Gastrointestinal Eosinophilic Diseases Program
Annual Report 2017

CLINICAL

In 2017, our multi-disciplinary clinical program continues to care for over 2000 patients suffering from eosinophilic gastrointestinal diseases (EGIDs) from across the world. Our engagement with parents and children gave us invaluable insights into areas of their need and how we can improve future patient care experiences. In this regard, we are instituting a care plan in order to provide optimal transition of our adolescent patients to adult providers.

Highlights

• Integration of new gastroenterology expertise-Nathalie Nguyen, MD, joined the GEDP after completing her Gastroenterology Fellowship at University of Colorado School of Medicine and Children’s Hospital Colorado. During her fellowship, she worked with the GEDP and published a high impact paper on mechanisms of barrier dysfunction in EoE.

• Advancement of use of Telehealth to improve eating patterns-Holly Knotowicz used Telehealth to engage in individual feeding therapy and is planning group treatments.

• Development of video to improve adherence-JoAnne Newton, RN and Stephanie Skirka RN developed a video as a product of the Susan Moyer North American Society of Pediatric GI, Hepatology and Nutrition Grant to identify and assess factors contributing to teenage medication adherence.

• Continued use of Transnasal Endoscopy to decrease use of sedated endoscopy

• Engagement with colleagues from other countries-Kunsong Lee, MD, pediatric gastroenterologist from South Korea visited our program for 6 months in order to provide us with clinical insights and advance care in his home land.

• Incorporation of use of barium esophagram to increase detection of esophageal strictures-In collaboration with Laura Fenton, we increased our use of this test to identify the presence of esophageal narrowing that escapes detection at the time of endoscopy.

• Thank you program- Linda Perez and Rachel Andrews have been organizing monthly visits to deliver gratitude and a box of chocolates to our clinical and research colleagues who provide excellent support to the GEDP. Visits to endocrinology, pathology and special care sections have taken place thus far.

RESEARCH

Our research program continues to engage in collaborative research studies dedicated to addressing short and long-term needs of our patients with EGIDs. Our research is performed on the Anschutz Medical Campus as well as with our collaborators across the world. 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 philanthropy. Results from our research led to 23 publications in 2017.

GEDP Mission: To improve the lives of patients with eosinophilic gastrointestinal diseases (EGIDs) through novel research, cutting edge patient care, and proactive advocacy, education and mentorship.
**Highlights**

- **Collaboration in research with Rare Diseases Consortia and Pediatric Collaborative Research Institutes (PCORI)**- Many of the GEDP members, (including Calies Menard-Katcher, Paul Menard-Katcher, Leslie Young, Susanna Kantor, Allison Dubner, Taryn Brennan, Dan Atkins, Joel Friedlander, Sophie Fillon, Kelly Cappocelli, 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. Susanna Kantor lead the planning and completion of the 2nd and 3rd meetings in Los Angeles and Atlanta that brought together investigators from across the nation to review findings and plan for the grants resubmission.

- **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 grant from End Allergies Together**-Calies Menard-Katcher, MD and Glenn T. Furuta, MD received a grant from this advocacy group to provide insights into how the esophagus affected by EoE may be less functional. This grant was received as a part of collaboration with Children’s Hospital of Philadelphia.

- **Defining mechanisms of inflammation**- In order to develop new treatments, studies were performed to understand what makes EGIDs occur. Joanne Masterson, PhD, Calies Menard-Katcher, MD, Sophie Fillon PhD, Glenn T. Furuta, MD and Nathalie Nguyen MD published work emanating from CHCO and in collaboration with colleagues at Northwestern University, University of Illinois, Cincinnati Children’s Hospital and University of Pennsylvania that helped understand the eosinophil’s roles in inflammation.

- **Arrival of Eisuke Inage, MD, PhD**- Dr. Inage is an excellent pediatric allergist from Juntendo University in Tokyo. He will spend 2 years examining barrier dysfunction in EoE.

- **Integration of Research Grants and Strategy Manager**- Rhona Jackson joined the Program to replace Josh Rosenfeld. She brings a wealth of experience from past positions in the Pulmonary Section at University of Colorado Hospital.

- **Collaboration with investigators and clinicians from across the world to institute new approaches to EoE care**-(AGREE Meeting) The GEDP organized a meeting of 53 experts (adult and pediatric GI, allergy, pathology) from 14 countries to identify the role of proton pump inhibitors in the evaluation of patients with suspected EoE.

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

- **Departure of Sophie Fillon, PhD**- Dr. Fillon moved to Germany for personal reasons. Dr. Fillon provided the field with a wealth of knowledge in the area of the esophageal microbiome where she published some of the first data on its role in EoE.

