medical Student, New England School of Osteopathic Medicine
Career Stage: Graduate Student *Mentoring Role:* PI and Primary Mentor
Accomplishments: Predictive Utility of Serial Fecal Lactoferrin Measurements in Hospitalized Patients with Ulcerative Colitis – Completed Masters Thesis: “Changes in Fecal Lactoferrin as a Predictor of Steroid Responsiveness in Pediatric Patients with Ulcerative Colitis”
- 2016 - 2017 Kiki Fockens, Vrije Universiteit, Amsterdam class of 2018 / Pediatric Resident, Vrije Universiteit, Amsterdam
Career Stage: Graduate Student *Mentoring Role:* PI and Primary Mentor
Accomplishments: Vitamin D Status in Pediatric Patients with IBD – Retrospective data that was collected in completion of this project was used to in the design of subsequent Vitamin D investigations
- 2016 - 2017 Timothy Yang, Boston University class of 2017 / Medical Student, Philadelphia College of Osteopathic Medicine
Career Stage: Graduate Student *Mentoring Role:* PI and Primary Mentor
Accomplishments: Vitamin D Prescribing Habits and Clinical Outcome in Pediatric Patients with Inflammatory Bowel Disease – Completed Masters Thesis: “Vitamin D Prescribing Habits and Clinical Outcome in Pediatric Patients with Inflammatory Bowel Disease”
- 2017 - 2018 Diana Zheng, Boston University class of 2018 / Medical Student, Touro College of Osteopathic Medicine
Career Stage: Graduate Student *Mentoring Role:* PI and Primary Mentor
Accomplishments: Interval High Dose Vitamin D Therapy in Patients with Inflammatory Bowel Disease – Thesis: "Interval High Dose Vitamin D Therapy in Patients with Inflammatory Bowel Disease"
- 2017 - 2018 Juliana Zapata, Boston University class of 2018 / Clinical Research Assistant, Brigham and Woman's Hospital
Career Stage: Graduate Student *Mentoring Role:* PI and Primary Mentor
Accomplishments: Serial Biomarkers in Pediatric Patients Treated with Remicade – Completed Masters Thesis: “Serial Changes in Serum and Fecal Biomarker Levels in

Patients with IBD being Treated with Remicade”

- 2017 - 2018 Krishanth Manokaran, Boston University class of 2018 / Medical Student (Entering Fall, 2019), Boston University School of Medicine
Career Stage: Graduate Student *Mentoring Role:* PI and Primary Mentor
Accomplishments: Iron Deficiency in Pediatric Patients with IBD – Completed Masters Thesis: “Clinical Outcomes in the Mangement of Iron Deficiency Anemia in Patients with Inflammatory Bowel Disease”
- 2017 - 2018 Sarah Manely, Boston University class of 2018 / Clinial Trial Associate I, Precision for Medicine
Career Stage: Graduate Student *Mentoring Role:* PI and Primary Mentor
Accomplishments: Iron Deficiency in Hospitalized Pediatric Patients with Ulcerative Colitis – Completed Masters Thesis: “Iron Deficiency Anemia in Hospitalized Patients with Ulcerative Colitis”
- 2017 - 2018 Sarah Rogerson, Boston University class of 2018 / Medical Student, Drexel University College of Medicine
Career Stage: Graduate Student *Mentoring Role:* PI and Primary Mentor
Accomplishments: Fecal and Serologic Biomarkers in Children with Abdominal Pain and Diarrhea – Completed Masters Thesis: “Use of Fecal and Serologic Biomarkers in the Prediction of Clinical Outcome in Children Presenting with Abdominal Pain and/or Diarrhea”
- 2017 - 2019 Giulio Cataldo, Worcester Polytechnical Institute class of 2020 / College Senior, Worcester Polytechnical Institute
Career Stage: Undergraduate Student *Mentoring Role:* PI and Primary Mentor
Accomplishments: Iron Deficiency in Hospitalized Pediatric Patients with Ulcerative Colitis – Developed an Excel algorithm that was modified for use hospital-wide to assist in determining the dose and formulation of IV iron for use in patients with iron-deficiency anemia
- 2017 - 2019 Jennifer Wilson, Boston University class of 2018 / Research Study Coordinator, Boston Children's Hospital
Career Stage: Graduate Student *Mentoring Role:* PI and Primary Mentor
Accomplishments: The Impact of Parental and Child Coping Strategies on Disease Outcomes and Emotional Well-Being in Children with Newly Diagnosed Inflammatory Bowel Disease – “The Impact of Parental and Child Coping Strategies on Disease Mangement and Emotional Well-Being in Children with Newly Diagnosed Inflammatory Bowel Disease”
- 2018 - 2019 Christopher Lyons, Boston University class of 2019 / Medical Student (Entering Fall, 2019), Boston University School of Medicine
Career Stage: Graduate Student *Mentoring Role:* PI and Primary Mentor
Accomplishments: Treatment of Iron Deficiency Anemia in Pediatric Patients with IBD – Completed Thesis: "Active Management of Iron Deficiency Anemia in Patients with Inflammatory Bowel Disease"
- 2018 - 2019 Derek Collins, Boston University class of 2019 / Medical Student (Entering Fall, 2019), Creighton University School of Medicine
Career Stage: Graduate Student *Mentoring Role:* PI and Primary Mentor
Accomplishments: The Impact of Coping Strategies Exercised by Children and Their Families on Clinical Management Disease Outcome and Emotional Well-Being in

Patients with IBD – Completed Masters Thesis: "The Impact of Coping Strategies Exercised by Children and Their Families on Clinical Management Disease Outcome and Emotional Well-Being in Patients with IBD"

