

## Matthew Aaron Ciorba, MD

Date: June 7, 2019

### Personal Information:

Male  
Date of Birth: July 31, 1974  
Place of Birth: Neenah, WI

### Citizenship:

United States of America

### Address and Telephone Numbers:

Washington University School of Medicine  
Division of Gastroenterology  
660 S Euclid Ave, Campus Box 8124  
St. Louis, MO 63110  
Office: 314-362-1026; Cell: 314-775-8486; Lab: 314-362-2308

### Present Position:

Associate Professor (effective July 2017)  
Tenure granted March 2017  
Director, Inflammatory Bowel Disease Program  
Director, IBD Research  
Associate Director of GI Fellowship Program and Fellow Research (T32)  
Washington University School of Medicine, St. Louis, Missouri

### Education:

#### ***Undergraduate***

1996 University of Iowa College of Liberal Arts, Iowa City, Iowa  
Bachelor of Science in Exercise Science (with Honors)  
1994 Sofogest Pitiot, Semester abroad via Iowa University Regents, Lyon France

#### ***Graduate:***

2001 University of Iowa College of Medicine, Iowa City, Iowa  
Doctorate of Medicine (with Honors)

#### ***Postgraduate***

July 2001-Jun 2004 Internship and Medicine Residency, Washington University School of Medicine, St. Louis, Missouri  
Jan 2004-Jun 2004 Chief Medical Residency, Washington University School of Medicine/John Cochrane VA Hospital, St. Louis, Missouri  
Jul 2004-Jun 2007 Gastroenterology Fellowship, Washington University School of Medicine, St. Louis, MO  
2007 Clinical IBD Fellowship (Crohn's and Colitis Foundation of America Sponsored)  
IBD Center of Mount Sinai Hospital, NYC, NY

#### ***Post-Doctoral Research Training***

Jan 2005-Jun 2010 Washington University School of Medicine, St. Louis, MO  
Laboratory of William F. Stenson, MD, Division of Gastroenterology  
Advising Mentors: Rodney D. Newberry MD, Thaddeus S. Stappenbeck, MD, PhD,  
Nicholas O. Davidson, MD, DSc.



*Matthew Ciorba MD*

**Subspecialty Clinical Training in Inflammatory Bowel Disease**

Jul 2004-Jun 2007	Washington University Inflammatory Bowel Disease Program, Christian Stone MD, Director
May 2005	AGA/Abbott Investing in the Future of IBD
Oct 2005	The Annenberg Mentoring in IBD program
May 2007	Shire IBD Mentoring Program
2007	Crohn's and Colitis Foundation of America Clinical IBD Fellowship, IBD Center of Mount Sinai Hospital, NYC, NY Maria T Abreu MD, Director

**Academic Positions/Employment: All positions at Washington University in Saint Louis**

2007-2010	Instructor of Medicine
2008-10	Director, Inflammatory Bowel Diseases Clinical Fellowship
2010-Present	Assistant Professor of Medicine
2016-present	Director of Research, Inflammatory Bowel Disease Center
2016-present	Associate Director of GI Fellowship Program and Fellow Research (T32)
2017-present	Director, Inflammatory Bowel Disease Center
2017	Associate Professor of Medicine (tenure effective July 1, 2017)

**University and Hospital Appointments and Committees:**

Attending Physician: Internal Medicine & Gastroenterology at Barnes Jewish Hospital  
 Full member: WUSM Digestive Diseases Research Center (NIDDK supported)  
 Faculty of Graduate School: Division of Biological and Biomedical Sciences  
 Nutrition Obesity Research Center (NORC), Washington University in St. Louis

**Medical Licensure and Board Certification:**

2003-present	Missouri Medical License
2004-2014	American Board of Internal Medicine Certified, Internal Medicine
2007-present	American Board of Internal Medicine Certified, Gastroenterology and Hepatology

**Leadership Training**

- 2014 Department of Medicine Leadership Course (1 week)
- 2016 Academic Medical Leadership Program for Physicians and Scientists (AMLPPS)
- A 6-month Leadership Training Program taught by Washington University's School of Medicine, the Olin Business School and BJC HealthCare designed to
    - Enhance participant knowledge of the vocabulary, concepts, and strategies that are fundamental for success in a leadership role in academic medicine and health care
    - Encourage cross-functional thinking and teamwork through exploring both informal leadership and leadership style
    - Advance personal leadership effectiveness and management capacity through proficiency in eight key areas
  - Required completion of a Team project. My proposed project was selected to be completed by our team of 5 WUMS leaders titled, "Develop a comprehensive Inflammatory Bowel Disease Center"
- 2017-18 American Gastroenterological Association (AGA) Future Leaders Programs
- An 18-month program designed for early- and mid-career GIs who aspire to further develop their leadership skills with an eye toward serving in a key leadership position both within the field and AGA. The program provides extensive training in leadership development, networking with the next generation of AGA leaders and receive mentoring and career-enhancing coaching from experienced AGA leaders.
- 2018 Department of Medicine Advanced Leadership Training Workshop (Aligning and optimizing IBD Clinics)

**Honors and Awards:**

1993	Phi Eta Sigma freshman honor society: executive board
1994	Board of Regents Study abroad scholarship
1994-1996	University of Iowa upperclassman tuition scholarships
1995	National Collegiate Physical Education and Health Awards Winner
1996-1997	American Heart Association: one-year research fellowship
1997	UI College of Medicine: awards for scientific presentations
1997	Iowa Medical Student Research Club: New Researcher Award
1997	UI College of Medicine Research Week: invited presenter
1998	National Institutes of Health: summer research fellowship
1999	UI College of Medicine: awards for scientific presentations
2000	Midwest Dairy Council Research Award and Scholarship
2000	Dr. and Mrs. W. A. Alcorn Scholarship
2000	Alpha Omega Alpha: Honor Medical Society
2001	Romanian Medical Exchange Sponsored Fellowship
2001	William Wilson Award: Excellence in Research and Clinical Medicine
2001	Hoyt Family Award and Scholarship
2002	American College of Gastroenterology/AstraZeneca Senior Fellow Award
2003	Washington University Mentors in Medicine Research Grant Recipient
2005	Annenberg Mentoring in IBD selectee
2005	AGA/Abbott Investing in the Future of IBD award recipient
2006	TAP Pharmaceuticals/Washington University Research Award
2007	American Society for Gastrointestinal Endoscopy Fellow Conference: Top Research Award
2007	CCFA Visiting IBD Fellowship: Mount Sinai Hospital NYC, NY
2007	Crohn's and Colitis Foundation of America Career Development Award
2008	NIH: WUSM DDRCC Pilot and Feasibility Award
2008	AGA Institute: Young Investigator Award/Presenter Tight Junction Symposium Berlin, GE
2008	Global Probiotics Council Inaugural Young Investigator Award (2 awards nationally)
2009	Society for Mucosal Immunology Young Investigator Grant
2010	Digestive Diseases Week International Conference: Intestinal Diseases Session Moderator
2010	NIDDK Clinical Scientist Development Award (KO8)
2012	Central Society for Clinical Research: Early Career Investigator Award
2013	NIH-NIAID/Mucosal Immunology Studies Team Consortium Young Investigator Award
2013-2017	Councilor for the AGA Immunology, Microbiology & Inflammatory Bowel Diseases Section
2014	Distinguished Gastroenterologist, Crohn's and Colitis Foundation of America
2014	F1000Prime: Gastrointestinal Pharmacology Associate Faculty Member
2015	Doris Duke Foundations Clinical Scientist Award Finalist
2015-2017	Crohn's and Colitis Foundation of America National Scientific Advisory Committee (Grants)
2017	AGA Research Awards Panel
2017-2018	American Gastroenterological Association Future Leaders Program

**Editorial Responsibilities**

- 1) **Section Editor:** Current Opinion in Supportive and Palliative Care – Gastrointestinal tract
- 2) **Editorial Board:** Gastroenterology, Journal of Clinical Gastroenterology, Translational Research
- 3) **Contributing Editorial Board:** Gastroenterology, Selected Summaries, Gut
- 4) **Ad hoc Scientific Journal Reviewer :** Journal of Clinical Investigation, Journal of Immunology, AGA Journals [Gastroenterology, Cellular and Molecular Gastroenterology and Hepatology, Clinical Gastroenterology and Hepatology], Inflammatory Bowel Diseases Journal, Journal of Crohn's and Colitis, American Journal of Pathology, British Journal of Pharmacology, Journal of Gastroenterology and Hepatology, Digestive Diseases and Sciences, Radiation Research, Journal of Basic Microbiology, Hospital Practice, American Journal of Clinical Nutrition, Nature Scientific Reports, etc.

**Funding Agency Review Committees****1) Standing member:**

- a) Crohn's and Colitis Foundation of America (2015-2019)
- b) American Gastroenterological Association (2011-2014)
  - i) Travel Awards (2018-present)
  - ii) Institute Research Awards Panel (2018-2020)

**2) NIH**

- |             |   |                      |
|-------------|---|----------------------|
| a) Mar 2015 | NIDDK Digestive Diseases Core Centers Study Section                                 | ZDK1 GRB-8 M2 1      |
| b) Feb 2016 | NIDDK NRSA Fellowship Review Panel  | ZDK1 GRB-2 (M1 & M2) |
| c) Mar 2016 | NIDDK SEP RO1, R21, RO3   | ZDK1 GRB-8 M3        |
| d) Apr 2016 | NIDDK SEP Review Panel  | ZRG1 DKUS L 04       |
| e) Jul 2016 | NIDDK SEP PPG   | ZDK1 GRB-8 (O4) 1    |
| f) Mar 2017 | NIDDK Inflammatory Bowel Disease Genetics Consortium Genetic Research Centers (U01) |                      |
| g) Mar 2017 | NIDDK SEP High Impact, Interdisciplinary Science (RC2)                              | ZDK1 GRB-7 (M6) 1    |
| h) Oct 2017 | AREA Academic Research Enhancement Award (Parent R15)                               |                      |
| i) Mar 2018 | NIDDK Special Emphasis Panel (P01)  | ZDK1 GRB-S M2        |
| j) Nov 2018 | NIDDK SEP RC2   | ZDK1 GRB-K J2 2      |
| k) Oct 2018 | NIDDK Program Project (P01)   | PAR 18-012           |

- 3) **Ad hoc:** NIH as above, Longer Life Foundation, NSPIRES: NASA Scientific Awards, Department of Defense: USAMRMC/CDMRP Scientific Awards, The Swedish Foundation for Strategic Research, Wellcome Trust, NIDDK, Marsden Fund of the Royal Society of New Zealand, Broad Foundation, CCF Venture Program, Mentors in Medicine program Washington University.

