

Under the direction of Jeffrey Kahn, M.D., Ph.D., the [Division of Pediatric Infectious Disease](#) directs and manages two active in-patient infectious disease consultation services; one dedicated to general infectious diseases and the other dedicated to infections in the immunocompromised hosts. The Division has an active ambulatory service for children with infectious diseases, including a large clinic for HIV-infected and HIV-exposed children and adolescents at Children’s Medical Center. The Infection Control and Prevention Programs at two Children’s campuses (Dallas and Our Children’s House) are managed under the medical directorship of Michael Sebert, M.D.

The Division was established in the early 1960’s with one faculty member, John D. Nelson, M.D. Shortly thereafter, George McCracken joined the Division and the two managed the Division for decades, graduating more than 100 fellows, many of whom are currently leaders in academics and in the field of Infectious Diseases making the fellowship program one of, if not the, longest standing and productive Pediatric Infectious Diseases fellowship programs in the world. Drs. Nelson and McCracken were the founding editors for the *Pediatric Infectious Diseases Journal*, the top publication in the field of Pediatric Infectious Diseases. Currently, the Division has nine faculty members, five fellows, and several research and administrative support staff.



**Jeffrey Kahn, M.D., Ph.D.**  
Division Chief

The Division provides an active infectious disease consultation service at Children's and other hospitals on the UT Southwestern campus, including Parkland Memorial Hospital and Clements University Hospital. Each year the Division provides consultation and care to more than 700 infants, children, adolescents, and young adults. Faculty care for patients with inherited or acquired immunodeficiency, including those receiving immunosuppressive therapy for cancer, organ transplantation, bone marrow, and stem cell transplantation, as well as patients with inflammatory bowel disease and rheumatologic disorders and a wide variety of classic as well as unusual infectious disease problems.

Division faculty members publish an average of 10-12 papers yearly in peer-reviewed journals and are actively engaged in clinically applied research involving the areas of:

- Molecular epidemiology of respiratory syncytial virus and activation of the innate immune system by RSV
- The link between pulmonary infection and asthma, specifically the role of dendritic cells in response to rhinovirus infection in the pathogenesis of asthma
- HIV/AIDS
- Malaria epidemiology, eradication and elimination
- Ebola response preparedness
- Molecular biology and drug discovery for protozoan parasites
- Hepatitis E virus
- Infections in immunocompromised hosts
- Fungal infections
- Transplant Infectious Diseases
- Antimicrobial stewardship
- Outbreak investigations
- Innate immune response to neuroinvasive Flaviviruses

The Division is dedicated to the training of medical students, residents, and fellows. Since 1965 more than 100 physicians have completed training in the Division’s fellowship training program, and greater than 80 percent of them have academic appointments at universities and children’s hospitals worldwide.

## Faculty

There are nine full-time faculty members in the Division of Pediatric Infectious Disease.

### Honors / Awards

#### Best Pediatric Specialists in Dallas, *D Magazine*

- Michelle Gill
- Natasha Hanners
- Jeffrey McKinney
- Paul K. Sue

#### Amanda Evans

- Eric Johnson, Mayor of the City of Dallas proclaimed as the Children's Health AIDS Related Medical Services (ARMS) Clinic Day

#### Michelle Gill

- Appointed Assistant Director, Medical Scientist Training Program (MSTP)

#### Natasha Hanners

- Promotion to Assistant Professor

#### Dawn Wetzel

- Provisional patent 62/923,941 for aminopyrazole derivatives to treat parasitic illnesses
- Selected for Harrington Scholar Innovator Award
- Selected UT Southwestern applicant, Hartwell Foundation Grant
- Selected Departmental application, UT Southwestern High Impact Grant

### Invited Lectures

#### Amanda Evans

Children's Medical Center Dallas, Children's Health Live Practice-to-Practice broadcast lecture, Dallas, TX, May 2019  
*"HIV Screening and Prevention: Approaches for the Community Provider"*

Children's Health/UTSW Clinico-Pathologic Correlation Conference, Dallas, TX, May 2019  
*"Preschooler with Peri-Orbital Swelling (Pythium Insidiosum)"*

Children's Health 13<sup>th</sup> Annual Advanced Practice Conference, Coppell, TX, October 2019  
*"Immunizations for the General Practitioner"*