- 2018 - 2019 Erika Moxley, Boston University class of 2019 / Medical Student (Entering Fall, 2019)
Career Stage: Graduate Student *Mentoring Role:* PI and Primary Mentor
Accomplishments: Serum and Fecal Biomarker Measurements Predict Response to Biologic Therapy in Children with IBD – Completed Masters Thesis:
- 2018 - 2019 Jessica Lin, Boston University School of Medicine class of 2021 / Medical Student, Boston University School of Medicine
Career Stage: Graduate Student *Mentoring Role:* PI and Primary Mentor
Accomplishments: Tacrolimus and Remicade Outcomes in the Treatment of Acute Severe Colitis – Data Collection
- 2018 - 2019 Jochebed Kim, Boston University School of Medicine class of 2019 / Medical Student
Career Stage: Graduate Student *Mentoring Role:* Thesis Mentor
Accomplishments: Serum and Fecal Inflammatory Biomarkers Predict Response to Infliximab Therapy in Pediatric Patients with IBD – Thesis
- 2018 - 2019 Nathan Weinbren, Boston University class of 2019 / Medical Student (Entering Fall, 2019), UQ Oschner Clinical School
Career Stage: Graduate Student *Mentoring Role:* PI and Primary Mentor
Accomplishments: Oxidation Status as a Predictor of Disease Activity and Response to Therapy in Pediatric Patients with Inflammatory Bowel Disease – Completed Thesis: "Oxidation Status as a Predictor of Disease Activity and Response to Therapy in Pediatric Patients with Inflammatory Bowel Disease"
- 2018 - 2019 Reeder Wells, Boston University class of 2019 / Medical Student (Entering Fall, 2019), UT Southwestern
Career Stage: Graduate Student *Mentoring Role:* PI and Primary Mentor
Accomplishments: High Dose Interval Vitamin D Supplementation in Pediatric Patients with Inflammatory Bowel Disease Receiving Remicade – Completed Masters Thesis: "High Dose Interval Vitamin D Supplementation in Pediatric Patients with Inflammatory Bowel Disease Receiving Remicade"
- 2019 - 2020 Aravindh K. Ajithkumar, Boston University School of Medicine class of 2020 / Medical Student, Drexel University
Career Stage: Graduate Student *Mentoring Role:* Research Mentor
Accomplishments: Oxidation Status as a Predictor of Disease Activity and Response to Therapy in Pediatric Patients with Inflammatory Bowel Disease – Thesis
- 2019 - 2020 Armaan F Mazra, Boston University School of Medicine class of 2020 / Medical Student, Rush Medical College
Career Stage: Graduate Student *Mentoring Role:* Thesis Mentor
Accomplishments: Oxidative Status as a Predictor of Disease Activity and Response to Therapy in Pediatric Patients with Inflammatory Bowel Disease – Thesis
- 2019 - 2020 Brianna Scamby, Boston University School of Medicine class of 2020 / Medical Student, Drexel University College of Medicine
Career Stage: Graduate Student *Mentoring Role:* Thesis Mentor
Accomplishments: Measuring Psychological Well-Being and Quality of Life in Children with Inflammatory Bowel Disease – Thesis

- 2019 - 2020 Camille T. Johansen, Boston University School of Medicine class of 2020 / Medical Student, A.T Still School of Osteopathic Medicine
Career Stage: Graduate Student *Mentoring Role:* Thesis Mentor
Accomplishments: Implementation of High Dose Interval Vitamin D Supplementation in Pediatric Patients with Inflammatory Bowel Disease Receiving Remicade – These
- 2019 - 2020 Jonathan Spaan, Boston University School of Medicine class of 2020 / Research Study Coordinator, Hospital for Special Surgery, New York
Career Stage: Graduate Student *Mentoring Role:* Thesis Mentor
Accomplishments: Treatment of Iron Deficiency in Pediatric Patients with Inflammatory Bowel Disease – Thesis
- 2020 - 2021 Justin Ramos, Boston University School of Medicine class of 2020 / Unit Secretary, Brigham and Women's Hospital
Career Stage: Graduate Student *Mentoring Role:* Thesis Mentor
Accomplishments: Evaluation of Gastrointestinal Oxidation Status As a Predictor For Pediatric Inflammatory Bowel Disease Activity – Thesis
- 2020 - 2021 Montana Ellis, Boston University School of Medicine class of 2021 / Research Assistant, Boston Children's Hospital
Career Stage: Graduate Student *Mentoring Role:* Thesis Mentor
Accomplishments: Effect of Infliximab Therapy on Serum and Fecal Biomarker Levels in Pediatric Patients with Inflammatory Bowel Disease – Thesis
- 2020 - 2021 Peyton Smith, Boston University School of Medicine class of 2020 / Medical Student, Howard University School of Medicine
Career Stage: Graduate Student *Mentoring Role:* Thesis Mentor
Accomplishments: Assessing the Coping Ability of Children Newly Diagnosed with Inflammatory Bowel Disease Through Psychiatric Measures – Thesis

Local Invited Presentations

Those presentations below sponsored by 3rd parties/outside entities are so noted and the sponsor(s) is identified

- 1999 From Bench to Bedside: Potassium channel inhibition of intestinal salt and water secretion / Lecture
Pathology Grand Rounds
Pathology, Wayne State University (Department of Pathology)
- 1999 Evaluation and Management of Abdominal Pain in Children and Adolescents / Oral Presentation
Pediatric Grand Rounds
Pediatrics (Caritas Norwood Hospital)
- 2003 Pouchitis / Grand Rounds
GI Grand Rounds
Gastroenterology, Beth Israel Deaconess Medical Center
- 2003 Managing Constipation in Children: A GI/GU Crossroads / Oral Presentation
Pediatric Urology Grand Rounds
Boston Children's Hospital
- 2004 - 2008 Constipation in Children: Signs and Symptoms for the Practicing Pediatric Urologist / Oral Presentation
Pediatric Urology Grand Rounds