**Professional Societies and Organizations:**

2001	Alpha Omega Alpha
2001-2008	American Medical Association
2003-Present	American Gastroenterology Association (AGA) <ul style="list-style-type: none"> <li>- 2010-2014, Education and Training Committee Member</li> <li>- 2010-2017, Session Chair at DDW: IMIBD, GIONC</li> <li>- 2011-2014, 2017-19 Research Awards Committee</li> <li>- 2010-Present, Scientific Abstract Review Committee</li> <li>- 2017-Present Scientific Abstract Review Committee Chair</li> <li>- 2018 AGA Executive Nominating Committee</li> </ul>
2004-2008	American Society for Gastrointestinal Endoscopy
2006-Present	Crohn's and Colitis Foundation of America (CCFA) <ul style="list-style-type: none"> <li>- 2006-Present, Chapter Medical Advisory Committee (Mid-America Chapter)</li> <li>- 2015-Present, National Scientific Advisory Committee</li> </ul>
2010-Present	Gastroenterology Research Group
2017-Present	American College of Gastroenterology

**Meeting or Workshop Chair or Organization Committee:**

April 2010-2017	Crohn's and Colitis Foundation Mid America Patient Education Symposium
Apr 2018-Present	Annual Multidisciplinary Management of IBD CME. Saint Louis, MO Course Chairs: Matthew Ciorba, Deepak Parakkal and Radhika Smith (118 Professional Attendees.
Apr 2018-Present	Crohn's and Colitis Foundation St. Louis Patient & Provider Education Day. Saint Louis, MO Course Organizers: Dan Schneiderjohn (CCF) and Matthew Ciorba
Sep 2018-Present	Washington University Organoid Workshop and Journal Club
May 2019	Organoids and Tissue Engineering Models of Human Disease

**Invited Professorships and Lectureships:*****Extra-institutional***

Feb 2007	University of Iowa Carver College of Medicine GI Grand Rounds; "Indoleamine 2,3 Dioxygenase in Intestinal Inflammation"
Apr 2008	AGA Institute's "Molecular Structure and Function of the Tight Junction: <i>From Basic Mechanisms to Clinical Manifestations</i> "; Harnack House, Berlin, Germany. Young Investigator Invitee participant and presenter.
Sep 2009	Inflammation Research Association: IBD Summit meeting; "Current treatment paradigms in IBD" Moderator Peter Mannon
Feb 2010	CCFA Mid America Chapter Patient Education Symposium; "Inflammatory Bowel Diseases Through the Ages"
Feb 2010	Gastroenterology Grand Rounds: Oregon Health Sciences University; "Probiotics in Gastroenterology: Current and Future Therapeutics"
Mar 2011	CCFA Mid America Chapter Patient Education Symposium; "Nutrition in the Inflammatory Bowel Diseases"
Mar 2012	CCFA Mid America Chapter Patient Education Symposium; "When Biologics No Longer Work"
Mar 2012	GI Grand Rounds: VA University of South Florida; "Probiotics in the Practice of Gastroenterology"
Nov 2012	Medical Grand Rounds; "Crohn's Disease: Diagnosis and Treatment in Primary Care"; Saint Mary's Medical Center, Evansville, IN
Mar 2013	St Luke's Hospital Grand Rounds; "Bacterial Therapy for C.difficile Infection: Probiotics and Fecal Microbiota Transplantation"
Mar 2013	Oklahoma Health Sciences Center; "Indoleamine 2,3 dioxygenase in the gut: A novel epithelial paradigm"
May 2013	Digestive Diseases Week Orlando, FL; Potential of Probiotics As Therapy (Prevention) for Radiation Enteropathy
Oct 2013	American Autoimmune Related Diseases Association Regional Symposium; "Gastroenterology and Autoimmune Disease"
Oct 2013	GI Grand Rounds: University of Alabama Birmingham; "Probiotics in Clinical Practice"
Nov 2013	GI and Nutritional Consequences of Cancer Treatment Conference; The Royal Marsden NHS Foundation Trust London, England; <i>State of the Art Lecture</i> : "Potential of Probiotics to Prevent Radiation Enteropathy"
Dec 2013	CCFA Mid America Chapter Regional CNE Program St Louis, MO; "Management of inflammatory bowel diseases"
Feb 2014	UAMS Gastroenterology Grand Rounds Little Rock, Arkansas; "From bench to bedside: Developing a therapeutic clinical trial with probiotics to prevent radiation enteropathy"
Mar 2014	AGA: Academic Skills Workshop; LaJolla, CA, "Effective Scientific Presentations"
May 2014	Digestive Diseases Week, Chicago, IL; "Using Patient-derived Enteroids to Study Inflammatory Mechanisms"
Sep 2014	NIAID Mucosal Immunology Studies Team Annual Meeting Washington DC; "Indoleamine 2,3 Dioxygenase 1 in the Gut epithelium" <b>AND</b> "Development of an enhanced human gastrointestinal epithelial culture system to facilitate patient-based assays in the study of Paneth cells"
Sep 2014	Probiotics Throughout the Lifespan: Harvard Medical School Boston, MA; "Bench to Bedside: The rational design and FDA approved implementation of a probiotic intervention study to limit gastrointestinal toxicity from cancer chemoradiotherapy"
Nov 2014	CCFA Chicago Illinois Chapter Professional Ed Symposium, Chicago, IL; "Management of inflammatory bowel diseases"
May 2015	DDRCC Midwest Research Alliance Workshop; "Tryptophan Catabolism in Colon Cancer"
Aug 2015	FASEB Summer Research Conf. Gastrointestinal Tract XVI, Steamboat, CO; "Probiotics to prevent GI side effects of cancer therapy"
Sep 2015	NIAID Mucosal Immunology Studies Team Annual Meeting, St Louis, MO; "Indoleamine 2,3 Dioxygenase 1 in the Gut epithelium"

Feb 2016	Theravance, San Francisco, CA; “Clinical Biomarkers of IBD Disease Activity” <b>AND</b> “Metabolic and Microbial Modifiers of Intestinal Inflammation and Cancer”
Mar 2016	UT Southwestern School of Medicine, GI Grand Rounds, Dallas, TX; “FMT for GI Disease” <b>AND</b> “Metabolic and Microbial Modifiers of Intestinal Inflammation and Cancer”
May 2016	CCFA Mid-America Chapter, St. Louis, MO; “IBD Wellness: A Whole Body Approach”
May 2016	Digestive Diseases Week 2016, San Diego, CA; “IMIBD: Inflammation-Associated Gastric and Colon Carcinogenesis Session Summary”
Jun 2016	MASCC/ISOO 2016, Adelaide, Australia; “Probiotics to prevent gastrointestinal toxicity from cancer therapy”
Jun 2016	Macquarie University Neurodegenerative Diseases Research Centre, NSW Australia; “Roles for the Kynurenine Pathway in Digestive Diseases”
Jan 2017	University of Florida; “Improving colon cancer therapy with immune checkpoint inhibitors and probiotic bacteria”
Jan 2017	University of Arizona; “Advancing Colon cancer therapy through targeting IDO1”
Aug 2017	ACG’s IBD School; “How to Think About Immune Suppressive Agents in the Era of Biologics”
Aug 2017	ACG’s IBD School; “Complementary and Alternative Medicine in IBD”
Nov 2017	Society for Integrative Oncology Annual Meeting, Chicago, IL “The role of probiotics in preventing radiation-induced mucositis: a bench to bedside story and call to action”
Mar 2018	Litwin Pioneers in IBD Annual Meeting, New York, NY “TUDCA in Ulcerative Colitis”
May 2018	Midwest Medical Directors Association 2018 Conference, Chesterfield, MO “Risk Prognostication in Inflammatory Bowel Diseases”
Nov 2018	University of Maryland School of Medicine, IBD Grand Rounds, Baltimore, MD; “Fat and IBD: Cause, Consequence or Coincidence?”

### ***Institutional***

Sep 2003	Medicine Grand Rounds, Washington University School of Medicine; “The Emerging Roles and Data Supporting Wireless Capsule Endoscopy”; (Also presented by invitation at the John Cochrane VA Hospital Medicine Grand Rounds April 2004)
Apr 2007	Galaxy of Gastroenterology, Washington University School of Medicine; “A Case of Difficult to Treat Crohn’s: The Role of Smoking in Treating IBD”
Sep 2007	Inflammatory Bowel Disease CME course, Washington University SOM; “Pregnancy and Inflammatory Bowel Disease: What the Clinician Needs to Know”
Oct 2008	Galaxy of Gastroenterology, Washington University School of Medicine; “Probiotics and Antibiotics in the Inflammatory Bowel Diseases”
Oct 2009	Galaxy of Gastroenterology, Washington University School of Medicine; “Non Biologic Therapy in the Inflammatory Bowel Diseases”
Feb 2010	Medicine Grand Rounds, Washington University in Saint Louis; “Probiotics as Therapy in Gastroenterology: Evaluating the Evidence”
Oct 2010	Galaxy of Gastroenterology, Washington University School of Medicine; “Food and Flora: Nutritional and Bacterial Issues in IBD”
Oct 2010	Academic Skills Workshop, Washington University School of Medicine; “Effective Presentation of Biomedical Information”
Jan 2011	Clinical GI Grand Rounds, Washington University School of Medicine; “Investigating Pain: Depression and IBS in the Inflammatory Bowel Diseases”
Sep 2011	Health and Society, University College Washington University School of Medicine; “A modern life: Living with your microbiome”
Nov 2011	Galaxy of Gastroenterology, Washington University School of Medicine; “Irritable Bowel in IBD: Mechanisms and Management”
Jun 2012	Inflammatory Bowel Diseases CME course, Washington University School of Medicine; “Biomarkers and Serologies in the Inflammatory Bowel Diseases”
Oct 2012	Health and Society, University College Washington University School of Medicine; “The microbiota and you: insights into your inner self”

Nov 2012	Medicine Grand Rounds, Washington University School of Medicine; “Bacterial Based Therapies for C. Diff Infection: Is there a promise for Probiotics or Fecal Microbiota Transplantation?”
Nov 2012	Galaxy of Gastroenterology, Washington University School of Medicine; “Probiotics—Ready for Prime Time, or Past their Prime?”
Jun 2013	Inflammatory Bowel Diseases CME course, Washington University School of Medicine; “C. difficile in IBD: Management principles”
Nov 2013	Clinical GI Grand Rounds, Washington University School of Medicine; “Probiotics: Challenges and Triumphs in designing a clinical trial”
Nov 2013	Galaxy of Gastroenterology, Washington University School of Medicine; “Fecal Microbiota Transplantation: Ready For Prime Time?”
Nov 2013	Research GI Grand Rounds, Washington University School of Medicine; “IDO1 and kynurenine pathway metabolites: Functional implications for the normal and diseased gut epithelium”
Oct 2014	GI Research Conference, Washington University School of Medicine; “Targeting Tryptophan Catabolism in Colon Cancer”
Nov 2014	Galaxy of Gastroenterology, Washington University School of Medicine; “Fecal Microbiota Transplantation: IBD and other indications”
Nov 2014	Health and Society, University College Washington University St. Louis; “The microbiota and you: insights into your inner self”
May 2015	Clinical GI Grand Rounds, Washington University School of Medicine; “Fecal Microbiota Transplantation for C.Diff and IBD”
Oct 2015	Evening Medicine Grand Rounds, Washington University School of Medicine; “Fecal Microbiota Transplantation for C.Diff and IBD”
Oct 2015	Research GI Grand Rounds, Washington University School of Medicine; “From bench to bedside: Preclinical Studies and the development of a therapeutic clinical trial with probiotics to prevent radiation enteropathy”
Nov 2015	Galaxy of Gastroenterology, Washington University School of Medicine; “IBD Monitoring: Antibodies, Markers, and Biopsies”
Nov 2015	Health and Society, University College Washington University St. Louis; “The microbiota and you: insights into your inner self”
Oct 2016	Galaxy of Gastroenterology CME; “Biosimilars’: Will the IBD landscape be the same?”
Dec 2016	Research GI Grand Rounds, Washington University School of Medicine; “Targeting Immune checkpoints and amino acid metabolism in colon cancer”
Jan 2017	Center for Regenerative Medicine; “Isolation, culture and experimentation with human derived gut epithelial stem cells”
Oct 2017	Galaxy of Gastroenterology CME; “Biologics for IBD: What's Here, and What’s Coming”
Dec 2017	Research GI Grand Rounds, Washington University School of Medicine; “Radiation and Immunotherapy: A Synergistic Approach to Colon Cancer Therapy”
Jan 2018	Habif Health and Wellness Center at Washington University; “An Introduction to the Microbiome and it’s Practical Applications in Healthcare”
Feb 2018	WUSTL Pancreas SPORE Investigators Meeting: IDO1 and Radiation in GI cancer
Apr 2018	Multidisciplinary Management of IBD: New Advances and Case Studies CME. Saint Louis, MO “Medical Therapy in IBD: Current Options and Concepts”
Dec 2018	WUSM GI Pathophysiology Lecture Series: “Mucosal Immunology & IBD”
April 2019	2 <sup>nd</sup> Annual Multidisciplinary Management of IBD, St. Louis, MO; “Understanding Algorithms in IBD Medical Management”
June 2018	Oncology Division Rounds WUSM: “Save IDO Inhibitors! A role for Tryptophan Metabolism in Colon Cancer”