#### Natasha Hanners

Departments of Pediatrics and Internal Medicine ID Boot Camp, UT Southwestern, April 2019  
*"Antibiotic Pearls and Infectious Disease Cases"*

2019 New Frontiers in Pediatric Neurology Symposium, Dallas, TX, May 2019  
*"Updates on Zika Virus and Other Congenital Infections"*

Neonatology Division Research Conference, Dallas, TX, Dec 2019  
*"Investigating the Innate Immune Response to Neurotropic Viruses"*

### **Michelle Hsiang**

The Malaria Endgame: Innovation in Therapeutics, Vector Control and Public Health Tools, Addis Ababa, Ethiopia, November 2019

*"Effectiveness of Malaria Reactive Focal Mass Drug Administration (rfMDA) and Reactive Focal Vector Control (RAVC), A Cluster Randomized Controlled 2x2 Factorial Design Trial from the Low Endemic Setting of Namibia"*

Ifakara Health Institute, Bagamoyo Branch, Bayamoyo, Tanzania, November 2019

*"Finding and Treating Hidden Malaria Infections"*

Lancet Commission on Malaria Eradication Launch Symposium, University of California, San Francisco, September 2019

*"Finding and Treating Hidden Malaria Infections"*

### **Jeffrey McKinney**

Departments of Pediatrics and Internal Medicine ID Boot Camp, UT Southwestern, July 2019

*"Gram Negative Infections Cases and Management"*

### **Paul K. Sue**

Children's Health, Practice to Practice Webinar Series, December 2019

*"Fecal Microbiota Transplantation in Children"*

Pharmville NAPNAP North Texas Regional Conference, Dallas, TX, September 2019.

*"Infectious Disease Updates 2019"*

Infectious Disease and Geographic Medicine Grand Rounds, UT Southwestern, July 2019

*"Fecal Microbiota Transplantation in Children: Promises & Pitfalls"*

### **Michael Sebert**

Departments of Pediatrics and Internal Medicine ID Boot Camp, UT Southwestern, July 2019

*"Tuberculosis Cases and Management"*

*"Fungal Infections Cases and Management"*

*"Parasitology Cases and Management"*

### **Dawn Wetzel**

University of Arizona, NIH/MARC Minority Undergraduate Research Course, Tucson, AZ, Nov 2019

*"Targeting New Therapies for Leishmaniasis"*

### **Conference Presentations**

Das BB, Niu J, **Sue PK**, Prusty BK.

International Society for Heart and Lung Transplantation (ISHLT) 39<sup>th</sup> Annual Meeting, Orlando, FL, April 2019

Oral Abstract, *"Cytomegalovirus Infection among Pediatric Heart Transplant Recipients in the Current Era of Valganciclovir Prophylaxis: Impact on Post-transplant Outcomes"*

**Sue PK**

Infectious Disease Society of America (IDSA), Washington DC, October, 2019

Symposium Invited Panelist, *"Challenging Cases in Transplant ID"*

Arrieta, A, Frangoul H, Steinbach W, Muller W, **Sue PK**, et al.

European Congress of Clinical Microbiology & Infectious Diseases (ECCMID) 29<sup>th</sup> Annual Meeting, Amsterdam, Netherlands April 2019

Oral Abstract, *“An Open-Label, Phase I, Multicentre Study to Evaluate the Pharmacokinetic, Safety and Tolerability Profile of Intravenous Isavuconazonium Sulfate in Paediatric Patients”*

**Gill M.**

American Academy of Allergy, Asthma & Immunology (AAAAI), San Francisco, CA, February 2019

Symposium Invited Speaker, *“Lung Innate Immunity: At the Frontlines of Host Defense”*

Symposium Invited Speaker, *“Immunophenotype Mapping of Human Dendritic Cells in the Context of Respiratory Virus Exposure”*

**Gill M.**

American Thoracic Society (ATS), Dallas, TX, May 2019

Invited Speaker, *“Lung Innate Immunity: At the Frontlines of Host Defense”*

Lindsay E, Sanchez MF, Taureen N, **Sue PK**, Patel K, Copley L.