- Urology, Boston Children's Hospital (Boston Children's Hospital)
- 2004 Clotrimazole: "CAPTUREing" a Vulnerable Population / Grand Rounds
- 2005 Topical Clotrimazole for Intestinal Inflammation: Teaching an Old Dog Some New Tricks / Oral Presentation
GI Grand Rounds
Gastroenterology, Beth Israel Deaconess Medical Center
- 2010 Biomarkers in IBD / Lecture
Mount Sinai GI Grand Rounds
Medicine/Gastroenterology, Mount Sinai Hospital (Division of Gastroenterology)
- 2011 Fecal ASCA: A New Marker for IBD / Oral Presentation
GI Research Conference
Gastroenterology, Boston Children's Hospital (Boston Children's Hospital)
- 2011 Office Approach to the Evaluation and Management of Constipation / Oral Presentation
Weekly Conference Series - Westwood Mansfield Pediatrics
- 2011 A Tale of Two Studies / Oral Presentation
Clinical Investigator Training Program
Beth Israel Deaconess Medical Center (Beth Israel Deaconess Medical Center)
- 2011 Topical Clotrimazole Therapy: Lessons Learned from a Drug Development Program / Oral Presentation
Beth Israel Deaconess Medical Center (Beth Israel Deaconess Medical Center)
- 2011 Hindsight is 20/20: Management of A Case of IBD / Oral Presentation
Mortality and Morbidity Conference
Gastroenterology, Boston Children's Hospital (Boston Children's Hospital)
- 2012 Update on NEC / Grand Rounds
- 2013 Fecal Biomarkers in IBD: What They Are, What They Can Do For You / Grand Rounds
- 2013 Biomarkers: A Pathway for Cost-Effective Improvement in Clinical Care / Lecture
Pre-Matriculation Summer Student Program
Harvard Medical School
- 2013 Understanding the Basics of Clinical Trials / Lecture
(Crohn's and Colitis Foundation)
- 2014 Colonic Perforation Status-Post Colonoscopy in Patients with IBD / Oral Presentation
Mortality and Morbidity Conference
Gastroenterology (Boston Children's Hospital)
- 2015 IBD and Neoplasia: Incidence and Surveillance / Oral Presentation
GI Grand Rounds
Boston Children's Hospital (Boston Children's Hospital)

- 2016 Coffee: Beverage or Elixir / Oral Presentation
GI Grand Rounds
Boston Children's Hospital (Boston Children's Hospital)
- 2017 This Too Shall Pass ... / Oral Presentation
Mortality and Morbidity Conference
Boston Children's Hospital (Boston Children's Hospital)
- 2018 Atypical IBD in Clinical Practice / Lecture
Open Pediatrics
- 2018 Dysfunctional Voiding and Constipation / Oral Presentation
Pediatric Urology Grand Rounds
Boston Children's Hospital (Boston Children's Hospital)
- 2018 Iron Deficiency in Patients with IBD / Oral Presentation
IBD Center Conference
Boston Children's Hospital (Center for Inflammatory Bowel Disease)
- 2019 Medical and Surgical Management of Difficult Cases / Panel Discussion
12 Annual IBD: The Art and Science in the Diagnosis and Treatment 2019
Gastroenterology, Boston University
- 2020 Clinical Practice Conference: Best Practices for Working with Advanced Practice
Clinicians / Lecture
- 2021 Biomarkers in IBD: What They Can Tell US and What They Can't / Grand Rounds
Gastroenterology, Boston Children's Hospital

Report of Regional, National and International Invited Teaching and Presentations

Those presentations below sponsored by 3rd parties/outside entities are so noted and the sponsor(s) is identified.

Regional

- 2005 Update on the Diagnosis and Treatment of Inflammatory Bowel Disease in Children /
Oral Presentation - Presenter
Pediatric Grand Rounds - Cape Cod Hospital
Cape Cod Hospital
Hyannis, Alabama (Cape Cod Hospital)
- 2005 Novel Approaches to the Management of Pouchitis / Oral Presentation - Presenter
Pouchitis Support Group
Gastroenterology, Lahey Medical Center
Burlington, Massachusetts (Lahey Medical Center)
- 2008 The How's and Why's of the Medical Management of IBD in Children / Oral Presentation
- Invited Speaker
CCFA Annual Education Conference
University of Chicago
Chicago, Illinois (Crohn's and Colitis Foundation)
- 2008 IBD Medications: What Are They and How Do They Work / Lecture - Author & Presenter

- Crohn's and Colitis Foundation 16th Annual Symposium
Boston, Massachusetts (New England Chapter of the Crohn's and Colitis Foundation)
- 2008 Biosimilars in the Management of Patients with Inflammatory Bowel Diseases: What Do You Know, What Would You Do? / Foundation Sponsored Talk - Presenter
GI Grand Rounds
Gastroenterology, Maimonides Medical Center
New York, New York (France Foundation)
- 2009 The Approach and Management of Fussy Babies. It Takes A Village / Lecture - Author & Presenter
Collaborative Practice in the Care of Children with Gastroenterology, Hepatology & Nutrition Problems
Medicine/Gastroenterology, Boston Children's Hospital
Boston, Massachusetts
- 2009 Biomarkers in GI Disease / Oral Presentation - Presenter
Mount Sinai Division of Gastroenterology Grand Rounds
Boston Children's Hospital
New York, New York (Mount Sinai Division of Gastroenterology)
- 2009 Biomarkers in IBD: What They Are and Why They're Important / Oral Presentation - Presenter
IBD: The Art and Science in the Diagnosis and Treatment 2009
Gastroenterology, Boston University
Boston, Massachusetts (Boston University - Continuing Medical Education)
- 2009 The Approach and Management of Fussy Babies / Oral Presentation - Presenter
It Takes a Village: Collaborative Practice in the Care of Children with Gastroenterology, Hepatology, and Nutritional Problems
Boston Children's Hospital
Boston, Massachusetts (Boston Children's Hospital)
- 2010 IBD Medications in Childhood / Oral Presentation - Author & Presenter
Boston Patient and Family IBD Symposium
Wellesley, Massachusetts (Crohn's and Colitis Foundation)
- 2010 Pouchitis: Prevention, Therapy, and Emerging Therapies / Oral Presentation - Presenter
IBD: The Art and Science in the Diagnosis and Treatment 2010
Boston, Massachusetts (Boston University - Continuing Medical Education)
- 2010 - 2011 Managing Constipation in Children: A User's Guide / Oral Presentation - Presenter
Essential Pediatric Urology for the Primary Care Clinician
Urology, Boston Children's Hospital
Boston, Massachusetts (Boston Children's Hospital)
- 2011 Medical and Surgical Management of Children with IBD / Oral Presentation - Presenter
IBD Family Symposium
Wellesley, Massachusetts (Crohn's and Colitis Foundation)
- 2011 Preventing Post-Operative Recurrence of Crohn Disease / Panel Discussion - Panelist
IBD: The Art and Science in the Diagnosis and Treatment 2011
Boston University
Boston, Massachusetts (Boston University - Continuing Medical Education)