**Research Support:** (role, title, duration, amount): Chronological order  
Governmental

- 1) PI of project; Ruth L. Kirschstein National Research Service Award, Trainee Research Fellow in GI fellowship (T32)  
Overall PI: Nicholas Davidson MD; Jul 2005-Jun 2007; \$102,310 Salary support and expenses
- 2) PI; NIDDK: WUSM Digestive Diseases Research Core P&F Award; IDO1 in a Chronic Model of Colitis  
May 2008-May 2010; total award \$59,0036 (Direct \$38,840)
- 3) PI: NIDDK, 1K08DK089016 (A0); Indoleamine 2,3 Dioxygenase in Colitis Associated Cancer  
PERCENTILE SCORE 18; Jul 2010-Jun 2015; total award \$719,447.00
- 4) PI; NIH: Kirschstein Loan Repayment Program Recipient; 2009-2011 IDO1 in Colitis
- 5) Award Co-I: NCI P30 CA091842 *Parent Grant* Siteman Cancer Center Pilot Award/NCI Cancer Center, "A randomized controlled trial of a lactobacillus probiotic to prevent GI side effects in patients undergoing chemoradiation for gastrointestinal malignancy" Jul 2013; PI: Parikh (Ciorba co-investigator 5% salary support); \$75,000 Direct; Siteman Cancer Center Pilot Award, PI: Timothy Eberlein; Jul 2013-Jun 2015;
- 6) PI; NIAID U01AI095776 Mucosal Immunology Studies Team Young Investigator Award NIAID; Jul 2013-Dec 2015; total award direct and indirect \$253,000
- 7) PI; NIDDK 1R03DK100737 (A0); "IDO1 in the human gut epithelium"-This study is directed at finding the normal and inducible expression of IDO1 in the gut epithelium; Jan 2014-Dec 2015; total direct \$100,000
- 8) PI: NIDDK: WUSM Digestive Diseases Research Core P&F Award, May 2014-Apr 2015; total award \$75,000 (Direct \$50,000)
- 9) Co-I; NIDDK T32 DK007130 42 Clinical/Laboratory Training Academic Gastroenterology (Davidson, Nicholas PI)  
07/01/2016-6/30/2021 NIDDK \$297,616 Direct Costs/year
- 10) Co-PI; Mucosal Immunology Studies Team Pilot Award NIAID, (Co-PI with Stappenbeck), "Influence of gene-environment interactions on innate immune function"; Dec 2013-Dec 2014; total award direct and Indirect \$152,000 (1 year, no salary support)
- 11) PI; NIH/NCI 1R21CA206039-01 (A0), Probiotics to prevent GI side effects from chemoradiation for abdominal malignancy The overall goal of this proposal is to establish the safety and tolerability of the probiotic *Lactobacillus rhamnosus* GG (LGG) as an agent to reduce gastrointestinal (GI) side effects in patients receiving chemoradiation for GI malignancy. PERCENTILE SCORE: 6 (NCI Primary, NIDDK Secondary) 04/01/2016-03/31/2018, Direct costs: \$239,250; Total Direct and Indirect: \$364,856
- 12) PI; NIH/NIDDK 1R01DK109384-01 (A0), Targeting tryptophan metabolism in colitis associated cancer, Our overall goal is to determine how to best target the IDO1-kynurenine pathway as a novel colitis associated cancer therapy. PERCENTILE SCORE: 10 (New Investigator Status) (NIDDK Primary, NCI & NIAID Secondary);  
5/5/2016-4/30/2021; \$1,125,000 Directs (5 years); Total \$1,715,625 Direct and Indirect Costs
- 13) Co-I; NIAID R01 AI126887 (A0), (Fleckenstein PI, Ciorba Co-I), Molecular Microbiology of Enterotoxigenic *E.coli* Pathogen-Host Interactions PERCENTILE SCORE: 8  
07/01/2016-6/30/2021 \$1,121,021 total directs (non-modular)

Non-Governmental:

Principal Investigator

- 1) PI; American Heart Association Research Fellowship; "Reverse Engineering of a Cardiac Pacemaker Ion Channel"; Jul 1996-June 1997; \$12,000
- 2) PI; Dept. of Medicine Mentors in Medicine Research Award; Capsule endoscopy for obscure GI bleeding; Oct 2002-Jul 2004; \$6,500
- 3) PI; TAP Pharmaceutical/Washington University Digestive Disease Research program grant; Topical Tacrolimus to treat perianal Crohn's disease"; Jul 2006-Jun 2008; \$4,500  
Primary holder of FDA IND for this indication



- 4) PI; Crohn's & Colitis Foundation of America Career Development; IDO1 induction to treat colitis. Jul 2007-Jul 2010; \$262,200.00
- 5) PI; Proctor and Gamble Educational Research Grant, "Smoking as a mediator of intestinal inflammation"; Jul 2007-Jun 2009; \$13,500
- 6) PI; Proctor and Gamble: Research Grant, "IDO in a chronic model of intestinal inflammation"; Jul 2007-Present; \$13,500;
- 7) PI; Global Probiotics Council Young Investigator Award; Probiotics to prevent radiation enteropathy. Jul 2008-Jun 2009; \$50,000 (1 of 2 awards nationally)
- 8) PI; Washington University, Internal Medicine-Gastroenterology Startup Funds
- 9) PI; Central Society for Clinical Research Early Career Development Award; An epithelial specific knockout of IDO1; Mar 2012-Mar 2013; \$10,000; 1 of 6 awards nationally
- 10) PI; VSL International Research Grant; VSL#3 to prevent radiation enteropathy Mar 2012-Mar 2013; \$16,000
- 11) PI; Longer Life Foundation: A clinical Trial of Probiotics as a GI radio-protectant; Oct 2012-Oct 2016; \$60,000, Parag Parikh co-investigator
- 12) PI; Crohn's and Colitis Foundation of America: Senior Research Award; Tryptophan Catabolism in Colitis Associated Cancer; Jan 2016-Dec 2019; total direct \$315,000
- 13) Co-PI; Goldman Sachs Philanthropy Fund: *Translational Phase I Clinical Trial Combining Immunotherapy with Chemoradiation for Patients with Locally Advanced Rectal Cancer*; Mar 2018-Feb 2020; \$173,913 total directs
- 14) PI; Crohn's & Colitis Foundation: Litwin IBD Pioneers Award; Efficacy and Safety Study of TUDCA in Ulcerative Colitis; Jan 2018-Dec 2020; Total Direct \$179,477
- 15) Co-PI; Crohn's and Colitis Foundation: Study of a Prospective Adult Cohort with Inflammatory Bowel Disease (SPARC IBD); Mar 2019-Jun 2021; Total Direct \$140,000

#### Mentored Grants

- 1) NIH/NIDDK T32
  - a) Heba Iskandar MD
  - b) David Alvarado PhD: T32 Minority Supplement, 2015-2017; Pakula Advanced IBD Fellowship, 2018-2019
  - c) Scott McHenry MD
- 2) American College of Gastroenterology
  - a) Heba Iskandar PI total award amount A quantitative assessment of sleep in IBD; \$10,000
  - b) Deepak Parakkal PI, Career Development Award. Triangular Phenotyping of SB Crohn's Disease, Jul 2018 – Jun 2021. \$330,000
- 3) CCFA Summer Research Awards \$3,000 each.
  - a) Yoon-Jung Hyun 2008
  - b) Emily Vivio 2014
  - c) Alexander Khoury 2014
- 4) American Gastroenterology Association Summer Research Awards \$2,500 each
  - a) Emily Vivio 2013
  - b) Alexander Khoury 2014 (Declined as overlap with CCFA Award)
- 5) NIH T35 (\$4000 summer research program)
  - a) Ameet Thaker 2008
  - b) Aaron Zuckerman 2014 and 2015
  - c) Alexander Markov 2015
  - d) Hayley Motowski 2016
- 6) Howard Hughes Research Fellowships
  - a) Ameet Thaker 2009-10 (1 year, \$28,000)
  - b) Jeffrey Marinshaw 2011 Summer \$4,000
- 7) Mentors in Medicine (Department of Medicine, Washington University in Saint Louis)
  - a) Nitin Gupta MD (and CSTAR)

- b) Alexander Lee MD (and CSTAR)
- c) Martin Gregory MD
- 8) Washington University Institute of Clinical and Translational Science
  - a) Parakkal Deepak, MBBS, MS (2017 \$4450)
  - b) Brad Warner, MD (2018 \$5000)

#### Industry Grants Institutional Principal Investigator

1. PI; A Phase 2, Double-blind, Randomized, Placebo-Controlled, Multicenter Study Evaluating the Safety and Efficacy of GS-5745 in Subjects with Moderately to Severely Active Crohn's Disease; (**Gilead**)
2. PI; A Combined Phase 2/3, Double Blind, Randomized, Placebo Controlled, Induction and Maintenance Study Evaluating the Safety and Efficacy of GS 5745 in Subjects with Moderately to Severely Active Ulcerative Colitis; (**Gilead**)
3. PI; A Phase 3, Randomized, Placebo-Controlled, Blinded, Multicenter Study of the Induction and Maintenance of Clinical Response and Remission by Vedolizumab (MLN0002) in Patients with Moderate to Severe Crohn's Disease (C13007); **Sponsor: Takeda Millennium**
4. PI; A Phase 3, Randomized, Placebo-Controlled, Blinded, Multicenter Study of the Induction and Maintenance of Clinical Response and Remission by Vedolizumab (MLN0002) in Patients with Moderate to Severe Ulcerative Colitis (C13006); **Sponsor: Takeda Millennium**
5. PI; A Phase 3, Open-label Study to Determine the Long-Term Safety and Efficacy of Vedolizumab (MLN0002) in Patients with Ulcerative Colitis and Crohn's Disease (C13008); **Sponsor: Takeda Millennium**
6. PI; A Phase 3, Randomized, Placebo-Controlled, Blinded, Multicenter Study of the Induction of Clinical Response and Remission by Vedolizumab in Patients with Moderate to Severe Crohn's Disease (C13011); **Sponsor: Takeda Millennium**
7. PI; A Phase 2B, Multi-Center, Randomized, Double – blind, Parallel Group, Placebo-controlled, Dose Ranging Study Comparing the Efficacy, Safety, and Pharmacokinetics of Intravenous Infusions of ABT – 874 vs. Placebo in Subjects with Moderately to Severely Active Crohn's Disease (Abbott M10-222); **Sponsor: Abbott**
8. PI; Protocol MDX1100-06, A Phase 2, Multi-dose, Double-blind, Placebo-controlled, Randomized, Multicenter Study of MDX-1100 (anti-CXCL10 Human Monoclonal Antibody) in Subjects with Active Ulcerative Colitis; **Sponsor: Medarex**
9. UCB Biopharma SPRL, RA0098, A Multicenter, Open-Label Study To Evaluate The Safe And Effective Use Of An Electro-Mechanical Injection Device (e-Device) For The Subcutaneous Self-Injection Of Certolizumab Pegol Solution By Subjects With Moderate to Severe Active Rheumatoid Arthritis, Active Ankylosing Spondylitis, Active Psoriatic Arthritis, or Moderately to Severely Active Crohn's Disease, PAREXEL Number 225110