American Academy of Family Physicians (AAFP) National Conference, Kansas City, MO, July/August 2019

Poster Presentation, *“Stratifying Children and Adolescents Diagnosed with Acute Osteomyelitis and Bacteremia Using a Severity Illness Score to Guide Treatment Decisions”*

Montiel-Esparza R, Reys B, Rogers ZR, **Evans AS**, Wysocki CA, Timmons C, Dickerson KE.

American Society of Pediatric Hematology Oncology (ASPHO), New Orleans, LA, May 2019

Poster Presentation, *“GATA2 Haploinsufficiency: Novel Pulmonary Stigmata and Rapid Myelodysplastic Transformation”*

Sanchez M, **Sue PK**, Patel K, Taureen N, Copley L

IDWeek, Washington, DC, October 2019

Poster Presentation, *“Treatment of Children with Acute Hematogenous Osteomyelitis and Staphylococcus Aureus Bacteremia: Severity of Illness Stratification and Impact on Antimicrobial Therapy”*

Warraich G, Winick N, Aquino V, Donner K, Shah G, Slone T, **Sue PK**

IDWeek, Washington, DC, October 2019

Poster Presentation, *“Outcomes of a Clinical Algorithm for the Early Diagnosis and Treatment of Invasive Fungal Sinusitis among Children with Hematologic Malignancy or Prior Hematopoietic Stem Cell Transplantation”*

## **Education and Training**

The Division of Pediatric Infectious Disease provides educational opportunities for medical students and pediatric residents in addition to its accredited fellowship program.

Pediatric Infectious Diseases is a consultative service, in which faculty interact with all divisions in the department and assist in the management of children with a variety of underlying medical problems. Most consultations involve hospitalized patients, but there are general infectious disease and HIV/AIDS clinics in which patients are managed on an outpatient basis. Medical students can elect to work in these clinics under supervision of the fellows and faculty. The elective rotation is open to second-, third- and fourth-year medical students and pediatric residents, the latter being given more autonomy because of their greater clinical experience. Visitors from other medical schools and residency training programs are welcome.

The Infectious Diseases Service is an elective-only rotation among our house officers. Thus, we are pleased to consistently attract residents who self-select month-long training experiences in Infectious Diseases. Individualized by Amanda Evans, these blocks have allowed residents to choose among training exposures in our outpatient clinics,

our general infectious diseases consult service, and our immunocompromised host clinical service. Residents consistently contribute to our division rounds, including via formal presentations of contemporary cases and new research findings. In addition, trainees interested in infectious diseases work with our colleagues in public health, in the bone marrow transplant unit, the clinical microbiology lab, and with our dedicated infectious diseases pharmacists. Resident scholarly projects have been mentored by our faculty, and we take pride in facilitating nationally competitive ID fellowship searches by our UT Southwestern resident cadre.

The Division of Pediatric Infectious Disease has a long tradition of training fellows in the subspecialty. Since 1965, more than 100 fellows from 28 countries have completed training in infectious diseases. Eighty percent are involved in teaching and research in university-affiliated medical centers.

Many graduates are leaders in the field of infectious diseases, and some have become division directors and department chairs or deans of medical schools.

The purposes of the training program are to provide a background in laboratory techniques of classical microbiology, immunology, and molecular biology, to provide experience in application of the scientific method to clinical and laboratory research, and to develop competence in diagnosis and management of infectious diseases. Clinical training is in the form of consultations, rounds, and conferences, and outpatient Infectious Disease and HIV Clinics.

Dr. Kahn serves as the Pediatric Infectious Disease Fellowship Program Director. All division faculty, each with specific clinical and research interests, actively participate in the training program. Each trainee is instructed in all relevant basic laboratory methods, including fundamentals of aerobic and anaerobic bacteriology, antibiotic susceptibility testing, antibiotic assays, serologic techniques, as well as state of the art molecular diagnostic assays such as Matrix-Assisted Laser Desorption Ionization Time-of-Flight Mass Spectrometry or MALDI-TOF.

Additionally, the fellows have ample opportunity to work with collaborators in molecular microbiology to acquire basic techniques such as PCR, microarray analyses, cloning, transcriptome analyses and purification of bacterial outer membrane components (e.g. endotoxin).