- 2012 Gyn or GI: Constipation and Other GI Issues / Oral Presentation - Presenter
The 30th Annual Pediatric and Adolescent Gynecology Course
Boston, Massachusetts (Boston Children's Hospital)
- 2012 - 2014 A Guide to Diagnosing and Managing Constipation in Children / Oral Presentation - Presenter
Boston, Massachusetts
- 2013 Fecal Biomarkers in IBD / Oral Presentation - Presenter
IBD: The Art and Science in the Diagnosis and Treatment 2013
Boston University
Boston, Massachusetts (Boston University - Continuing Medical Education)
- 2016 Ulcerative Colitis Unresponsive to Steroids: Medicine vs. Surgery / Oral Presentation - Presenter
IBD: The Art and Science in the Diagnosis and Treatment 2016
Boston University
Boston, Massachusetts (Boston University - Continuing Medical Education)
- 2017 Health Supervision in Patients with IBD / Oral Presentation - Moderator
IBD: The Art and Science in the Diagnosis and Treatment 2017
Boston University
Boston, Massachusetts (Boston University - Continuing Medical Education)
- 2017 Constipation in Children with Urologic Symptoms / Oral Presentation - Presenter
Essential Pediatric Urology for the Primary Care Clinician
Urology, Boston Children's Hospital
Boston, Massachusetts (Boston Children's Hospital)
- 2018 Pre and Post-Operative Management of Crohn Disease / Oral Presentation - Moderator
IBD: The Art and Science in the Diagnosis and Treatment 2018
Boston, Massachusetts (Boston University - Continuing Medical Education)
- 2019 IBD Emergencies / Panel Discussion - Moderator
12 Annual IBD: The Art and Science in the Diagnosis and Treatment 2019
Gastroenterology
Boston, Massachusetts
- 2019 Evaluation of Abdominal Pain in the Primary Care Setting / Lecture - Author & Presenter
Advances in Pediatric Health Care 2019
Department of Medicine, Boston Children's Hospital
Boston, Alabama
- National
- 2003 Treating IBD for Complete Mucosal Healing / Point and Counter Point - Panelist
Advances in Pediatric Gastroenterology, Hepatology, and Nutrition 2013
Boston Children's Hospital
Cambridge, Massachusetts (Boston Children's Hospital)
- 2008 Case Studies in Gastroenterology / Oral Presentation - Presenter
PREP the Course
Indianapolis, Indiana
- 2008 Evaluation of Abdominal Pain in Childhood / Oral Presentation - Presenter

- PREP the Course
Indianapolis, Indiana
- 2008 Rescue Therapy for Refractory Ulcerative Colitis in Children / Oral Presentation - Moderator
NASPGHAN Annual Meeting 2008
San Diego, California (North American Society for Pediatric Gastroenterology, Hepatology, and Nutrition)
- 2009 PREP the Course, "Gastroenterology" / Lecture - Author & Presenter
PREP
Indianapolis, Indiana (American Academy of Pediatrics)
- 2009 Case Studies in Gastroenterology / Oral Presentation - Presenter
PREP the Course
Savannah, Georgia
- 2009 Evaluation and Management of Abdominal Pain in Children and Adolescents / Oral Presentation - Presenter
PREP the Course
Savannah, Georgia
- 2011 Neonatal Intestinal Inflammation / Lecture - Author & Presenter
15th Annual "Day with the Newborn"
Medicine/Pediatrics, St. Christopher's Hospital for Children
Philadelphia, Pennsylvania
- 2011 Health Supervision of Children and Adolescents with IBD / Lecture - Author & Presenter
North American Society for Pediatric Gastroenterology, Hepatology, and Nutrition
Orlando, Florida
- 2012 NEC and the Aftermath: Musing from the Perspective of a Pediatric Gastroenterologist. / Lecture - Author & Presenter
Advances in Neonatology
Neonatology, Children's Hospital of Philadelphia
Philadelphia, Pennsylvania
- 2012 Neonatal Intestinal Inflammation / Oral Presentation - Invited Speaker
A Day With the Newborn
Philadelphia, Pennsylvania (St. Christopher's Hospital for Children)
- 2012 Pouchitis / Oral Presentation - Presenter
Advances in Pediatric Gastroenterology, Hepatology, and Nutrition 2012
Boston Children's Hospital
Boston, Massachusetts (Boston Children's Hospital)
- 2012 Intestinal Inflammation in the Neonate / Oral Presentation - Invited Speaker
Advances in Neonatology
Children's Hospital of Philadelphia
Philadelphia, Pennsylvania (Children's Hospital of Philadelphia)
- 2014 Biomarkers in IBD / Oral Presentation - Presenter
Advances in Pediatric Gastroenterology, Hepatology, and Nutrition 2014
Boston Children's Hospital
Cambridge, Massachusetts (Boston Children's Hospital)