#### Patents

Pending/Submitted

- 1) "Lipoteichoic Acid as Adjuvant Therapy for Patients Receiving Radiation Therapy and Chemotherapy." Wash U case number 016566; Co-Inventor with William Stenson
- 2) "A method of diagnosing irritable bowel disease by measuring the abundance of select bacterial strains in fecal samples from a patient and comparing the abundance to a reference sample whereby elevated levels of these strains compared to controls is indicative of irritable bowel disease"; Co-Inventor with Chyi Hsieh

#### Clinical Title and Responsibilities:

2007-Present	Staff Physician, Barnes-Jewish Hospital, Barnes-Jewish Hospital West County
2007-Present	Instructor of Medicine, Division of Gastroenterology, Washington University School of Medicine
2008-Present	Director of IBD Clinical Fellowship, Division of Gastroenterology, Washington University School of Medicine
2010-Present	Assistant Professor of Medicine, Division of Gastroenterology, Washington University School of Medicine
2016-Present	Director of Research, Inflammatory Bowel Disease Center
2016-Present	Associate Director of GI Fellowship Program for Research (T32)

2017-Present	Associate Professor of Medicine, Division of Gastroenterology, Washington University School of Medicine
2017-Present	Director, IBD Clinics

### **Teaching Title and Responsibilities:**

2004	Chief Medicine Resident: John Cochrane VA Hospital <ul style="list-style-type: none"> <li>- Organized the general inpatient and consultative medical service rotations and the conferences for Washington University School of Medicine Resident's, Intern's and Medical Student's at the John Cochrane VA Hospitals.</li> </ul>
2006- 2007	Practice of Medicine Clinical Mentor <ul style="list-style-type: none"> <li>- Washington University School of Medicine 2<sup>nd</sup> year class</li> </ul>
2006-2018	Pathophysiology of Disease: Gastroenterology and Nutrition <ul style="list-style-type: none"> <li>- Small group leader, Washington University School of Medicine 2<sup>nd</sup> year class</li> <li>- Inflammatory Bowel Diseases and Mucosal Immunology Lecturer</li> </ul>
2007-2016	WUSM: Gastroenterology Introductory Lecture Series
2007-2010	WUSM: Division of Medical Education <ul style="list-style-type: none"> <li>- Mentor in Medicine program</li> <li>- Yearly designee as Career Mentor to Wash U IM resident</li> </ul>
2007-2016	Internal Medicine Residency Intern Selection Committee
2007-Current	Fellowship in Gastroenterology Duties <ul style="list-style-type: none"> <li>- GI Fellow in each clinic</li> <li>- Education Committee (For fellowship RRC/ACGME requirements)</li> <li>- Section Leader IBD Lecture Series</li> <li>- Fellowship Research Mentoring Committee</li> <li>- Mentor for Journal Club (recurrent ~3 sessions/year)</li> </ul>
2008-Present	Gastroenterology Fellowship Selection Committee
2010-2016	University College, Health and Society: Topic Lecturer- Microbiome in Health
2011-2012, 2015	Immunology Graduate Program: WUSM <ul style="list-style-type: none"> <li>- Molecular Mechanisms of Disease Course</li> <li>- Section Leader: IBD Pathogenesis and Therapeutic Advances</li> </ul>
2013	Molecular Cell Biology DBBS Program <ul style="list-style-type: none"> <li>- 5068 Discussion Leader</li> </ul>

### **Bibliography:**

#### **Peer Reviewed Manuscripts and Reviews (Underline Denotes Role as Corresponding Author)**

1. **Ciorba MA**, Heinemann SH, Weissbach H, Brot N, Hoshi T: Modulation of potassium channel function by methionine oxidation and reduction. Proc Natl Acad Sci U S A 1997, 94:9932-9937.
2. Avdonin V, Kasuya J, **Ciorba MA**, Kaplan B, Hoshi T, Iverson L: Apoptotic proteins Reaper and Grim induce stable inactivation in voltage-gated K<sup>+</sup> channels. Proc Natl Acad Sci U S A 1998, 95:11703-11708.
3. **Ciorba MA**, Heinemann SH, Weissbach H, Brot N, Hoshi T: Regulation of voltage-dependent K<sup>+</sup> channels by methionine oxidation: effect of nitric oxide and vitamin C. FEBS Lett 1999, 442:48-52.
4. Chen J, Avdonin V, **Ciorba MA**, Heinemann SH, Hoshi T: Acceleration of P/C-type inactivation in voltage-gated K<sup>+</sup> channels by methionine oxidation. Biophys J 2000, 78:174-187.
5. Zhang Y, Wu YK, **Ciorba MA**, Ouyang Q: Significance of antineutrophil cytoplasmic antibody in adult patients with Henoch-Schonlein purpura presenting mainly with gastrointestinal symptoms. World J Gastroenterol 2008, 14:622-626.
6. **Ciorba MA**, Stenson WF: Probiotic therapy in radiation-induced intestinal injury and repair. Ann N Y Acad Sci 2009, 1165:190-194.
7. Ammar T, Kreisel F, **Ciorba MA**, Primary antral duodenal extramedullary plasmacytoma presenting with melena. Clin Gastroenterol Hepatol 2010, 8: A32.
8. **Ciorba MA**, Bettonville EE, McDonald KG, Metz R, Prendergast GC, Newberry RD, Stenson WF: Induction of IDO-1 by immunostimulatory DNA limits severity of experimental colitis. J Immunol 2010, 184:3907-3916.

9. Ha CY, Newberry RD, Stone CD, **Ciorba MA**, Patients with late-adult-onset ulcerative colitis have better outcomes than those with early onset disease. *Clin Gastroenterol Hepatol* 2010, 8:682-687 e681.
10. Packey CD, **Ciorba MA**, Microbial influences on the small intestinal response to radiation injury. *Curr Opin Gastroenterol* 2010, 26:88-94.
11. Williams MD, Ha CY, **Ciorba MA**, Probiotics as therapy in gastroenterology: a study of physician opinions and recommendations. *J Clin Gastroenterol* 2010, 44:631-636.
12. Chen H, Lee A, Bowcock A, Zhu W, Li E, **Ciorba M**, Hunt S, Influence of Crohn's disease risk alleles and smoking on disease location. *Dis Colon Rectum* 2011, 54:1020-1025.
13. Ha CY, Kumar N, Raptis CA, Narra VR, **Ciorba MA**, Magnetic resonance enterography: safe and effective imaging for stricturing Crohn's disease. *Dig Dis Sci* 2011, 56:2906-2913.
14. **Ciorba MA**, *A Gastroenterologist's Guide to Probiotics*. *Clin Gastroenterol Hepatol* 2012, 10:960-968.
15. **Ciorba MA**, Riehl TE, Rao MS, Moon C, Ee X, Nava GM, Walker MR, Marinshaw JM, Stappenbeck TS, Stenson WF: Lactobacillus probiotic protects intestinal epithelium from radiation injury in a TLR-2/cyclo-oxygenase-2-dependent manner. *Gut* 2012, 61:829-838.
16. Iskandar HN, **Ciorba MA**, Biomarkers in inflammatory bowel disease: current practices and recent advances. *Transl Res* 2012, 159:313-325.
17. Gupta NK, Thaker AI, Kanuri N, Riehl TE, Rowley CW, Stenson WF, **Ciorba MA**, Serum analysis of tryptophan catabolism pathway: Correlation with Crohn's disease activity. *Inflamm Bowel Dis* 2012, 18:1214-1220.
18. Kerr TA, **Ciorba MA**, Matsumoto H, Davis VR, Luo J, Kennedy S, Xie Y, Shaker A, Dieckgraefe BK, and Davidson NO: Dextran sodium sulfate inhibition of real-time polymerase chain reaction amplification: a poly-A purification solution. *Inflamm Bowel Dis* 2012, 18:344-348.
19. Thaker AI, Rao MS, Shaker A, **Ciorba MA**, Modeling Colitis-Associated Cancer with Azoxymethane (AOM) and Dextran Sulfate Sodium (DSS). *J Vis Exp* Sept 2012.
20. **Ciorba MA**, Indoleamine 2,3 dioxygenase in Intestinal Disease. *Curr Opin Gastroenterol*. 2013 Mar;29(2):146-52. PubMed PMID: 23283180. PMCID 3686557
21. Thaker AI, Rao MS, Bishnupuri KS, Kerr TA, Foster L, Marinshaw JM, Newberry RD, Stenson WF, **Ciorba MA**, IDO1 Metabolites Activate  $\beta$ -catenin Signaling to Promote Cancer Cell Proliferation and Colon Tumorigenesis in Mice. *Gastroenterology* 2013; 145:416-425 e4.
22. **Ciorba MA**, Kynurenine pathway metabolites: relevant to vitamin B-6 deficiency and beyond. *Am J Clin Nutr* 2013 Oct;98(4):863-4 PMID:23985806[PubMed - in process]
23. Iskandar HI, Cassell B, Kanuri N, Gyawali CP, Gutiérrez A, Dassopoulos T, **Ciorba MA**, Sayuk GS, Tricyclic Antidepressants for Management of Residual Symptoms in Inflammatory Bowel Disease; *J. Clin Gastroenterol*. 2014 May-Jun;48(5):423-9
24. VanDussen KL, Marinshaw JM, Shaikh N, Miyoshi H, Moon C, Tarr PI, **Ciorba MA\***, Stappenbeck TS\* Development of an enhanced human gastrointestinal epithelial culture system to facilitate patient-based assays. *Gut* 2015; 64:911-20 doi: 10.1136/gutjnl-2013-306651. [Epub ahead of print] PMID: 25007816 PMCID: 43005344 *Gut Editor's Choice article*. (\*Co-corresponding authors)
  - a. Highlighted in  
<http://gut.bmj.com/content/64/6/859.long> Editorial commentary by Maria Rescigno  
<http://www.nature.com/nrgastro/journal/vaop/ncurrent/full/nrgastro.2014.140.html>  
And <https://news.wustl.edu/news/Pages/27184.aspx>
25. **Ciorba MA**, Hallemeier CL, Stenson WF, Parikh PJ. Probiotics to prevent gastrointestinal toxicity from cancer therapy: an interpretive review and call to action. *Current opinion in supportive and palliative care*. 2015 Jun;9(2):157-62. PubMed PMID: 25872116.
26. Lee A, Kanuri N, Zhang Y, Sayuk GS, Li E, **Ciorba MA**, IDO1 and IDO2 Non-Synonymous Gene Variants: Correlation with Crohn's Disease Risk and Clinical Phenotype. 2014 Dec 26;9(12): e115848.
27. Santhanam S, Alvarado DM, **Ciorba MA**, Therapeutic targeting of inflammation and tryptophan metabolism in colon and gastrointestinal cancer. *Translational Research* 2015 Aug 3. pii: S1931-5244(15)00251-0. doi: 10.1016/PMID: 26297050
28. Riehl TE, Santhanam S, Foster L, **Ciorba M**, Stenson WF. CD44 and TLR4 mediate hyaluronic acid regulation of Lgr5+ stem cell proliferation, crypt fission and intestinal growth in postnatal and adult mice. *Am J Physiol*