The trainee carries through one or more research protocols of his or her own design with supervision by the program directors and collaborators. This is tailored to the interests and capabilities of the individual trainee, either in basic laboratory experimentation or in clinical research.

The clinical experience at Children's Medical Center and on the neonatal service at Parkland Health & Hospital System and the newly opened Clements University Hospital is extensive. There are approximately 120,000 outpatient visits, 9,000 pediatric admissions, and 16,000 deliveries per year. A high proportion of these have infectious disease problems; therefore, trainees have the opportunity to see many common infections and most of the rarer disorders.

Infectious disease clinical rounds are conducted daily; there are outpatient clinics at least four days each week. The Division averages approximately 60 inpatient consultations monthly and 15-20 new outpatient consultations monthly.

The three-year fellowship training program aims to provide individuals with sufficient background to pursue a career of independent research, teaching, and managing patients with wide variety of pediatric infectious diseases.

## Research Activities

Pediatric Infectious Disease faculty are actively engaged in numerous investigations that provide an invaluable opportunity to learn the most modern molecular biologic techniques and to apply these to common clinical problems in pediatrics. The Division has a long-standing history in clinic investigation and has published landmark papers in many areas including clinical trials of anti-inflammatory agents in bacterial meningitis, diagnostic studies using polymerase chain reaction (PCR) in congenital syphilis and pneumonia, and studies of endotoxin concentrations in body fluids of infants and children with meningococcal or Haemophilus meningitis and correlating these values with outcomes.

- Jeffrey Kahn's areas of scientific research include emerging pathogens, respiratory syncytial virus, human metapneumovirus and rhabdoviral vectors.
- Michelle Gill, whose research centers on evaluating the role of dendritic cells in pediatric respiratory viral infections and allergic disease, partners with the Division of Pediatric Allergy and Immunology to investigate the roles of dendritic cells, respiratory viruses and IgE-mediated allergy in asthma pathogenesis.
- Natasha Hanners' clinical and research interest is in viral encephalitis and the innate immune response in control on neuroinvasive viruses.
- Michelle Hsiang conducts malaria epidemiological and clinical research in low transmission areas of Africa and Asia to address the unique challenges of diagnosis, surveillance and treatment of individuals and populations in these settings.
- Dawn Wetzel focuses on host: pathogen interactions in, and drug development for, the parasitic infection leishmaniasis.
- Paul Sue's research interests include the epidemiology and clinical outcomes of viral and fungal infections among pediatric transplant recipients, novel therapeutics including the role of fecal microbiota transplantation among children, and the role of microbiota diversity in the emergence of MDRO among immunocompromised hosts.

Research areas include:

- The link between pulmonary infection and asthma
- Malaria
- HIV/AIDS
- Immunogenetic profiles of children with various infections
  
- Respiratory syncytial virus
- Hepatitis E virus
- Innate immune response to Flaviviruses
- Infection Control and Prevention
- Infections in immunocompromised hosts
- Fungal infections
- Transplant Infectious Diseases

The Division has established collaborative research programs with members of the Departments of Microbiology and Immunology at UT Southwestern. The principle goals of these collaborative projects are:

- To delineate the molecular immunobiologic basis for the pathogenesis of certain infectious diseases in pediatrics
- To define and control the inflammatory processes involved in bacterial infections, such as bone and joint infections
- To develop the immunobiologic profiles of children with infectious diseases

## Clinical Activities

The Division provides an active infectious disease consultation service at Children's and other hospitals on the UT Southwestern campus including Parkland Memorial Hospital and Clements University Hospital. Each year, the Division provides consultation and care to more than 700 infants, children, adolescents, and young adults. Faculty care for patients with inherited or acquired immunodeficiency, including those receiving immunosuppressive therapy for cancer, organ transplantation, bone marrow, and stem cell transplantation, as well as patients with inflammatory bowel disease and rheumatologic disorders and a wide variety of classic as well as unusual infectious disease problems.

In addition to the infectious disease outpatient clinic and the infection control program at Children's, the Division is responsible for directing:

- The AIDS-Related Medical Services Clinic (ARMS) under the leadership of Amanda Evans, M.D.
- The Infection Control Program under the leadership of Michael Sebert, M.D.
- The Solid Organ Transplant Infectious Diseases Clinic under the leadership of Paul Sue, M.D.
- Establishment of a new Congenital Infectious Disease Clinic, to address the increased rates of congenital infections, in particular congenital syphilis. Under the leadership of Amanda Evans, M.D.