- **Departure of Joanne Masterson, PhD**- Dr. Masterson earned a faculty position at Manmouth University in Ireland where she will continue her work in EGID research. She continues to engage with the GEDP.
in her very novel work that examines eosinophil’s role in intestinal barrier dysfunction. Her work provided the field with seminal publications in eosinophils protective role in the GI tract, novel mouse model of EoE and novel insights in how hypoxia contributes to host health.

• **Graduations from fellowship**- Pooja Mehta, MD finished her fourth year of fellowship and joined the faculty at University of Colorado School of Medicine and CHCO. She will use her skills and expertise to understand how to improve adherence to treatments of GI diseases. Nathalie Nguyen, MD joined the DHI and GEDP as its newest GI faculty member. She brings a wealth of EGID knowledge from her time in the lab and clinical program.

**Grants / Funding**

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<thead>
<tr>
<th>Name</th>
<th>Institution/Agency</th>
<th>Description</th>
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<tbody>
<tr>
<td>Sophie Fillon, PhD</td>
<td>Cystic Fibrosis</td>
<td>Foundation</td>
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<tr>
<td></td>
<td>NIAID/NIH/R21</td>
<td>Effect of acid blockade on microbiota and inflammation in CF</td>
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<td></td>
<td>NIAID/NIH/U54</td>
<td>Esophageal Haemophilus influenzae contribution to Eosinophilic Esophagitis</td>
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<tr>
<td>Glenn T. Furuta, MD</td>
<td>NIDDK/NIH/K24</td>
<td>Patient research in eosinophilic gastrointestinal diseases</td>
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<td></td>
<td>NIDDK/NIH/K01</td>
<td>Hypoxia Inducible Factor Control of Epithelial Regeneration in Eosinophilic Esophagitis</td>
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<tr>
<td>Joanne Masterson, PhD</td>
<td>NIDDK/NIH/K23</td>
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<td>Reducing Complications Related to Eosinophilic Esophagitis Through Nursing Education</td>
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**Publications-** *(Total citations of collective works=9539)*


Gastrointestinal Disease Researchers (CEGIR) Transl Sci Rare Dis. 2017 Dec 18;2(3-4):141-155. PMID: 29333363

EDUCATION

Highlights

- In order to increase recognition of EGIDs and provide updates on current research in this field, Drs. Atkins 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 Berlin, Belgium and Australia.
- This year brought another of the world’s experts in Eosinophilic Esophagitis to our campus, Evan Dellon, MD. Dr. Dellon is an adult gastroenterologist from University of North Carolina where he heads their Esophageal Center, where his national efforts improve the lives of patients with EGIDs. He is an expert and leader in EoE related research and clinical care. He spent several days with us offering important insights into many aspects related to EGIDs pathogenesis and patient care.

ADVOCACY, SERVICE and COMMUNITY INVOLVEMENT

- Advocacy work service
  - Drs. Atkins and Furuta serve on the Medical Advisory Board for APFED.org and participated in speaking at APFED and CURED patient conferences.
  - Holly Knotowicz serves an active liaison with the Round Up River Ranch where she has participated in the retreats and organized fundraisers.
  - Team members continue to serve meals at the Ronald McDonald House.
- Service
  - Calies Menard-Katcher, MD
    - Selected as a member of the North American Society for Pediatric Gastroenterology, Hepatology & Nutrition (NASPGHAN) Research Committee
• Selected to attend the University of Colorado Academy of Medical Educators’ School of Medicine Faculty “Women’s Leadership Training” course over the academic year.

AWARDS

• Patient Family Experience Award-(>90% ratings) was received by 5 of the GEDP providers. Dr. Atkins had >95% of patient’s family experience ratings between 9 and 10. Drs. Robinson, Friedlander Menard-Katcher, and Furuta had >90% of patient family experience ratings between 9-10.
• 5280 Award-Dr. Atkins received this recognition from his local colleagues for the 13+ year in a row.
• Eosinophilic Gastrointestinal Diseases Service Award- Dr. Furuta was awarded this at the Cincinnati Children’s Hospital and Cincinnati Center for Eosinophilic Diseases Patient Education Conference by the Campaign Urging Research In Eosinophilic Disorders for his work in EGIDs.

MENTORSHIP

• David Kim- College Student from the Occidental University has been working with the GEDP to do both clinical work examining the impact of diet on GI diseases and laboratory studies examining the histopathological patterns of EGIDs.
• Heather Miyazawa- College Student from University of Colorado, Boulder completed a project- Targeting granulocyte-macrophage colony-stimulating factor in epithelial and vascular remodeling in experimental eosinophilic esophagitis and the clinical association of chromosomal abnormalities with EGIDs.
• Swathi Chivukula- Master’s Bioengineering student from University of Colorado, Anschutz Medical Campus began a project- Identification of Gastroesophageal Reflux Disease Biomarkers using the Esophageal String Test

Links of interest related to the GEDP

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