- Gastrointest Liver Physiol. 2015 Dec 1;309(11): G874-87. doi: 10.1152/ajpgi.00123.2015. Epub 2015 Oct 1 PMID:26505972
29. Vivio EE, Kanuri N, Gilbertsen JJ, Monroe K, Dey N, Chen CH, Gutierrez AM, **Ciorba MA**, Vedolizumab Effectiveness and Safety Over the First Year of Use in an IBD Clinical Practice, *J Crohns Colitis*. 2016 Apr;10(4):402-9
  30. Kuhlmann FM, Santhanam S, Kumar P, Luo Q, **Ciorba MA**, Fleckenstein JM, Blood group O-dependent cellular responses to cholera toxin parallel clinical and epidemiological links to severe cholera, *Am J Trop Med Hyg*. 2016 May 9. pii: 16-0161.
  31. Dey N, **Ciorba MA**. Probiotic Gut Bacteria Enhance Cancer Immunotherapy in a Mouse Model of Melanoma. *Gastroenterology*. 2016 Jul;151(1):206-7. doi: 10.1053/j.gastro.2016.05.015. Epub 2016 May 26. PubMed PMID: 27238844.
  32. Patel A, Cassell B, **Ciorba M**, Vivio E, Kumar M, Hasak S, Gyawali P, Sayuk G. Effects of Disturbed Sleep on Gastrointestinal and Somatic Pain Symptoms in IBS. *Aliment Pharmacol Ther*. 2016 Aug;44(3):246-58. doi: 10.1111/apt.13677. Epub 2016 May 30. PMID: 27240555
  33. **Ciorba MA**, Advances in understanding and improving gastrointestinal symptoms during supportive and palliative care: a decade of progress, *Curr Opin Support Palliat Care*. 2016 Jun;10(2):149-51.
  34. Christophi GP, Rengarajan A, **Ciorba MA**. Rectal budesonide and mesalamine formulations in active ulcerative proctosigmoiditis: efficacy, tolerance, and treatment approach. *Clin Exp Gastroenterol*. 2016 May 19; 9:125-30. doi: 10.2147/CEG.S80237. PMID: 27274301; PMCID: PMC4876845.
  35. Cushing KC, Kanuri N, **Ciorba MA**. Pneumococcal Disease in Inflammatory Bowel Disease: Justification to Vaccinate at Diagnosis. *Gastroenterology*. 2016 Aug;151(2):365-6. doi: 10.1053 PubMed PMID: 27375193.
  36. Walker T, **Ciorba M**, Dubberke ER. Reducing Fluoroquinolone Use Is a Key Step in Controlling the Burden of *Clostridium difficile* Infection. *Gastroenterology*. 2017 Aug;153(2):606-607. doi: 10.1053/j.gastro.2017.06.048. Epub 2017 Jun 28. No abstract available. PMID: 28668696
  37. Sheikh A, Rashu R, Begum YA, Kuhlman FM, **Ciorba MA**, Hultgren SJ, Qadri F, Fleckenstein JM. Highly conserved type 1 pili promote enterotoxigenic *E. coli* pathogen-host interactions. *PLoS Negl Trop Dis*. 2017 May 22;11(5):e0005586. doi: 10.1371/journal.pntd.0005586. eCollection 2017 May. PMID: 28531220
  38. Cushing KC, Kanuri N, **Ciorba MA**. Pneumococcal Disease in Inflammatory Bowel Disease: Justification to Vaccinate at Diagnosis. *Gastroenterology*. 2016 Aug;151(2):365-6. doi: 10.1053/j.gastro.2016.06.027. Epub 2016 Jun 30. No abstract available. PMID: 27375193
  39. Patel A, Hasak S, Cassell B, **Ciorba MA**, Vivio EE, Kumar M, Gyawali CP, Sayuk GS. Effects of disturbed sleep on gastrointestinal and somatic pain symptoms in irritable bowel syndrome. *Aliment Pharmacol Ther*. 2016 Aug;44(3):246-58. doi: 10.1111/apt.13677. Epub 2016 May 30. PMID: 27240555
  40. Dey N, **Ciorba MA**. Probiotic Gut Bacteria Enhance Cancer Immunotherapy in a Mouse Model of Melanoma. *Gastroenterology*. 2016 Jul;151(1):206-7. doi: 10.1053/j.gastro.2016.05.015. Epub 2016 May 26. No abstract available. PMID: 27238844
  41. Kuhlmann FM, Santhanam S, Kumar P, Luo Q, **Ciorba MA**, Fleckenstein JM. Blood Group O-Dependent Cellular Responses to Cholera Toxin: Parallel Clinical and Epidemiological Links to Severe Cholera. *Am J Trop Med Hyg*. 2016 Aug 3;95(2):440-3. doi: 10.4269/ajtmh.16-0161. Epub 2016 May 9. PMID: 27162272
  42. Afzali A, **Ciorba MA**, Schwartz DA, Sharaf M, Fourment C, Ritter T, Wolf DC, Shafran I, Randall CW, Kane SV. Challenges in Using Real-world Clinical Practice Records for Validation of Clinical Trial Data in Inflammatory Bowel Disease: Lessons Learned. *Inflamm Bowel Dis*. 2017 Dec 19;24(1):2-4. doi: 10.1093/ibd/izx015. PMID: 29272481 [PubMed - in process]
  43. Braga Neto MB, Gregory M, Piovezani Ramos G, Loftus EV Jr, **Ciorba MA**, Bruining DH, Bazerbachi F, Abu Dayyeh BK, Kushnir VM, Shah M, Collazo-Clavell ML, Raffals LE, Deepak P. De-novo Inflammatory bowel disease after bariatric surgery: a large case series. *J Crohns Colitis*. 2017 Dec 20. doi: 10.1093/ecco-jcc/jjx177. [Epub ahead of print] PMID: 29272375
  44. Park H, Chen B, **Ciorba MA**. Progress in PD-1-based Immunotherapy: New Mechanistic Insight May Provide Expanded Hope for Application to Colon and Gastrointestinal Cancers. *Gastroenterology*. 2017 Oct; 153(4):1162-1163. doi: 10.1053/j.gastro.2017.08.050. Epub 2017 Sep 1. PMID: 28867277

45. A Role for Salivary Peptides in the Innate Defense Against Enterotoxigenic Escherichia coli. Brown JW, Badahdah A, Iticovici M, Vickers TJ, Alvarado DM, Helmerhorst EJ, Oppenheim FG, Mills JC, **Ciorba MA**, Fleckenstein JM, Bullitt E. *J Infect Dis*. 2018 Apr 11;217(9):1435-1441. PMID: 29528423
46. Kumar P, Kuhlmann FM, Chakraborty S, Bourgeois AL, Foulke-Abel J, Tumala B, Vickers TJ, Sack DA, DeNearing B, Harro CD, Wright WS, Gildersleeve JC, **Ciorba MA**, Santhanam S, Porter CK, Gutierrez RL, Prouty MG, Riddle MS, Polino A, Sheikh A, Donowitz M, Fleckenstein JM. Enterotoxigenic Escherichia coli- blood group A interactions intensify diarrheal severity. *The Journal of Clinical Investigation*. May 17, 2018. *In Press* [10.1172/JCI97659](https://doi.org/10.1172/JCI97659)  
*Highlighted in:* <https://medicine.wustl.edu/news/blood-type-affects-severity-of-diarrhea-caused-by-e-coli/>
47. VanDussen KL, Stojmirović A, Li K, Liu TC, Kimes PK, Muegge BD, Simpson KF, **Ciorba MA**, Perrigoue JG, Friedman JR, Towne JE, Head RD, Stappenbeck TS. Abnormal Small Intestinal Epithelial Microvilli in Patients With Crohn's Disease. *Gastroenterology*. 2018 May 18. pii: S0016-5085(18)34561-X. [Epub ahead of print] PMID: 29782846
48. Riehl TE, Alvarado DM, Ee X, Zuckerman, A., Foster, L., Kapoor, V., Thotala, D. **Ciorba, M.A.**, Stenson, W. F. Lactobacillus rhamnosus GG protects the intestinal epithelium from radiation injury through release of lipoteichoic acid, macrophage activation, and the migration of mesenchymal stem cells. *Gut*. 2018 Jun 22. PMID: 29934438
49. Sofia MA, **Ciorba MA**, Meckel K, Lim CK, Guillemin GJ, Weber CR, Bissonnette M, Pekow JR. Tryptophan Metabolism through the Kynurenine Pathway is Associated with Endoscopic Inflammation in Ulcerative Colitis. *Inflamm Bowel Dis*. 2018 Jun 8;24(7):1471-1480. doi: 10.1093/ibd/izy103. PMID: [29796641](https://doi.org/10.1093/ibd/izy103)
50. Wardill HR, Van Seville YZA, **Ciorba MA**, Bowen JM. Prophylactic probiotics for cancer therapy-induced diarrhoea: a meta-analysis. *Curr Opin Support Palliat Care*. 2018 Jun;12(2):187-197. PMID: [29547491](https://doi.org/10.1093/cup/12.2.187)
51. Gregory MH, McKinnon A, Stwalley D, Hippensteel KJ, Loftus EV Jr, **Ciorba MA**, Olsen MA, Deepak P. Anti-Tumor Necrosis Factor Therapy for Inflammatory Bowel Diseases Do Not Impact Serious Infections After Arthroplasty. *J Crohns Colitis*. 2018 Sep 26. doi: 10.1093/ecco-jcc/jyy148. [Epub ahead of print] PMID: [30256926](https://doi.org/10.1093/ecco-jcc/jyy148)
52. McHenry S, Sharma Y, Tirath A, Tsai R, Mintz A, Fraum TJ, Salter A, Browning JD, Flores AG, Davidson NO, Fowler KJ, **Ciorba MA**, Deepak P. Crohn's Disease Is Associated With an Increased Prevalence of Nonalcoholic Fatty Liver Disease: A Cross-Sectional Study Using Magnetic Resonance Proton Density Fat Fraction Mapping. *Clin Gastroenterol Hepatol*. 2019 Mar 12. pii: S1542-3565(19)30256-3. doi: 10.1016/j.cgh.2019.02.045. PMID: [30876963](https://doi.org/10.1016/j.cgh.2019.02.045)
53. Li E, Zhang Y, Tian X, Wang X, Gathungu G, Wolber A, Shiekh SS, Sartor RB, Davidson NO, **Ciorba MA**, Zhu W, Nelson LM, Robertson CE, Frank DN. Influence of Crohn's disease related polymorphisms in innate immune function on ileal microbiome. *PLoS One*. 2019 Feb 28; 14(2):e0213108. doi:10.1371/journal.pone.0213108. eCollection 2019. PMID: [30818349](https://doi.org/10.1371/journal.pone.0213108)
54. Gregory M, Weaver KN, Hoversten P, Hicks SB, Patel D, **Ciorba MA**, Gutierrez AM, Beniwal-Patel P, Palam S, Syal G, Herfarth HH, Christophi G, Raffals L, Barnes EL, Deepak P. Efficacy of Vedolizumab for Refractory Pouchitis of the Ileo-anal Pouch: Results From a Multicenter US Cohort. *Inflamm Bowel Dis*. 2019 Feb 27. pii: izz030. doi: 10.1093/ibd/izz030. [Epub ahead of print] PMID: [30810748](https://doi.org/10.1093/ibd/izz030)
55. Gregory MH, **Ciorba MA**, Deepak P, Christophi GP. Successful Treatment of Pyoderma Gangrenosum with Concomitant Tofacitinib and Infliximab. *Inflamm Bowel Dis*. 2019 Feb 8. doi: 10.1093/ibd/izz015. [Epub ahead of print] No abstract available. PMID: [30753456](https://doi.org/10.1093/ibd/izz015)
56. Bishnupuri KS, Alvarado DM, Khouri AN, Shabsovich M, Chen B, Dieckgraefe BK, **Ciorba MA**. DO1 and Kynurenine Pathway Metabolites Activate PI3K-Akt Signaling in the Neoplastic Colon Epithelium to Promote Cancer Cell Proliferation and Inhibit Apoptosis. *Cancer Res*. 2019 Mar 15; 79(6):1138-1150. doi: 10.1158/0008-5472.CAN-18-0668. Epub 2019 Jan 24. PMID: [30679179](https://doi.org/10.1158/0008-5472.CAN-18-0668)
57. Ferreiro A, Dantas G, **Ciorba MA**. Insights into How Probiotics Colonize the Healthy Human Gut. *Gastroenterology*. 2019 Feb; 156(3):820-822. doi: 10.1053/j.gastro.2019.01.022. Epub 2019 Jan 16. PMID: [30659834](https://doi.org/10.1053/j.gastro.2019.01.022)
58. Gregory MH, McKinnon A, Stwalley D, Hippensteel KJ, Loftus EV Jr, **Ciorba MA**, Olsen MA, Deepak P. Anti-Tumour Necrosis Factor Therapy for Inflammatory Bowel Diseases Do Not Impact Serious Infections after Arthroplasty. *J Crohns Colitis*. 2019 Feb 1;13(2):182-188. doi: 10.1093/ecco-jcc/jyy148. PMID: [30256926](https://doi.org/10.1093/ecco-jcc/jyy148)

