Gastrointestinal Eosinophilic Diseases Program
2018 Annual Report

In 2018, the GEDP celebrated its decade together. We gave thanks to all the providers outside of the GEDP at Children’s Hospital Colorado who extended their expertise to patients suffering from eosinophilic gastrointestinal diseases. Specialists from endocrinology, radiology, pathology, Special Care Clinic, Child Life, MDC, Medical Interpreters, Procedure Center, the Allergy Section and Gastroenterology Section all provided outstanding care for patients from across the region and county. In large part, their dedication is what makes patients and families continue to come for care in the GEDP.

CLINICAL

In 2018, our multi-disciplinary clinical program cared for over 2,500 patients suffering from eosinophilic gastrointestinal diseases (EGIDs). We cared for patients from the Rocky Mountain region as well as those from 40 states. Our engagement with parents and children continues to provide invaluable insights into areas of need and how we can improve future patient care experiences. These insights led to a transition of care program as our adolescent patients mature to adults.

Drs. Glenn T. Furuta, MD and Dan Atkins, MD continue to lead the multidisciplinary group. The GEDP is composed of 7 faculty members (3 gastroenterologists, 2 allergists, 1 behavioral medicine and 1 PhD scientist), feeding specialists (3), dietitians (2), program coordinators (2), nurses (4), a medical assistant and program assistant. Each provides outstanding care to patients with eosinophilic gastrointestinal diseases (EGIDs), including inpatient, outpatient and procedural services.

Highlights

- **Integration of new program coordinators**- Stephanie Skirka RN from gastroenterology and Jen Natale RN from allergy were promoted to the Program Coordinator roles for the GEDP. This new model of providing both allergy and gastroenterology expertise in leading the program has been transformational as they are able to synergize their collective experiences in patients with diverse needs.
- **Recruitment of new nursing and medical expertise**- Elizabeth Cronkrite RN joined the GEDP from the CHCO inpatient wards. She is bringing new energy and insights into our outpatient care setting. Luxi Sosa, medical assistant, joined from the Digestive Health Institute. She is bringing her day to day medical skills and enthusiasm to the program.
- **Presentation at National meeting on Patient Education**- In an effort to improve teenage adherence, Stephanie Skirka RN and Cassandra Burger, BA presented their work at an oral and poster during the North American Society of Pediatric GI, Hepatology and Nutrition in Florida.
- **Continued use of unsedated Transnasal Endoscopy**- Dr. Friedlander continues to provide this alternative for patients undergoing biopsy of the esophagus.
- **Engagement with colleagues from other locations**- We had visits from 3 other institutions who came to understand the multidisciplinary approach to care.
- **Incorporation of use of the esophagram with a barium coated pill to increase detection of esophageal strictures**- In collaboration with Laura Fenton and Kari Hayes, we added the barium coated pill in order...
to increase the ability to identifying esophageal narrowing that may not be visualized at the time of endoscopy.

- **Thank you program** - Linda Perez and Rachel Andrews completed monthly visits to deliver gratitude and a box of chocolates to our clinical and research colleagues who provide excellent support to the GEDP.

**Honors/Awards**
- Dan Atkins, MD, Outstanding Service Award (Faculty), Children's Hospital Colorado
- Dan Atkins, MD, 5 Star Patient-Family Experience Award, Children's Hospital Colorado
- Glenn Furuta, Calies Menard-Katcher, Maureen Bauer 4 Star Patient-Family Experience Award, Children's Hospital Colorado

**RESEARCH**

Our research program continues to engage in collaborative research studies dedicated to addressing short and long-term needs of our patients with EGIDs. Research is performed on the Anschutz Medical Campus as well as with our collaborators across the world including 11 national (Cincinnati Children’s, UC San Diego, Northwestern-Lurie Children’s, U Penn-CHOP, U North Carolina, Tufts, Baylor, U Ark, U Utah, Mayo Clinic, U Illinois) and 4 international (Juntendo University-Tokyo, Japan; Bern University-Switzerland; University of Utrecht. Wilhemina Children’s Hospital-Netherlands; Porto Allegra Children’s Hospital, Curitiba-Brazil). Research is supported by grants from the National Institutes of Health (NIH), Food and Drug Administration (FDA), Children’s Hospital Colorado (CHCO) Research Institute, La Cache Chair for GI Immunological and Allergic Diseases, the University of Colorado School of Medicine, academic societies, industry and philanthropic donations. Results from our research led to 28 publications in 2018; perhaps more importantly, our work has been cited over 10,100 time by other research articles.