- 2014 IBD Medications / Lecture - Author & Presenter
Surgical Section of the American Academy of Pediatrics' 2014 National Conference
San Diego, California
- 2015 Therapeutic Drug Monitoring / Oral Presentation - Presenter
Advances in Pediatric Gastroenterology, Hepatology, and Nutrition 2015
Boston Children's Hospital
Cambridge, Massachusetts (Boston Children's Hospital)
- 2016 Coffee: A Beverage Worth Considering / Oral Presentation - Presenter
Advances in Pediatric Gastroenterology, Hepatology, and Nutrition 2016
Cambridge, Massachusetts (Boston Children's Hospital)
- 2018 Atypical IBD in Clinical Practice / Oral Presentation - Presenter
Advances in Pediatric Gastroenterology, Hepatology, and Nutrition 2018
Boston Children's Hospital
Cambridge, Massachusetts (Boston Children's Hospital)
- 2018 Fecal Lactoferrin Measurements in Clinical Practice / Webinar - Presenter
Boston, Massachusetts (LabRoots)
- 2020 Difficult Pediatric IBD Cases / Lecture - Author & Presenter
Gastroenterology, Boston Children's Hospital
Boston, Massachusetts

International

- 2013 Inflammatory Bowel Disease and Neoplasia in Children / Lecture
Falk Symposium 190: Challenges in the Care of IBD in Patients of All Ages
London, England (Falk Pharmaceuticals)
- 2017 Treatment Modalities of VEO-IBD Successes and Failures / Oral Presentation - Invited
Speaker
5th Elite Pediatric GI
Abu Dhabi, United Arab Emirates (Shaikh Khalifa Medical Center)
- 2017 Health Supervision in Children and Adolescents with IBD / Oral Presentation - Invited
Speaker
5th Elite Pediatrics
Abu Dhabi, United Arab Emirates (Shaikh Khalifa Medical Center)
- 2021 Non-Invasive Surrogate Markers in the Clinical Practice of IBD / Lecture - Author &
Presenter
Taiwan Society of Inflammatory Bowel Disease
Taipei, Taiwan (Taiwan Society of Inflammatory Bowel Disease)

Report of Clinical Activities and Innovations

Current Licensure and Board Certification

- 1990 - Diplomat, American Board of Medical Examiners
Present
- 1999 - Board Certified in Pediatric Gastroenterology
Present
American Board of Pediatrics

2016 - Present	Massachusetts Controlled Substance Massachusetts Department of Public Health
2019	Controlled Substance Certificate US Drug Enforcement Administration
2020 - 2022	Massachusetts Registered Physician Commonwealth of Mass. Board of Registration in Medicine

Practice Activities

1998 - Present	Clinician	CHPA, Boston Children's Hospital	Attending Physician
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Report of Teaching and Education Innovations

SCRIPT Program - Boston Children's Hospital (2019 - Present)	The SCRIPT program pairs URM premedical students from Boston College with clinical faculty at Boston Children's Hospital.
INSPIRE - Boston Children's Hospital (2020 - Present)	The INSPIRE program provides BCH patients with chronic disease with 2-4 hours of virtual tutoring support each week.
All-In - Harvard College (2021 - Present)	The All-In program provides mentoring support to URM Harvard pre-medical undergraduates by pairing them with Harvard physician alumni.
BRIGHT - Boston Children's Hospital (2021 - Present)	The BRIGHT program provides mentored part-time employment opportunities to area high school students interested in pursuing careers in the healthcare field.

Report of Technological and Other Scientific Innovations

Treatment of Severe Distal Colitis (2004 - 2028)	Patent - Awarded The antifungal agent clotrimazole displays both immuno-suppressive and anti-inflammatory properties in-vitro and in-vivo. We demonstrated the safety and efficacy of topical clotrimazole therapy in patients with pouchitis.
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Report of Education of Patients and Service to the Community

Activities

No activities below were sponsored by 3rd parties/outside entities

2011 - Present	Crohn's and Colitis Foundation / Board of Advisors of a Company Member of Chapter Medical Advisory Committee
2021 - Present	University of Massachusetts Medical School / Committee Member Alumni Board Member.