**Book Chapters**

1. **Ciorba M** and Brennan B. Endocrine Malignancies in Washington Manual Subspecialty Series of Hematology and Oncology 1<sup>st</sup> edition. Chantler M and Pillot G (eds) Lippincott Williams and Wilkins, Philadelphia Sept 2003
2. **Ciorba M**, Male and Urologic Malignancies in Washington Manual Subspecialty Series of Hematology and Oncology 1<sup>st</sup> edition. Chantler M and Pillot G (eds) Lippincott Williams and Wilkins, Philadelphia Sept 2003
3. **Ciorba M**, Prakash C. Inflammatory Bowel Disorders in Pharmacotherapy of Common Gastrointestinal Disorders; 1<sup>st</sup> edition. Prakash C and Generali J (eds), Lippincott Williams and Wilkins, Philadelphia Feb 2003
4. Paradowski TJ, **Ciorba MA**. Inflammatory Bowel Diseases in Washington Manual Subspecialty Series of Gastroenterology 2<sup>nd</sup> edition; C. Prakash Gyawali (ed) Lippincott Williams and Wilkins, Philadelphia April 2008
5. Ha CY, **Ciorba MA** Inflammatory Bowel Diseases in Washington Manual of Ambulatory Medicine 2<sup>nd</sup> edition, Brisco M, Lieu C, Mullur R (eds) Lippincott Williams and Wilkins, Philadelphia October 2009
6. Iskandar H, **Ciorba MA**. Inflammatory Bowel Diseases in Washington Manual Subspecialty Series of Gastroenterology 3<sup>rd</sup> edition. C. Prakash Gyawali (ed) Lippincott Williams and Wilkins, Philadelphia May 2012
7. Mohabbat A, **Ciorba MA**. Inflammatory Bowel Diseases in Washington Manual of Outpatient Internal Medicine 3<sup>rd</sup> edition. Sateia HF, Defer T (eds) Lippincott Williams and Wilkins, Philadelphia May 2015
8. Alvarado DM, Santhanam S, **Ciorba MA**. Role of kynurenine pathway in gastrointestinal diseases in Targeting the Broadly Pathogenic Kynurenine Pathway; Sandeep Mittal (Ed) Springer NYC, NY November 2015 ISBN-13: 978-3319118697
9. **Ciorba MA**. The Prevention and Treatment of Radiation and Chemotherapy Induced Intestinal Cytotoxicity Mucositis in The Microbiota in Gastrointestinal Pathophysiology; Martin H Floch, Yehuda Ringle and W. Allan Walker (eds) Elsevier 2016 Nov; p383
10. Stenson WF, **Ciorba MA**. Cell Death in Physiology of the Gastrointestinal Tract 6<sup>th</sup> edition. Said H & Ghishan F (eds). Academic Press, Elsevier; San Diego March 2018 ISBN: 978-0-12-815901-9
11. Jason C. Mills, MD, PhD, & **Matthew A. Ciorba, MD**. Gastrointestinal Disease in Pathophysiology of Disease: An Introduction to Clinical Medicine, 8<sup>th</sup> Edition. Hammer, GD and McPhee SJ (Eds.) McGraw-Hill Education

**Invited Publications and Editorials**

1. **Ciorba MA**, Prakash C. Wireless capsule endoscopy in the diagnosis of small bowel Crohn's disease, Inflammatory Bowel Diseases 9(4): 276; Jul 2003
2. **Ciorba MA**. Research poster preparation for the GI fellow: basics and beyond. Gastrointest Endosc 2007, 65:467-468.
3. **Ciorba MA**. Long-Term Outcome of Patients With Crohn's Disease Who Discontinued Infliximab Upon Remission. Practice Update Gastroenterology December 18, 2014
4. Christophi GP, **Ciorba MA**. Lower Dose Infliximab for Ulcerative Colitis: How Low Can We Go and How Much Can be Saved? J Clin Gastroenterol. 2015 May 25. PubMed PMID: 26057322.
5. **Ciorba MA**. Scap and the intestinal epithelial stem cell niche: New insights from lipid biology. J Lipid Res. 2015 Jun 10. PubMed PMID: 26063459.
6. Cushing K, Alvarado DM, **Ciorba MA**. Butyrate and mucosal inflammation: new scientific evidence supports clinical observation Clin Transl Gastroenterol. 2015 Aug 27;6: e108.
7. **Ciorba MA**. Probiotics in Clinical Practice-Pro Viewpoint AGA Perspectives September 2015
8. **Ciorba M**. Correlation Between Concentrations of Fecal Calprotectin and Outcomes of Patients With Ulcerative Colitis in a Phase 2 Trial. Gastroenterology. 2016 Jan;150(1):96-102. doi: 10.1053. for [www.PracticeUpdate.com](http://www.PracticeUpdate.com)

## Video Presentations

1. Azar R, **Ciorba MA**, Jonnalagadda S & Edmundowicz SE. Transgastric Endoscopic Pancreatic Pseudocyst Debridement. DDW 2006. ASGE's Videoforum: "Best Cases of the 2006" award winner

## Abstracts (Selected from >80)

1. **Ciorba, M.** Hoshi, T Methionine oxidation and reduction at potassium channel N-terminus modulates function *Iowa Physiological Society* Dubuque, IA Apr 1997
2. **Ciorba MA**, Heinemann SH, Weissbach H, Brot N, Hoshi T. Modulation of potassium channel function by methionine oxidation and reduction. *Oral presentation at Society for Neuroscience Annual Meeting New Orleans, LA, Oct 1997*
3. Tranel D, **Ciorba MA**, Jondle D, Bechara A. Neural mechanisms for relationships between emotion, memory, and decision-making. *J Neuropsychiatry Clin Neurosci* 11:126-164 P124, February 1999 *Presented at The Society meeting in New Orleans, LA, Jan 1999.*
4. Avdonin V, Kasuya J, **Ciorba MA**, Kaplan B, Hoshi T, Iverson L. Apoptotic proteins Reaper and Grim induce stable inactivation in voltage-gated K<sup>+</sup> channels. *Biophysical Journal* 76 (1): A348-A348 Part 2, Jan 1999, *Presented at Biophysical Society Meeting, Baltimore, MD, Feb 1999. (Also presented at the UI Medical Student Research Day in Apr 1999)*
5. Chen JG., Avdonin V., **Ciorba MA**, Heinemann SH., Hoshi T. Acceleration of P/C-type inactivation in voltage-gated K<sup>+</sup> channels by methionine oxidation. *Biophysical Journal* 78 (1): 1219Pos Part 2, Jan 2000
6. **Ciorba, M.**, Prakash C., Jonnalagadda S., Stone C., Zuckerman G. Diagnostic yield of capsule endoscopy is similar in obscure-occult and obscure-overt gastrointestinal bleeding but diagnoses vary. *American Journal of Gastroenterology*, September 2002, P545. *Presented at the American College of Gastroenterology Annual Meeting in Seattle, WA, Oct 2002. Winner of Presidential Poster Award & the ACG/Astra Zeneca Senior Fellow Award*
7. **Ciorba, M.**, Jonnalagadda S., Zuckerman G., Stone C., Prakash C. Capsule endoscopy: varied outcomes over short-term follow-up. DDW, May, 2003.
8. **Ciorba MA.**, Newberry R., Stenson WF. Induction of Indoleamine 2,3 Dioxygenase Contributes to Protective Effects of Immunostimulatory DNA in Experimental Colitis. DDW, May 2007.
9. Riehl T., **Ciorba MA**, Stappenbeck T., Stenson WF. Radiation-induced Apoptosis is increased in MyD88<sup>-/-</sup> mice and the increase is reversed by PGE<sub>2</sub>. DDW, May 2007.
10. **Ciorba MA**, Newberry RD, Stenson WF. Immunostimulatory DNA induces indoleamine 2,3 Dioxygenase in both epithelial and classic immune cells to contribute to its protective effects in experimental colitis: 2007 Crohn's and Colitis Foundation National Research and Clinical Conference. *Inflammatory Bowel Diseases*, January 2008, 14:1 018
11. **Ciorba MA**, Riehl T., Hyun YH., Stenson WF. Lactobacillus rhamnosus GG prevents radiation induced small intestinal injury in a MyD88 independent, but COX2 dependent manner. DDW, *Gastroenterology*, May 2008.
12. Ha CY, **Ciorba MA**. Late-Onset Ulcerative Colitis: A Historical Analysis of the Washington University Experience. *Am J Gastro*, Sept 2008.
13. Gupta N, Riehl TE, Stenson WF, **Ciorba MA**. Indoleamine 2,3 Dioxygenase Metabolite Ratios Correlate with Crohns Disease Activity. *Gastroenterology* (Abstract) DDW 2009.
14. Kumar N, Ha CY, Narra V, **Ciorba MA**. Magnetic Resonance Enterography Impacts Medical and Surgical decisions in Obstructive Crohn's Disease. *Gastroenterology* (Abstract) DDW 2009.
15. Ha CY, **Ciorba MA**. A Comparative Study of Disease Behavior and Therapeutic Outcomes in Early versus Late Adult Onset Ulcerative Colitis. *Gastroenterology* (Abstract) DDW 2009.
16. Thaker A, Bettonville EE, Stenson WF, **Ciorba MA**. Indoleamine-2,3-dioxygenase-1 Exerts Distinct Non-T-cell Mediated Protective Functions in Acute Colitis. DDW, 2010.
17. Lee A, Gupta N, Stenson WF, **Ciorba MA**. Non-Synonymous Polymorphisms in the Tryptophan Catabolism Pathway: Correlation to Crohn's Disease Risk and Phenotype. DDW, 2010.
18. Thaker AI, Rao MS, Stenson WF, **Ciorba MA**. Suppression of adaptive immune responses by Indoleamine 2,3 Dioxygenase (IDO1) serves protective functions in experimental colitis. *Advances in Inflammatory Bowel Diseases Meeting*, Dec 2010.