**Highlights**

- **Recruitment of Outstanding Investigator** - The GEDP is ecstatic to welcome Lisa Spencer, PhD from Beth Israel Hospital and Harvard Medical School. She brings her expertise in defining the roles of eosinophils in gastrointestinal inflammation and new scientific approaches that will ultimately lead to new treatment approaches.

- **Collaboration in research with Rare Diseases Consortia and Pediatric Collaborative Research Institutes (PCORI)** - GEDP members, including Calies Menard-Katcher, Paul Menard-Katcher, Cassandra Burger, Kendra Kocher, Jonathon Cahoon, Taryn Brennan, Dan Atkins, Joel Friedlander, Glenn T. Furuta) participate in the administration and research in the NIH Rare Diseases Clinical Research Network grant titled Consortium of Eosinophilic Gastrointestinal Disease Researchers (CEGIR) and the PCORI study.

- **Development of novel ways to monitor disease activity** - We continue to advance efforts to bring the novel approaches to patient care with transnasal endoscopy (Joel Friedlander, MD), esophageal string test (Glenn T. Furuta, MD) and the EndoFLIP (Calies Menard-Katcher, MD) in order to reduce anesthesia use, procedural risks and costs. These studies are supported by grants from NIH, FDA and North American Society for Pediatric Gastroenterology, Hepatology and Nutrition (NASPGHAN).
• **Receipt of grants from Thetis and Holoclara**- These partnerships with industry colleagues seek to understand how new molecules may impact eosinophilic inflammation in our mouse model.

• **International research collaborations**- Eisuke Inage, MD, PhD is an excellent pediatric allergist from Juntendo University in Tokyo. He will complete his studies examining barrier dysfunction in EoE this summer and return back to his home institution.

• **Participation in the GI and Liver Innate Immunity Program (GALIIP)**- Sean Colgan, PhD continues to lead this Transformational Grant from the University of Colorado School of Medicine that focuses efforts to engage with local and national experts in understanding the innate immune system in GI and liver health.

• **Identification of new mechanism of EoE**- Since departing to her faculty position at Maynooth University in Ireland, Joanne Masterson, PhD continues to collaborate with the GEDP in her EGID research. In fact, she was recently awarded the Science Foundation of Ireland Grant, a prestigious grant equivalent to an NIH R01 that focuses on the role of hypoxia in EoE.

• **Progress in telehealth and treatment adherence**- Pooja Mehta, MD joined the faculty at University of Colorado School of Medicine and CHCO. She has received 2 grants that are improving our understanding of how to improve adherence to treatments of GI diseases.

**Publications**

(Total citations of collective works=10,111)


25. Spigel JM, Dellon ES, Liacouras CA, Hirano I, Molina-Infante J, Bredenoord AJ,


**Research Presentations**

Research Grants

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<thead>
<tr>
<th>PRINCIPAL NAME</th>
<th>SPONSOR</th>
<th>PROJECT TITLE</th>
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<tbody>
<tr>
<td>FURUTA, GLENN T</td>
<td>NIH/NIAID/R21</td>
<td>Esophageal Haemophilus influenzae contribution to Eosinophilic Esophagitis</td>
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<tr>
<td>FURUTA, GLENN T</td>
<td>NIH/NIDDK/K24</td>
<td>Patient research in eosinophilic gastrointestinal diseases</td>
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<tr>
<td>FURUTA, GLENN T</td>
<td>NIH/NIAID/U54</td>
<td>Consortium of Eosinophilic Gastrointestinal Disease (Clinical Research Project 1, OMEGA Trial) Researchers</td>
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<tr>
<td>FURUTA, GLENN T</td>
<td>FDA</td>
<td>Role of the esophageal string test in monitoring Eosinophilic Esophagitis</td>
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<tr>
<td>FURUTA, GLENN T</td>
<td>NIH/NIAID/U54</td>
<td>Consortium of Eosinophilic Gastrointestinal Disease (Administrative Core) Researchers</td>
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<tr>
<td>FURUTA, GLENN T</td>
<td>HOLOCLARA, INC.</td>
<td>Novel therapeutic molecule treatment for mouse model of esophagitis</td>
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<tr>
<td>FURUTA, GLENN T</td>
<td>NIH/NIAID/U54</td>
<td>Consortium of Eosinophilic Gastrointestinal Disease (Pilot/Demonstration Clinical Research Program) Researchers</td>
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<tr>
<td>MENARD-KATCHER, CALIES DESIATO</td>
<td>NIH/NIDDK/K23</td>
<td>Structural and molecular markers for detection and monitoring of pediatric fibrostenotic Eosinophilic Esophagitis</td>
</tr>
<tr>
<td>MENARD-KATCHER, CALIES DESIATO</td>
<td>END ALLERGIES TOGETHER (E.A.T)</td>
<td>Use of Esophageal String Test to understand symptoms, inflammation and function in eosinophilic esophagitis</td>
</tr>
<tr>
<td>SPENCER, LISA A</td>
<td>NIH/NIAID/R01</td>
<td>Eosinophil functions in allergic gastrointestinal diseases</td>
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EDUCATION and TRAINING

In addition, the GEDP continues to provide new and innovative training strategies for students, residents, fellows and junior faculty, as well as educational programs to the local community and nationally.