Report of Scholarship

ORCID: 0000-0002-1719-4118

Peer-Reviewed Scholarship in print or other media

Research Investigations

1. Hauser ST, Paul EL, Jacobson AM, Weiss-Perry B, Vieyra MA, **Rufo PA**, Spetter LD, DiPlacido J, Wertlieb D, Wolfsdorf J. How families cope with diabetes in adolescence. An approach and case analyses. *Pediatrician*. 1988 Jan 1; 15(1-2): 80-94. PubMed PMID: 3050924.
2. Lencer W, Moe S, **Rufo PA**, Madara JL. Transcytosis of cholera toxin subunits across model human intestinal epithelia. *Proceedings of the National Academy of Sciences of the United States of America*. 1995 Oct 24; 92(22): 10094-8. PubMed PMID: 7479732; PubMed Central PMCID: PMC40742.
3. **Rufo PA**, Jiang L, Moe SJ, Brugnara C, Alper SL, Lencer W. The antifungal antibiotic, clotrimazole, inhibits Cl⁻ secretion by polarized monolayers of human colonic epithelial cells. *The Journal of Clinical Investigation*. 1996 Nov 1; 98(9): 2066-75. PubMed PMID: 8903326; PubMed Central PMCID: PMC507651.
4. Lencer W, Constable C, Moe S, **Rufo PA**, Wolf A, Jobling MG, Ruston SP, Madara JL, Holmes RK, Hirst TR. Proteolytic activation of cholera toxin and Escherichia coli labile toxin by entry into host epithelial cells. Signal transduction by a protease-resistant toxin variant. *The Journal of biological chemistry*. 1997 Jun 13; 272(24): 15562-8. PubMed PMID: 9182593.
5. **Rufo PA**, Merlin D, Riegler M, Ferguson-Maltzman MH, Dickinson BL, Brugnara C, Alper SL, Lencer W. The antifungal antibiotic, clotrimazole, inhibits chloride secretion by human intestinal T84 cells via blockade of distinct basolateral K⁺ conductances. Demonstration of efficacy in intact rabbit colon and in an in vivo mouse model of cholera. *The Journal of clinical investigation*. 1997 Dec 15; 100(12): 3111-20. PubMed PMID: 9399958; PubMed Central PMCID: PMC508524.
6. Kane SV, Sandborn WJ, **Rufo PA**, Zholudev A, Boone J, Lyerly D, Camilleri M, Hanauer SB. Fecal lactoferrin is a sensitive and specific marker in identifying intestinal inflammation. *The American journal of gastroenterology*. 2003 Jun 1; 98(6): 1309-14. PubMed PMID: 12818275.
7. **Rufo PA**, Lin PW, Andrade A, Jiang L, Rameh L, Flexner C, Alper SL, Lencer W. Diarrhea-associated HIV-1 APIs potentiate muscarinic activation of Cl⁻ secretion by T84 cells via prolongation of cytosolic Ca²⁺ signaling. *American journal of physiology. Cell physiology*. 2004 May 1; 286(5): C998-C1008. PubMed PMID: 15075198.
8. Walker T, Land ML, Kartashov A, Saslowsky TM, Lyerly DM, Boone JH, **Rufo PA**. Fecal lactoferrin is a sensitive and specific marker of disease activity in children and young adults with inflammatory bowel disease. *Journal of pediatric gastroenterology and nutrition*. 2007 Apr 1; 44(4): 414-22. PubMed PMID: 17414136.
9. Manfredi M, Zurakowski D, **Rufo PA**, Walker T, Fox V, Moses MA. Increased incidence of urinary matrix metalloproteinases as predictors of disease in pediatric patients with inflammatory bowel disease. *Inflammatory bowel diseases*. 2008 Aug 1; 14(8): 1091-6. PubMed PMID: 18338781.
10. Salvestrini C, McGrath JA, Ozoemena L, Husain K, Buhamrah E, Sabery N, Leichtner A, **Rufo PA**, Perez-Atayde A, Orteu CH, Torrente F, Heuschkel RB, Thomson MA, Murch SH. Desquamative enteropathy and pyloric atresia without skin disease caused by a novel intracellular beta4 integrin

mutation. *Journal of pediatric gastroenterology and nutrition*. 2008 Nov 1; 47(5): 585-91. PubMed PMID: 18955862.

11. Lexmond WS, **Rufo PA**, Fiebiger E, Lencer W. Electrophysiological Studies into the Safety of the Anti-diarrheal Drug Clotrimazole during Oral Rehydration Therapy. *PLoS neglected tropical diseases*. 2015 Sep 25; 9(9): e0004098. PubMed PMID: 26405813; PubMed Central PMCID: PMC4583490.
12. Levy S, Dedeoglu F, Gaffin J, Garvey K, Harstad E, MacGinnitie A, **Rufo PA**, Huang Q, Ziemnik RE, Wisk L, Weitzman E. A Screening Tool for Assessing Alcohol Use Risk among Medically Vulnerable Youth. *PloS one*. 2016 May 26; 11(5): e0156240. PubMed PMID: 27227975; PubMed Central PMCID: PMC4882018.
13. Tang V, Valim C, Moman R, Richman A, Zhou J, Ramgopal V, Albert R, Boone JH, **Rufo PA**. Assessment of Fecal ASCA Measurement as a Biomarker of Crohn Disease in Pediatric Patients. *Journal of pediatric gastroenterology and nutrition*. 2017 Feb 1; 64(2): 248-253. PubMed PMID: 27111346.
14. Kerur B, Litman HJ, Stern JB, Weber S, Lightdale JR, **Rufo PA**, Bousvaros A. Correlation of endoscopic disease severity with pediatric ulcerative colitis activity index score in children and young adults with ulcerative colitis. *World journal of gastroenterology*. 2017 May 14; 23(18): 3322-3329. PubMed PMID: 28566893; PubMed Central PMCID: PMC5434439.
15. Egberg MD, Galanko J, **Rufo PA**, Mitchell P, Brugnara C. Effectiveness of Oral Iron Supplementation in the Treatment of Anemia Associated with Pediatric Ulcerative Colitis Flare. *Inflammatory Bowel Diseases*. 2018 Jan 18; 24(suppl_1): S52-S52. Available from: <http://dx.doi.org/10.1093/ibd/izy037.013>.
16. Tan W, Bird LM, Sadhwani A, Barbieri-Welge RL, Skinner SA, Horowitz LT, Bacino CA, Noll LM, Fu C, Hundley RJ, Wink LK, Erickson CA, Barnes GN, Slavotinek A, Jeremy R, Rotenberg A, Kothare SV, Olson H, Poduri A, Nespeca MP, Chu HC, Willen JM, Haas KF, Weeber EJ, **Rufo PA**. A randomized controlled trial of levodopa in patients with Angelman syndrome. *American journal of medical genetics. Part A*. 2018 May 1; 176(5): 1099-1107. PubMed PMID: 28944563; PubMed Central PMCID: PMC5867193.
17. Spencer EA, Davis SM, Mack DR, Boyle BM, Griffiths AM, LeLeiko NS, Sauer CG, Keljo DJ, Markowitz JF, Baker SS, Rosh JR, Baldassano RN, Oliva-Hemker M, Pfefferkorn MD, Otley AR, Heyman MB, Noe JD, Patel A, **Rufo PA**, Alison Marquis M, Walters TD, Collins MH, Kugathasan S, Denson LA, Hyams JS, Dubinsky MC. Serologic Reactivity Reflects Clinical Expression of Ulcerative Colitis in Children. *Inflammatory bowel diseases*. 2018 May 18; 24(6): 1335-1343. PubMed PMID: 29718391.
18. Schirmer M, Denson L, Vlamakis H, Franzosa EA, Thomas S, Gotman NM, **Rufo PA**, Baker SS, Sauer C, Markowitz J, Pfefferkorn M, Oliva-Hemker M, Rosh J, Otley A, Boyle B, Mack D, Baldassano R, Keljo D, LeLeiko N, Heyman M, Griffiths A, Patel A, Noe J, Kugathasan S, Walters T, Huttenhower C, Hyams J, Xavier RJ. Compositional and Temporal Changes in the Gut Microbiome of Pediatric Ulcerative Colitis Patients Are Linked to Disease Course. *Cell host & microbe*. 2018 Oct 10; 24(4): 600-610.e4. PubMed PMID: 30308161; PubMed Central PMCID: PMC6277984.