19. **Ciorba MA**, Thaker AI, Rao MS, and Stenson WF. The Tryptophan Catabolism Pathway: A novel therapeutic target in colitis associated cancer. DDW, 2011.
20. Kerr TA, **Ciorba MA**, Shaker A, Dieckgraefe B, Davidson NO. Dextran Sodium Sulfate Inhibition of Real-Time PCR Amplification and Reversal with Poly-A Purification of DSS-exposed mRNA. Digestive Diseases Week, 2011.
21. **Ciorba MA**, Rao MS, Riehl TE, Stenson WF. Lactobacillus Probiotic protects intestinal epithelium from radiation injury in TLR2/COX2 dependent manner. Digestive Diseases Week, 2011.
22. Thaker AI, Foster LR, Rao S, Stenson WF, **Ciorba MA**. (2012) Inhibition of IDO1 Reduces Human Colon Cancer Cell Proliferation in Cell Culture and Reduces Tumor Burden in Colitis Associated Cancer Model. *Gastroenterology*, 142: S-27.
23. VanDussen KL, Marinshaw JM, Miyoshi H, **Ciorba MA**, Stappenbeck TS. (2013) Efficient Isolation, Expansion and Differentiation of Human Epithelial Stem Cells From Endoscopic Biopsies of the Gastrointestinal Tract. *Gastroenterology*, 144: S-62-S-63.
24. Iskandar H, Marinshaw JM, Vivio E, Rao S, **Ciorba MA**. (2013) Mo2005 Gut Indoleamine 2,3 Dioxygenase-1 Activity Expression Contributes to Colitis-Associated Anxiety. *Gastroenterology*, 144: S-716-S-717.
25. Iskandar H, Vivio E, Patel A, Sayuk GS, **Ciorba MA**. (2014) Mo1259 Characterization of Sleep Disturbance in Active Crohn's Disease Using Subjective and Objective Measures of Sleep Quality. *Gastroenterology*, 146: S-600.
26. VanDussen K, Miyoshi H, Sonnek N, **Ciorba M**, Stappenbeck T. O-013 Defining the basis of epithelial defects in Crohn's using Intestinal Spheroid Culture. *Inflammatory Bowel Disease*, 2016 Mar; 22 Suppl 1:S1-S80.
27. Emily Vivio, Navya D. Kanuri, Neelendu Dey, Chien-Huan Chen, Alexandra Gutierrez, **Matthew A. Ciorba** Tu1369 Vedolizumab Efficacy and Safety in a Tertiary Care IBD Clinical Practice. *Gastroenterology*, Volume 148 , Issue 4 , S-871 - S-872
28. Srikanth Santhanam, Alexander Khouri, Mark Shabsovich, David Alvarado, Brian K. Dieckgraefe, Kumar S. Bishnupuri, **Matthew A. Ciorba** Sa1977 Kynurenine Metabolic Pathway As a Rational Target for Colorectal Cancer: Defining Its Role in  $\beta$ -Catenin Signaling *Gastroenterology* , Volume 148 , Issue 4 , S-373
29. Yuanhao Zhang, Ellen Li, Grace Gathungu, Shehzad Sheikh, R. Balfour Sartor, Nicholas O. Davidson, **Matthew A. Ciorba**, Ramnik Xavier, and others Sa2003. Influence of Crohn's Disease-Related Genetic Defects in Innate Immune Function on Ileal-Associated Microbiome. *Gastroenterology*, Vol. 150, Issue 4, S429. Published in issue: April 2016
30. David M. Alvarado, Srikanth Santhanam, Alexander Markov, Mark Shabsovich, **Matthew A. Ciorba**. 248 IDO1 Expression Enhances Epithelial Differentiation Along the Secretory Cell Pathway and Alters Gut Microbiota. *Gastroenterology* , Volume 150 , Issue 4 , S60
31. Srikanth Santhanam, Edwin Lim, Mark Shabsovich, David M. Alvarado, Kumar S. Bishnupuri, Gilles Guillemin, **Matthew A. Ciorba** Su1195 Upregulated Pathways and Products of Tryptophan Metabolism is Associated with the Neoplastic Transition in the Colon Epithelium. *Gastroenterology*, Vol. 150, Issue 4, S492
32. Anthony Sofia, **Matthew A. Ciorba**, Katherine Meckel, Edwin Lim, Gilles Guillemin, Marc Bissonnette, Joel Pekow Su1783 Serum Tryptophan Metabolites and Ido1 Expression As Biomarkers of Mucosal Inflammation in Ulcerative Colitis. *Gastroenterology* , Volume 150 , Issue 4 , S549 - S550
33. Santhanam, Srikanth; Alvarado, David; Khouri, Alexander; Dieckgraefe, Brian Bishnupuri, Kumar and **Ciorba, Matthew A**; PD-236 Defining the Signaling Pathways and Functional Role for Kynurenine Metabolites in the Normal and Neoplastic Colon Epithelium. *Inflammatory Bowel Diseases*. 23:S77-S78, February 2017.
34. Baosheng Chen, Srikanth Santhanam, David M. Alvarado, Micah Iticovici, Dinesh Thotala, **Matthew A. Ciorba**; IDO1 Immune Checkpoint Inhibitor Synergizes with Radiation to Enhance Antitumor Effect in Colorectal Cancer in vitro and in Syngeneic Model. *Gastroenterology*, Vol. 152, Issue 5, S42. Published in issue: April 2017
35. Martin H. Gregory, **Matthew A. Ciorba**, Wyndy L. Wiitala, Ryan W. Stidham, Peter D. Higgins, Jason K. Hou, Linda A. Feagins, Shail M. Govani, and Akbar Waljee; IBD Patients with Severe Disease are at Greater Risk of Developing Pneumonia Prior to IBD Diagnosis. *Gastroenterology*, Vol. 152, Issue 5, S781-S78. Published in issue: April 2017
36. Sunaina Khandelwal, Emily Vivio, Rodney D. Newberry, Miles Parkes, **Matthew A. Ciorba**, Chyi-Song Hsieh; Increased and Unique Immunoglobulin Targeted Commensal Bacteria in Active and Inactive Inflammatory Bowel Disease. *Gastroenterology*, Vol. 152, Issue 5, S992. Published in issue: April 2017

37. David M. Alvarado, Srikanth Santhanam, Micah Iticovivi, Baosheng Chen, **Matthew A. Ciorba**; Indoleamine 2,3-Dioxygenase 1 Expression Promotes Epithelial Secretory Cell Differentiation via Aryl Hydrocarbon Receptor. Presented at Crohn's & Colitis Congress 2018, Las Vegas NV
38. Baosheng Chen, Srikanth Santhanam, David M. Alvarado, Micah Iticovivi, Dinesh Thotala, **Matthew A. Ciorba**; Radiation and IDO1-Selective Inhibitor Epacadostat Exhibit Therapeutic Synergy in Colitis Associated Cancer. Presented at Crohn's & Colitis Congress 2018, Las Vegas NV
39. George Christophi, Ted Walker, Gerald Wade, Alex Thomas, Ian Murphy, **Matthew A. Ciorba**, Parakkal Deepak; Utilization of Reactive Drug Level Monitoring in Inflammatory Bowel Disease. Presented at Crohn's & Colitis Congress 2018, Las Vegas NV
40. Lichtenstein GR, **Ciorba MA**, Rogler G, Quirk D, Nduaka CI, Pedersen RD, Lawendy N, Chan G, Su C, Panés J; Tofcitinib for the treatment of ulcerative colitis: analysis of malignancy rates from the OCTAVE clinical programme. 13th Congress of ECCO; Vienna, AT
41. Kristen Seiler, Michael Binkley, David Alvarado, Micah Iticovivi, William Goo, Kelli L. VanDussen, Thaddeus Stappenbeck, Deborah Rubin, Steven George, **Matthew A. Ciorba**, Mark Meacham, Brad W. Warner; Development of Patient-Derived "Small Intestine-on-a-Chip" Microfluidic Devices. Abstract # 2919217 Presented at DDW, Washington D.C. June 2018.
42. Scott A. McHenry, Yeshika Sharma, Richard Tsai, Aaron Mintz, Tyler J. Fraum, Amber Salter, Avegail Flores, Kathryn J. Fowler, Nicholas O. Davidson, **Matthew A. Ciorba**, Parakkal Deepak; Crohn's Disease Patients Have an Increased Risk of Non-alcoholic Fatty Liver Disease: A Case-control Study Using MRI Proton Density Fat Fraction Mapping. Abstract # 2918036 Presented at DDW, Washington D.C. June 2018.
43. Martin H. Gregory, Andrew McKinnon, Dustin Stwalley, Edward V. Loftus, K. J. Hippensteel, **Matthew A. Ciorba**, Margaret A. Olsen, Parakkal Deepak; Anti-TNF Inhibitors are not Associated with Increased Risk of Infection After Joint Replacement Surgery. Abstract # 2920451 Presented at DDW, Washington D.C. June 2018.
44. Martin H. Gregory, Andrew McKinnon, Dustin Stwalley, Edward V. Loftus, K. J. Hippensteel, **Matthew A. Ciorba**, Margaret A. Olsen, Parakkal Deepak; Outcomes After Joint Replacement Surgery in Patients with Inflammatory Bowel Disease. Abstract # 2920720 Presented at DDW, Washington D.C. June 2018.
45. Lichtenstein GR, **Ciorba MA**, Rogler G, Quirk D, Nduaka CI, Pedersen RD, Lawendy N, Chan G, Su C, Panés J. Tofacitinib for the treatment of ulcerative colitis: analysis of malignancy rates from the OCTAVE clinical program. Abstract # PFI91235g as poster at DDW, Washington D.C. June 2018.
59. Gary R. Lichtenstein, Matthew A. Ciorba, Gerhard Rogler, Daniel Quirk, Chudy I. Nduaka, Ronald D. Pedersen, Nervin Lawendy, Gary Chan, Chinyu Su, Julian Panes. Tofacitinib for the Treatment of Ulcerative Colitis: Analysis of Malignancy Rates from the Octave Clinical Program. *Gastroenterology*; Vol. 154, Iss. 6, Supp. 1; May 2018, pp S385-386 [https://doi.org/10.1016/S0016-5085\(18\)31587-7](https://doi.org/10.1016/S0016-5085(18)31587-7)
60. Sofia MA, **Ciorba MA**, Meckel K, Lim CK, Guillemin GJ, Weber CR, Bissonnette M, Pekow JR. Tryptophan Metabolism through the Kynurenine Pathway is Associated with Endoscopic Inflammation in Ulcerative Colitis. *Inflamm Bowel Dis*. 2018 May 22. doi: 10.1093/ibd/izy103. [Epub ahead of print]
61. Chiplunker A, **Ciorba MA**, Impact of a Standardized Reporting System for Magnetic Resonance Enterography on Small Bowel Crohn's Disease Management. Poster presentation at ACG in Philadelphia, PA. Oct. 2018.
62. Liu JJ, **Ciorba MA**. Small Bowel Innate Immune Activation Predicts Clinical Response to Vedolizumab Therapy in Crohn's Disease Presidential Symposium ACG in Philadelphia, PA. Oct. 2018.
63. Liu JJ, Abraham, BP; Khan, F; Shen B; Gordon I; Davis, EM; Young K; **Ciorba MA**; Glover, SC; Osterman, M. Predicting Clinical Response to Vedolizumab Therapy in Crohn's Disease with Mucosal Biomarker of Innate Immune Activation. Oral Abstract# LB04 Presented at UEG Week 2018; Vienna, Austria