### Patient Visits

	2017	2018	2019
Inpatient consultations	550	702	790
Inpatient follow up visits	2,000	2,457	2,370
New Outpatient visits	520	383	448
Follow-up outpatient visits	360	490	1,070

## Current Grant Support

### Michelle Gill

**Grantor:** NIH NIAID Inner City Asthma Consortium 3 (ICAC3, UM1AI 114271)

**Title of Project:** Immunologic Approaches to Reduce Asthma

**Role:** Co-Investigator (PI: R Gruchalla)

**Dates:** 08/2014 – 07/2021

**Grantor:** NIH/NIAID Inner City Asthma Consortium 3

**Title of Project:** Mechanistic Study Development for ICAC3 MUPPITS and CoNAC Protocols

**Role:** Principal Investigator (NIAID ICAC3 Administrative Site: University of Wisconsin)

**Dates:** 08/2018 – 07/2020

**Grantor:** NIH/NIAID / Benaroya Research Institute at Virginia Mason Seattle

**Title of Project:** Immune Tolerance Network: Dendritic Cell and T Follicular Helper Cell Pilot Study for CATNIP/ITN057AD

**Role:** Principal Investigator

**Dates:** 02/2019 – 01/2020

## Natasha Hanners

**Grantor:** NIH 5K12, UT Southwestern Department of Pediatrics  
**Title of Project:** Antecedents & Sequelae of Childhood Onset Diseases  
**Role:** Co-Principal Investigator (PI: Perez Fontan)  
**Dates:** 12/2016 – 02/2019

**Grantor:** NIH K08  
**Title of Project:** Interferon-mediated Control of Neuropathogenic Flaviviruses  
**Role:** Principal Investigator  
**Dates:** 02/2019 – 01/2024

**Grantor:** Children's Health CCRAC, W. W. Caruth Fellow  
**Title of Project:** Interferon-mediated Control of Encephalitogenic Viruses  
**Role:** Principal Investigator  
**Dates:** 08/2015 – 12/2019

## Michelle Hsiang

**Grantor:** NIH / NIAID K23  
**Title of Project:** Evaluating Re-active Surveillance Strategies for Malaria Elimination in Swaziland  
**Role:** Principal Investigator  
**Dates:** 07/2012 – 05/2019

**Grantor:** The Bill and Melinda Gates Foundation  
**Title:** Achieving Global Malaria Eradication through Accelerated Regional Elimination, Subproject 1.3: Evaluation of New, Highly Sensitive Point of Care Diagnostics for Asymptomatic Infections in Namibia  
**Role:** Co-Principal Investigator (PI: Gosling)  
**Dates:** 01/2017 – 12/2020

**Grantor:** Global Fund for AIDS Tuberculosis and Malaria Subcontract  
**Title of Project:** Guyana Transition Readiness Assessment for Malaria and National Malaria Strategic Plan Revision  
**Role:** Co-Principal Investigator/Collaborator  
**Dates:** 07/2019 – 12/2019

**Grantor:** NIH/NIAID K01  
**Title:** Measuring Spillover Effects of Reactive, Focal Malaria Elimination Interventions  
**Role:** Co-Mentor (PI: Jade Benjamin-Chung)  
**Dates:** 05/2014 – 06/2019

**Grantor:** USAID (United States Agency for International Development)  
**Title of Project:** IMPACT Malaria, Operational Research Technical Assistance to US President's Malaria Initiative-supported Countries  
**Role:** Collaborator (Co-PI: Co-PI: Gosling, UCSF; Consortium PI: Orford, Population Services International)  
**Dates:** 01/2018 – 12/2023



## Jeffrey Kahn

**Grantor:** NIH / National Institute of Allergy and Infectious Diseases  
**Title of Project:** Innate Immune Activation by Respiratory Syncytial Virus  
**Role:** Principal Investigator  
**Dates:** 06/2016 – 05/2019

**Grantor:** NIH / UT Dallas  
**Title of Project:** Digital Nanobubble Biosensor for Point-of-Care Respiratory Syncytial Virus Detection  
**Role:** Co-Investigator  
**Dates:** 05/2018 – 04/2020