19. Lunstead J, Weitzman E, Harstad E, Dedeoglu F, Gaffin J, MacGinnitie A, **Rufo PA**, Fishman L, Wisk L, Levy S. Screening and Counseling for Alcohol Use in Adolescents With Chronic Medical Conditions in the Ambulatory Setting. 804-806 p.
20. Haberman Y, Karns R, Dexheimer PJ, Schirmer M, Somekh J, Jurickova I, Braun T, Novak E, Bauman L, Collins MH, Mo A, Rosen MJ, Bonkowski E, Gotman N, Marquis A, Nistel M, **Rufo PA**, Baker SS, Sauer CG, Markowitz J, Pfefferkorn MD, Rosh JR, Boyle BM, Mack DR, Baldassano RN, Shah S, Leleiko NS, Heyman MB, Griffiths AM, Patel A, Noe JD, Aronow BJ, Kugathasan S, Walters TD, Gibson G, Thomas SD, Mollen K, Shen-Orr S, Huttenhower C, Xavier RJ, Hyams JS, Denson LA. Ulcerative colitis mucosal transcriptomes reveal mitochondriopathy and personalized mechanisms underlying disease severity and treatment response. *Nature communications*. 2019 Jan 3; 10(1): 38. PubMed PMID: 30604764; PubMed Central PMCID: PMC6318335.
21. Hyams JS, Davis Thomas S, Gotman N, Haberman Y, Karns R, Schirmer M, Mo A, Mack DR, Boyle B, Griffiths AM, LeLeiko NS, Sauer CG, Keljo DJ, Markowitz J, Baker SS, Rosh J, Baldassano RN, Patel A, Pfefferkorn M, Otley A, Heyman M, Noe J, Oliva-Hemker M, **Rufo PA**, Strople J, Ziring D, Guthery SL, Sudel B, Benkov K, Wali P, Moulton D, Evans J, Kappelman MD, Marquis MA, Sylvester FA, Collins MH, Venkateswaran S, Dubinsky M, Tangpricha V, Spada KL, Saul B, Wang J, Serrano J, Hommel K, Marigorta UM, Gibson G, Xavier RJ, Kugathasan S, Walters T, Denson LA. Clinical and biological predictors of response to standardised paediatric colitis therapy (PROTECT): a multicentre inception cohort study. *Lancet (London, England)*. 2019 Apr 27; 393(10182): 1708-1720. PubMed PMID: 30935734; PubMed Central PMCID: PMC6501846.

Other peer-reviewed scholarship

1. **Rufo PA**. IBD in children: the more you look, the more you see.... *Inflammatory bowel diseases*. 2004 May 1; 10(3): 327-8. PubMed PMID: 15290932.
2. Kugathasan S, Dubinsky MC, Keljo D, Moyer MS, **Rufo PA**, Wyllie R, Zachos M, Hyams J. Severe colitis in children. *Journal of pediatric gastroenterology and nutrition*. 2005 Oct 1; 41(4): 375-85. PubMed PMID: 16205502.
3. **Rufo PA**, Bousvaros A. Current therapy of inflammatory bowel disease in children. *Paediatric drugs*. 2006 Jan 1; 8(5): 279-302. PubMed PMID: 17037946.
4. **Rufo PA**, Bousvaros A. Challenges and Progress in Pediatric Inflammatory Bowel Disease. *Current opinion in gastroenterology*. 2007 Jul 1; 23(4): 406-12. PubMed PMID: 17545777.
5. **Rufo PA**, Denson LA, Sylvester FA, Szigethy E, Sathya P, Lu Y, Wahbeh GT, Sena LM, Faubion WA. Health supervision in the management of children and adolescents with IBD: NASPGHAN recommendations. *Journal of pediatric gastroenterology and nutrition*. 2012 Jul 1; 55(1): 93-108. PubMed PMID: 22516861; PubMed Central PMCID: PMC3895471.
6. Leichtner A, Gillis LA, Gupta S, Heubi J, Kay M, Narkewicz MR, Rider E, **Rufo PA**, Sferra TJ, Teitelbaum J. NASPGHAN guidelines for training in pediatric gastroenterology. *Journal of pediatric gastroenterology and nutrition*. 2013 Jan 1; 56 Suppl 1: S1-8. PubMed PMID: 23263531.
7. **Rufo PA**, Egberg MD. Health Care Maintenance in Adolescents with Inflammatory Bowel Disease. *Adolescent medicine: state of the art reviews*. 2016 Apr 1; 27(1): 177-92. PubMed PMID: 27363240.

8. Shouval DS, **Rufo PA**. The Role of Environmental Factors in the Pathogenesis of Inflammatory Bowel Diseases: A Review. *JAMA pediatrics*. 2017 Oct 1; 171(10): 999-1005. PubMed PMID: 28846760.
9. Yasuda JL, **Rufo PA**. Protein-Losing Enteropathy in the Setting of Severe Iron Deficiency Anemia. *Journal of investigative medicine high impact case reports*. 2018 Feb 26; 6: 2324709618760078. PubMed PMID: 29511696; PubMed Central PMCID: PMC5833205.

Non-peer reviewed Scholarship in print or other media

Reviews, chapters, monographs and editorials

1. Inflammatory bowel disease and neoplasia in children: *Digestive Diseases*; 2014 Jun. 455-462 p.
2. Bousvaros A, **Rufo PA**. Commentary [editorial]. *Journal of Pediatric Gastroenterology and Nutrition*. 2018 Apr; 66(4): 557-558. Available from: <http://dx.doi.org/10.1097/mpg.0000000000001891>.