**Research and Academic Mentoring of Undergraduate, Medical, Graduate Students and Post-Doctoral Scholars****a. Christina (Tina) Y Ha MD, Fellow in Gastroenterology**

Project Title: Differential Therapeutic Requirements in Early vs. Senescent Onset Ulcerative Colitis

Initiation Date/Status: Fall 2008

Outcomes: Abstracts ACG 08, DDW 09 papers accepted at Journal of Clinical Gastro and Clinical Gastroenterology and Hepatology. Present/Levinson Advanced IBD fellow Mount Sinai Hospital NYC. Faculty appointment to Johns Hopkins School of Medicine, Gastroenterology. Current Position: Asst Prof of Med, Assoc. Director, UCLA [Center for Inflammatory Bowel Diseases](#)

**b. Michael D Williams MD, Fellow in Gastroenterology/IBD rotating fellowship**

Project Title: Probiotics as therapy in gastroenterology: a study of physician opinions and recommendations

Initiation Date/Status: Spring 2008

Outcomes: Paper in Journal of Clinical Gastroenterology

**c. TJ Paradowski MD, Resident in Internal Medicine**

Dates 2007-8: Outcomes: GI fellowship at St Louis University School of Medicine

Publications: Inflammatory Bowel Diseases in Washington Manual Subspecialty Series of Gastroenterology 2nd edition, C. Lippincott Williams and Wilkins, Philadelphia April 2008.

**d. Nitin Gupta MD, Resident in Internal Medicine**

Project Title: Serologic Correlation of Indoleamine 2,3 Dioxygenase Activity with Human Crohn's Disease

Initiation Date/Status: Fall 2008, IRB Approved, Awarded Washington University Mentors in Medicine Grant and Dr. Gupta accepted into the Clinical Scientist Training and Research Program

Outcomes: Abstract DDW 2009. GI fellowship Harvard/MGH, Current Position as Assistant Professor of Medicine and Director of Inflammatory Bowel Diseases at the University of Mississippi School of Medicine.

**e. Yoon-Jung Hyun, Washington University undergraduate student**

Project Title: Assessing the Role and mechanism of Lactobacillus Rhamnus in protection against radiation induced intestinal injury

Initiation Date/Status: Summer Fellowship recipient of CCFA award, Abstract presented to Digestive Diseases Week 2008

Outcome: Graduate School, Columbia University

**f. Ameet I Thaker Washington University School of Medicine Student**

Project Title: Smoking as a Mediator of Intestinal Inflammation

Initiation Date/Status: Awarded NIDDK summer fellowship, Awarded 1 year HHMI Research Fellowship with successful completion of MA/MD combined program. 4 Abstracts, 1 manuscript published 2 manuscripts in preparation.

Pathology Residency at University of Washington School of Medicine

**g. Alexander Lee Resident in Internal Medicine**

Project: IDO SNP's in Crohns

Awards: MIM and CSTAR

Outcome: Abstract at DDW 2010, 2 Manuscripts, GI Fellowship at UC San Francisco

**h. Nitin Kumar Resident in Internal Medicine**

Project: MRE in Crohns, 2009-11

Awards: MIM and CSTAR (Gywali as PI), AGA Outcomes Research

Outcome: ACG and DDW abstract, 1 manuscript. GI fellowship: Harvard/Brigham

**i. Jeffery Marinshaw, Washington University in Saint Louis Undergraduate**

Project: Manipulating the microbiome: Alternative approaches to intestinal radioprotection

Awards: Bio 500 and Howard Hughes Summer Research Fellowship

Outcome: Peer reviewed manuscripts in GUT and Gastro. Full-time technician 5/12 to 7/13. Full tuition Distinguished Alumni Scholarship to Washington University in St Louis School of Medicine

- j. Heba Iskandar, Fellow in Gastroenterology WUSM**  
 Primary Clinical mentor in IBD 2010-2013  
 Masters of Science in Clinical Investigation: Primary Mentor  
 T32 NIH Research Fellowship: Co-Primary Mentor  
 Outcomes: CCFA advanced clinical fellowship in IBD, several original abstracts, 1 book chapter, 1 review article, 1 original manuscript. Accepted position at Emory University Medical School as Assistant Professor of Medicine and Director of IBD research.
- k. Navya Kanuri, IM Resident St Luke's Hospital**  
 Research Mentor in IBD research 2011-2015  
 Outcomes: 3 articles published, GI Fellowship Washington University. CCFA visiting IBD fellowship at the University of Chicago.
- l. Emily Vivio: Washington University Undergraduate**  
 Research Mentor in IBD research 5/2012-present  
 Outcomes: 3 meeting abstracts. CCFA Summer Research and AGA summer research Fellowship. SURF Award
- m. Alexander Khoury: Washington University Undergraduate**  
 Research Mentor in IBD research 5/2013-present. Project title: IDO1 and the intestinal epithelium  
 outcomes: Bio 500, CCFA research fellowship and AGA student research fellowship. SURF Award. 2 DDW Abstracts
- n. Arya Mohabbat MD: Fellow in Gastroenterology**  
 2012-13: Mohabbat A, Ciorba MA. Inflammatory Bowel Diseases in Washington Manual of Outpatient Internal Medicine 3<sup>rd</sup> edition; Sateia HF, Defer T. (eds), Lippincott Williams and Wilkins, Philadelphia, May 2015.
- o. Aaron Zuckerman: Medical Student WUSM**  
 Summer 2014 and 2015: T35 NIH NHLBI Training Grant Recipient. Also NIDDK Training grant recipient. Project and Research Title, "The probiotic LGG does not reduce tumor radio sensitivity in a syngeneic tumor model" presented at the research training symposium and poster session October 21, 2014. FASEB Meeting Steamboat, CO 2015 Travel Award with 2 posters, 1 oral. Received the Washington University Summer Research Dean's Prize (2 awarded of 110 eligible).
- p. Srikanth Santhanam PhD, postdoctoral scholar.**  
 Summer 2013-Present. Joined from Christian Medical College Vellore lab of BS Ramakrishna  
 Research project: using a novel human and mouse epithelial cell culture to examine intestinal pathogenesis.
- q. David Alvarado PhD, postdoctoral scholar**  
 Summer 2013-Present Joined from John's Hopkins University lab of Pierre Coulombe  
 Research project: a mouse model of overexpression of IDO1 in the gut epithelium. Implications for colitis, colon cancer and impact of the microbiota. Received Keck Foundation Fellowship Award 2015 and NIDDK T32 Fellowship Award.
- r. Alexander Markov: Medical Student WUSM**  
 Summer 2015: T35 NIH NIDDK Training Grant Recipient. Project and Research Title, "Tryptophan metabolism as a modifier of microbial communities at the mucosal interface"
- s. Maddie Suppiger: WUSTL Undergraduate**  
 Fall 2015-current: Bio500 Supervisor. Project title "IDO1 in the GI mucous layer"
- t. Matthew Kuhlmann MD: Instructor of Medicine, Division of Infectious Disease, WUSM**  
 January 2015-Present: Co-mentor on Master of Science in Clinical of Investigation. Thesis title: Blood Group O-dependent cellular responses to cholera toxin parallel clinical and epidemiological links to sever cholera.
- u. Hayley Motowski: WUSM Summer Student**  
 May-Present 2016: NIH T35 Award (Baranski T, PI) Project title: A Phase 1 clinical trial of the probiotic LGG in patients receiving cytotoxic therapy for GI malignancy
- v. Nattalie Dai: WUSTL Undergraduate**  
 Jan 2016-Present: Bio500 Supervisor. Project title "IDO1 in the GI mucous layer"
- w. Neemit Shah: WUSTL Undergraduate**  
 Aug 2016-Present: Bio500 Supervisor. Project title "IDO1 in colon cancer"
- x. Nathan Kau: WUSTL Undergraduate**  
 Aug 2018-Present: Project Title "Tryptophan Metabolism and Effects of Chemoradiation in Cancer Therapy"

**Thesis Committees:**

- A. Ameet I Thaker WUSM MA/MD candidate  
Role: Primary Mentor/Research Supervisor  
Dates: May 2009 to May 2010 (Final Defense June 1<sup>st</sup>, 2010)
- B. Raffi Lev-Tzion MD WUSM Pediatric GI/Hepatology and Nutrition Fellow  
Role: Scholarship Oversight Committee (Primary Mentor: Phillip Tarr MD)  
Dates: July 2010 - 2012
- C. Patrick Olson WUSM MSTP Training Program MD/PhD candidate  
Role: Committee member Qualifying exam  
Dates: 2012-13
- D. Kelley Patten WUSM DBBS Molecular Microbiology PhD candidate  
Role: Committee member Qualifying exam  
Dates: 2013-14
- E. Will Everet WUSM DBBS Molecular Microbiology PhD candidate  
Role: Committee member Thesis  
Dates: 2014-Present
- F. Joseph Burclaff DBBS- Developmental, Regenerative, and Stem Cell Biology  
Role: Committee member Thesis  
Dates: March 2014- present
- G. Robert Potter DBBS- Molecular Microbiology  
Role: Qualifying exam committee member  
Dates: September 2016 to present

**PhD Students Supervision from Division of Biological and Biomedical Sciences:**

- A. Melissa Budelier  
Program: DBBS-Biochemistry  
Dates: September- November 2013\
- B. Mark Lewis  
Program: DBBS-Molecular Cell Biology  
Dates: November 2013 - January 2014
- C. Joseph Burclaff  
Program: DBBS- Developmental, Regenerative, and Stem Cell Biology  
Dates: January-March 2014

**Service to Medical Community**

- 1) Crohn's and Colitis Foundation of America
  - President Medical Advisor Committee 2011-present
  - Physician Coordinator of Patient Education Symposium, Mid America Chapter 2011-present
  - Mid-America Chapter Medical Advisory Committee 2008-present.
  - Presenter Patient Education Symposium 2/2009, 2/2010, 2/2011, 2012, 2013
  - Research Awards Review Panel: Research Fellowship and Career Development (2015-2018)
  - CME Activity Chairperson: Jeffrey Gordon MD 2009
- 2) American Gastroenterology Association
  - Education and Training Committee member 2010-13
  - Research Awards Committee 2011- 2014
  - Scientific Abstract Review Committee 2011-Present
  - Session Chair at DDW: IMIBD, GIONC, Intestinal Disorders 2010-14
  - Councilor for the Immunology, Microbiology, & Inflammatory Bowel Diseases section of the AGA Institute Council 2013-present
  - Research Awards Panel 2017-2020
  - Editorial Board: Gastroenterology
  - Nominating Committee of AGA Officer 2018-2019

3) Data Safety and Monitoring Committees

- Endoscopic Weight Loss Devices: Shelby Sullivan MD
- Fecal microbial transplantation in patients with medication refractory *Clostridium difficile* and/or Ulcerative colitis or indeterminate colitis. PI, Ellen Li MD, PhD. Stonybrook University.