**Grantor:** Janssen Research & Development, LLC  
**Title of Project:** A Phase 2, Randomized, Double-blind, Placebo-controlled Study to Evaluate the Antiviral Activity Clinical Outcomes Safety Tolerability and Pharmacokinetics of Orally Administered Lumicitabine  
**Role:** Principal Investigator  
**Dates:** 03/2018 – 03/2023

## Paul K. Sue

**Grantor:** Astellas Pharma Global Development, Inc  
**Title of Project:** A Phase 1, Open-Label, Multicenter, Non-comparative Pharmacokinetics and Safety Study of Intravenous Isavuconazonium Sulfate in Pediatric Patients  
**Role:** Principal Investigator  
**Dates:** 03/2017 – 12/2019

**Grantor:** Merck, Sharpe & Dohme Corp  
**Title of Project:** A Phase 2b, Open-Label, Single-Arm Study to Evaluate the Pharmacokinetics, Efficacy, Safety and Tolerability of Letermovir in Pediatric Participants From Birth to Less Than 18 Years of Age at Risk of Developing CMV Infection and/or Disease Following Allogeneic Haematopoietic Stem Cell Transplantation (HSCT)  
**Role:** Principal Investigator  
**Dates:** 05/2019 – 05/2021

## Dawn Wetzel

**Grantor:** NIH NIAID, R21 AI121820  
**Title of Project:** The Role of Flagellar Motility to Innate Immune Recognition of Bacteria  
**Role:** Co-Principle Investigator  
**Dates:** 06/01/2016 – 05/31/2019

**Grantor:** CCRAC/Children's Clinical Research Advisory Committee  
**Title of Project:** Role of Host Cells in Treatment-Resistant Pediatric Leishmaniasis  
**Role:** Principal Investigator  
**Dates:** 04/01/2018 – 03/31/2020

**Grantor:** Harrington Discovery Institute Scholar, Innovator Award  
**Title of Project:** Developing Novel Antiparasitics That Affect Tubulin Dynamics  
**Role:** Principal Investigator  
**Dates:** 01/2019 – 12/2020

**Grantor:** NIH / National Institute of Allergy and Infectious Diseases (NIAID)  
**Title of Project:** Targeting a New Therapy for Trypanosomatids  
**Role:** Principal Investigator  
**Dates:** 06/2019 – 05/2024