Highlights

- **Educating at local, national and international venues.** In order to increase recognition of EGIDs and provide updates on current research in this field, Holly Knotowicz, Drs. Atkins, Menard-Katcher, Nguyen and Furuta gave a number of presentations and Visiting Professorships throughout the year. These lectureships took them to many places across the United States as well as McMaster University, Hamilton Canada, Toronto. Holly’s presentation at the Feeding Matters Conference in Phoenix drew many positive reviews and comments where she provided a thoughtful and comprehensive approach to feeding children with EoE.

- **Receiving expertise from Visiting Professor.** This year brought another of the world’s experts in Eosinophilic Esophagitis to our campus, Seema Aceves, MD, PhD. Dr. Aceves is a pediatric allergist from University of California San Diego where she leads their Eosinophilic Gastrointestinal Diseases Program. She is an expert and leader in EoE related research and clinical care. Dr. Aceves spent several days with us offering important insights into many aspects related to EGIDs pathogenesis and patient care.
Provided educational content for Patient Education Symposium. In July 2018, the American Partnership for Eosinophilic Disorders (APFED.org) held its 16th Annual Patent Education Conference at Children’s Hospital Colorado and the Hyatt Regency Hotel. The GEDP provided educational content and organizational support for over 200 patients and families. Dr. Atkins worked with Ms. MaryJo Strobel of the American Partnership for Eosinophilic Diseases and Dr. Furuta to plan the curriculum and the program for the meeting.

Engaged with students in mentoring activities
David Kim - College Student from the Occidental University published a review article on the role of Claudins in GI and hepatic diseases and submitted an article examining the role of diet in IBD patients. Heather Miyazawa - College Student from University of Colorado, Boulder is completing a study on the clinical association of chromosomal abnormalities with EGIDs. Irina Marii - Master’s Bioengineering student from University of Colorado, Anschutz Medical Campus completed her project examining the FDA pathway toward device approval.

ADVOCACY, SERVICE and COMMUNITY INVOLVEMENT

Expanding knowledge and high standards through the National Institutes of Health and academic societies. Dr. Spencer serves on NIH study sections where she reviews grants. Dr. Atkins in his role as the committee chair, worked with other members of the Eosinophilic Gastrointestinal Diseases Committee of the American Academy of Allergy, Asthma and Immunology to develop the sessions submitted for inclusion in the curriculum for the 2019 Annual Meeting of the American Academy of Allergy, Asthma and Immunology in February of 2019 in San Francisco, California. Dr. Menard-Katcher, in her role on the North American Society for Pediatric Gastroenterology, Hepatology and Nutrition (NASPghan) Research Committee, provided excellent guidance and rigor for funded research. Dr. Furuta Co-Chaired the American Gastroenterological Association Digestive Diseases Week EGID Basic Abstract Committee.

Serving as Medical Advisors-Drs. Atkins and Furuta are members of the Medical Advisory Board of the American Partnership for Eosinophilic Disorders (APFED) and the Campaign Urging Research for Eosinophilic Diseases (CURED) Foundation.

Serving patients and families-The GEDP continues a longstanding tradition of providing meals for patients and their families staying in the Ronald McDonald House. Holly Knotowicz serves an active liaison with the Round Up River Ranch where she has participated in the retreats and organized fundraisers.
Links of interest related to the GEDP

- Interviews with GEDP providers
  Dr. Atkins
  https://www.youtube.com/watch?v=G-5Qhj1yb44
  Dr. Furuta
  https://www.youtube.com/watch?v=NvtPcWg5_w
  Dr. Menard-Katcher
  https://www.youtube.com/watch?v=4efzIw1lqsY

- Esophageal String Test work
  http://www.ucdenver.edu/academics/colleges/medicalschool/PatientCare/quality/Newsroom/Pages/Glenn-Furuta%2c-MD.aspx

- Funding news from La Cache for the GEDP

- Consortium of Eosinophilic Gastrointestinal Disease Researchers (CEGIR)
  https://www.rarediseasesnetwork.org/cms/cegir

- Discussion with patients about experiences with Eosinophilic GI diseases
  https://www.youtube.com/watch?v=_GbD7TE7XVU
  https://www.youtube.com/watch?v=j-wX-oZ4cDs