**Co-first/-senior author*

Case reports

1. Fishman DS, Manfredi M, LaBelle JL, Levine JE, Shamberger RC, **Rufo PA**. Pancreatitis as the initial manifestation of stage IV neuroblastoma. *Journal of pediatric gastroenterology and nutrition*. 2007 Jan 1; 44(1): 146-8. PubMed PMID: 17204969.
2. Davis MK, **Rufo PA**, Polyak SF, Weinstein DA. Adalimumab for the treatment of Crohn-like colitis and enteritis in glycogen storage disease type Ib. *Journal of inherited metabolic disease*. 2008 Dec 1; 31 Suppl 3: 505-9. PubMed PMID: 18172743.

Letters to the Editor

1. Hait E, **Rufo PA**. Why good pouches go bad. [editorial]. *Inflammatory bowel diseases*. 2007 Jan 1; 13(1): 116-7. PubMed PMID: 17206647.

Abstracts, Poster Presentations and Exhibits Presented at Professional Meetings

1. Egberg MD, Mitchell PD, Galanko JA, **Rufo PA**. Effectiveness of oral iron supplementation in treatment of anemia associated with pediatric ulcerative colitis flare. *American journal of hematology*. 2018 Sep 28. PubMed PMID: 30264865.

Narrative Report

I am an academic gastroenterologist with an interest in innovation and education. I spent more than 10 years in basic research investigating intestinal epithelial transport and mucosal immunology. I have been the Director of the Harvard Medical School Fellowship in Pediatric Gastroenterology since 2008.

My interest in **therapeutic innovation** began with translational research studies focused on developing treatments managing patients with intestinal inflammation. I discovered that the antifungal antibiotic, clotrimazole, displays anti-inflammatory properties. I secured an Orphan Drug Program award from the FDA and completed a Phase I/II study demonstrating the efficacy of topical clotrimazole therapy. Boston Children's Hospital (BCH) subsequently patented the technology. I carried out an internal

study with staff in our Center for Ambulatory Therapy that demonstrated the safety of shortening infliximab infusion times to one hour. This practice has resulted in six-figure cost savings annually. More recently, my research group has been working with Hematology and Pharmacy staff to develop a standardized approach for the use of parenteral iron therapy in patients with iron-deficiency anemia.

My contributions to **diagnostic innovation** have centered on the developing novel approaches for use in the diagnosis and interval assessment of patients with IBD. Our published findings have demonstrated that fecal lactoferrin, urinary isoprostanes, and fecal ASCA levels can help assess patients with IBD. More recent studies are exploring the potential utility of measuring redox status in the blood, urine, and stool of patients with IBD. Our focus will remain on developing non-invasive technologies that will enhance more cost-effective and prospective clinical care to patients with IBD.

My clinical duties include staffing one clinic per week in our Center for Inflammatory Bowel Disease. I am ward attending on our inpatient GI service for six weeks each year, and I perform diagnostic endoscopies four half-days/month, typically with a trainee. I also precept medical students, residents, and fellows in a weekly half-day ambulatory clinic.

My appointment as Director of our GI Fellowship Program in 2008 has provided me with a venue to impact **innovations in medical education** within our Division. Major changes in our fellowship have included the institution of a Clinician-Innovator curriculum. We have established an oversight infrastructure that supports continual training reassessment and improvement. We have also developed an innovative didactic curriculum based on GI society guidelines. Our training provides our fellows with the skills and experiences necessary to assume leadership roles in research, advocacy, and administration.

I view fellowship and professional education as the engine that drives improvement. I was pleased that my efforts have been recognized by the fellows through my selection as "Faculty Mentor of the Year" in 2011. I have been named to the Boston Combined Residency Program Faculty Teaching Honor Roll for the 2018-2019 and 2020-2021 academic years. This designation means that at least one resident in the program named me as one of the three best clinical teachers they have encountered in their training.

On a broader stage, I have had the opportunity to serve as editor of the UpToDate section on IBD Health Supervision in Children and Adolescents. I have also served on the Fellowship and Professional Education Committees at NASPGHAN. I have played a role in developing NASPGHAN and ACGME-endorsed training standards as well as patient and fellow-directed educational resources. I have served as a member of the National Scientific Advisory Committee for the Crohn's and Colitis Foundation.

I hope to continue to leverage these opportunities to ensure that fellowship education continues to improve in the context of evolving academic and financial challenges.

My experiences as a foster/adoptive parent have made me keenly aware of the considerable structural barriers in our society and medical communities. To that end, I have been working with BCH leadership to develop **innovative programs promoting diversity and inclusion** through the provision of mentorship and educational opportunities to individuals from under-represented minority and financially disadvantaged backgrounds.

(1) The Scribe and Mentoring for Premedical Student (**SCRIPT**) Program pairs premedical students at Boston College with Boston Children's Hospital faculty. Students receive longitudinal mentorship, participate in hospital-wide multi-disciplinary conferences, and build a sense of community through facilitated networking. Our goal is to support these at-risk medical school aspirants by providing them

with the mentorship and encouragement to which they would otherwise not have access.

(2) The Children's Hospital Internship Supporting Academically At-Risk Students (**INSPIRE**) program is the result of a partnership with the Lynch School of Education at Boston College and provides BCH patients with chronic disease with individualized, longitudinal, virtual tutoring support.

(3) The Boston Children's Hospital High School Careers Initiative (**BRIGHT**) Program offers part-time jobs to students from area public high schools interested in pursuing careers in medicine and health-related fields.

Medical innovation challenges us to develop new ways of providing care to our patients in a dynamic health care environment. Innovation in this context can take the form of the development of new therapies or the recruitment of the most diverse community of talented individuals who can think broadly and act boldly. I hope to pass on this premium on education and innovation to our trainees and to nurture in them the empathy to inspire their patients to better understand, cope with, and partner in their care.