## Journal Publications

1. Altman MC, **Gill MA**, Whalen E, Babineau DC, Shao B, Liu AH, Jepson B, **Gruchalla RS**, et al. [Transcriptome networks identify mechanisms of viral and nonviral asthma exacerbations in children](#). *Nat Immunol*. 2019 May;20(5):637-651. PMID: 30962590
2. Baltzell KA, Maglior A, Bangu K, Mngadi N, Prach LM, Whittemore B, Ntshalintshali N, Saini M, Dlamini N, Kunene S, **Hsiang MS**. ["We were afraid of the lion that has roared next to us"; community response to reactive focal mass drug administration for malaria in Eswatini \(formerly Swaziland\)](#). *Malar J*. 2019 Jul 15;18(1):238. PMID: 31307494
3. Chen MW, Akinboyo IC, **Sue PK**, et al. [Evaluating congenital syphilis in a reverse sequence testing environment](#). *J Perinatol*. 2019 Jul;39(7):956-963. PMID: 31076626
4. Goleva E, Babineau DC, **Gill MA**, et al. [Expression of corticosteroid-regulated genes by PBMCs in children with asthma](#). *J Allergy Clin Immunol*. 2019 Mar;143(3):940-947.e6. PMID: 30059697
5. Gurram B, **Sue PK**. [Fecal microbiota transplantation in children: current concepts](#). *Curr Opin Pediatr*. 2019 Oct;31(5):623-629. PMID: 31169545
6. Hassouneh L, Quadri S, Reto PP, Chaisavaneeyakorn S, Cutrell JB, **Wetzel DM**, Nijhawan AE. [An Outbreak of Brucellosis: An Adult and Pediatric Case Series](#). *Open Forum Infect Dis*. 2019 Aug 30;6(10):ofz384. PMID: 31660348
7. Hoge MK, Thomas JM, **Hanners NW**, Castro DP, Ali N. [Case 1: Apnea and Hypotonia in a 1-month-old Infant](#). *Neoreviews*. 2019 Oct;20(10):e592-e593. PMID: 31575781
8. **Hsiang MS**, Ntshalintshali N, Kang et al. [Active case-finding for malaria: A three-year national evaluation of optimal approaches to detect infections and hotspots through reactive case detection in the low transmission setting of Eswatini](#). *Clin Infect Dis*. 2019 May 16. PMID: 31095677
9. Jacobson JO, Smith JL, Cueto C, Chisenga M, Roberts K, **Hsiang M**, Gosling R, Mumbengegwi D, Bennett A. [Assessing malaria risk at night-time venues in a low-transmission setting: a time-location sampling study in Zambezi, Namibia](#). *Malar J*. 2019 May 22;18(1):179. PMID: 31118028
10. Janjua MB, Toll B, Ghandi S, **Sebert ME**, Swift DM, Pahys JM, Samdani AF, Hwang SW. [Risk Factors for Wound Infections after Deformity Correction Surgery in Neuromuscular Scoliosis](#). *Pediatr Neurosurg*. 2019;54(2):108-115. PMID: 30783030
11. Liu Z, Mar KB, **Hanners NW**, Perelman SS, Kanchwala M, Xing C, Schoggins JW, Alto NM. [A NIK-SIX signalling axis controls inflammation by targeted silencing of non-canonical NF- \$\kappa\$ B](#). *Nature*. 2019 Apr;568(7751):249-253. PMID: 30894749
12. McCauley K, Durack J, Valladares R, et al, **Gill M**, et al.; NIAID-sponsored Inner-City Asthma Consortium. [Distinct Nasal Airway Bacterial Microbiota Differentially Relate to Exacerbation in Pediatric Asthma](#). *J Allergy Clin Immunol*. 2019 Jun 13. PMID: 31201890
13. Roh ME, Tessema SK, Murphy M, et al, **Hsiang MS**, Greenhouse B. [High genetic diversity of Plasmodium falciparum in the low transmission setting of the Kingdom of Eswatini](#). *J Infect Dis*. 2019 Sep 13;220(8):1346-1354. PMID: 31190073.
14. Shahrestani S, **Evans A**, Tekippe EM, Copley LAB. [Kingella kingae Septic Arthritis in an Older-Than-Expected Child](#). *J Pediatric Infect Dis Soc*. 2019 Mar 28;8(1):83-86. PMID: 30016451

15. Tessema S, Wesolowski A, Chen A, et al, **Hsiang MS**, et al. [Using parasite genetic and human mobility data to infer local and cross-border malaria connectivity in Southern Africa](#). *Elife*. 2019 Apr 2;8. PMID: 30938286
16. Zahlanie Y, Almatrafi M, Filkins L, **Hsiang MS**. [Possible canine source of \*Streptococcus equi\* subspecies \*zooepidemicus\* causing meningitis in an infant](#). *IDCases*. 2019 May 31;17:e00568. PMID: 31194131

## Book Chapter

1. **McKinney JS**. (2019). [Salmonella: Nontyphoidal Salmonellosis; Enteric Fever \(Typhoid Fever\)](#). In: Kliegman RM, St. Geme III, JW (Eds.), *Nelson Textbook of Pediatrics*, (21<sup>st</sup> ed., chapter 225). Canada, Elsevier.
2. **Sue PK**, Karnsakul W. Hepatitis E Virus. In: Chang MW, Schwarz KB (editors)., [Viral Hepatitis in Children: Prevention and Management](#). New York NY: Springer 2019

## Other Publications

1. Most Z, **Hsiang MS**. [Helminthic Infections](#), *Pediatric Society of Greater Dallas Newsletter*, 3<sup>rd</sup> quarter, 2019.
2. **Hsiang MS**, Vilakati S, Dlamini N, et al. [Eswatini Targeted Parasite Elimination \(TPE\) Study: Evaluating the Effectiveness and Feasibility of Reactive Focal Mass Drug Administration versus Reactive Case Detection](#), September 2015 to August 2017. Report for Eswatini Ministry of Health (2019).