BIOGRAPHICAL SKETCH

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NAME: Elizabeth Lippner

eRA COMMONS USER NAME (credential, e.g., agency login):

POSITION TITLE: Medical Fellow, Allergy and Immunology

EDUCATION/TRAINING *(Begin with baccalaureate or other initial professional education, such as nursing, include postdoctoral training and residency training if applicable. Add/delete rows as necessary.)*

INSTITUTION AND LOCATION	DEGREE *(if applicable)*	Start Date MM/YYYY	Completion Date MM/YYYY	FIELD OF STUDY
University of Notre Dame	BA	8/2003	5/2007	Program of Liberal Studies & Pre-professional Studies (premed)
Loyola University Chicago	MA	8/2008	5/2009	Medical Sciences
Loyola Univ. Chicago Stritch School of Medicine	MD	8/2009	6/2013	Medicine
UCLA Pediatric Residency		7/2013	7/2016	Pediatrics
Stanford Allergy and Immunology Fellowship		8/2016	7/2018	Allergy and Immunology

A. Personal Statement

As a pediatric allergy and immunology physician, I strive to expand my knowledge of the mechanisms that underlie primary immunodeficiency diseases for the discovery of new therapeutic options. A greater understanding of the regulatory aspects of the immune system that are perturbed in various primary immunodeficiency diseases will allow me to provide cutting-edge and state of the art medical care to my patients. I have participated in scholastic research throughout my academic training in various forms, including HIV-related research and radiation oncology research that led to a research honors designation upon graduation from Loyola University Stritch School of Medicine. During my fellowship in allergy and immunology, I gained valuable experience investigating various immunology assays including quantitative assessments via flow cytometry and qualitative functional assessments such as STAT-phosphorylation and cytokine expression. Schimke Immuno-osseous Dysplasia (SIOD) is a rare disease that manifests in childhood. The mechanisms by which mutations in SMARCAL1 gene cause the clinical phenotype of SIOD is unknown. As an immunologist, my research lies in better understanding how mutations in SMARCAL1 lead to changes across multiple organs and organ systems, with the ultimate goal of improving treatment options for children with SIOD. T-cell development and function in these children is particularly impaired. In fact, a vast majority of these children develop clinically significant immune deficiency and suffer from recurrent infections by the time they reach mid-childhood. Under the mentorship of Dr. Lewis, an expert in SIOD, and Dr. Montgomery, an expert on next generation sequencing techniques including RNA-seq and ATAC-seq, I will examine the epigenome and transcriptome of t-cells of patients with SIOD. These insights into t-cell development and protein expression in patients with SIOD may also enhance our understanding of other t-cell immunodeficiency diseases.

B. Positions and Honors

Positions and Employment:

2007-2008: AmeriCorps Service position in the Health Access Project, Salt Lake City, UT
2009: Lab of Edward J. Campbell, Loyola Univ. Chicago SSOM, Maywood, IL
2009-2013: Research John Roeske, Loyola Medical Center Department of Radiation Oncology
2013-2016: UCLA Pediatric Residency, Los Angeles, CA
2016-2018: Fellowship in Allergy and Immunology, Stanford University, Stanford, CA
2018-Present: Postdoctoral Scholar in Pediatric Immunology, Stanford University, Stanford, CA
2018-Present: Clinical Instructor, Pediatrics Immunology and Allergy, Stanford University, Stanford, CA

Honors:
2003-2007: High Achievers Minority Honors Society, University of Notre Dame, Notre Dame, IN
2006: Summer Service Scholarship, Notre Dame, IN
2007: AmeriCorps Segal Education Award, National Service Scholarship
2010: Student Training in Research Scholarship, Loyola Univ. Chicago SSOM, Maywood, IL
2013: MD Honors in Research, Loyola Univ. Chicago SSOM, Maywood, IL
2013: MD Honors in Bioethics and Professionalism, Loyola Univ. Chicago SSOM, Maywood, IL
2016: Travel Scholarship: Fellow In-Training travel Scholarship ACAAI
2017: Travel Scholarship: Fellow In-Training travel Scholarship AAAAI
2017: Travel Scholarship: Fellow In-Training travel Scholarship ACAAI
2017: Clinical Immunology Society School in Primary Immunodeficiency Diseases travel award
2018: Travel Scholarship: Fellow In-Training travel Scholarship AAAAI
2018: Stanford Children's Health Quality Improvement Mini Seed Grant
2018: Pediatric Fellow Leadership Award

Licensure, Certification, and other Professional Memberships:
Medical Board of California: #A135609
DEA: #FL5408679
AAP Board Certification (current)

Professional Memberships and associations:
American College of Allergy, Asthma, Immunology
American Academy of Allergy, Asthma, Immunology
Clinical Immunology Society
Stanford Pediatrics Fellowship Council
American Academy of Pediatrics
American Medical Association

C. Contributions to Science

1. Investigation of the role of restriction proteins in HIV infection.

As a member of the Student Training in Approaches to Research Program, I studied the role of HIV restriction proteins using fluorescence microscopy under the mentorship of Dr. Edward J. Campbell. Using in vitro cellular fluorescence microscopy, I studied the physical association of Trim5α and *p62/sequestosome-1.* During my time in Dr. Campbell's lab, I gained experience in cell culture, generation of cell knock-out lines, gel-electrophoresis, and fluorescence microscopy. My project, "Characterizing the recruitment of TRIM5α and p62/sequestosome-1 to cytoplasmic bodies using FRAP", was part of a larger endeavor to characterize the physical associations of restriction proteins, as well as the molecular signaling pathways involved in HIV infection. I was a student research award finalist at the 2010 Stritch School of Medicine St. Albert's Day, and my data was included in a presentation at the 2012 Cold Spring Harbor Laboratory annual meeting on retroviruses.

2. Investigation of the use of image registration to increase efficiency and accuracy of delivering targeted radiation therapy.

As a medical student in the MD with Honors in research track, I worked with Dr. John C. Roeske and several other physicians in the radiation oncology department. My main project focused on using a fast Fourier transform method to create an image registration reference for each patient undergoing radiation therapy and comparing efficiency and accuracy of this image registration compared to conventional image registration. This largely arose of the difficulty of delivering a consistent gray dose to the neoplastic tissue while sparing surrounding tissue. I presented these results at the national RSNA conference. I also participated in other studies that evaluated the minimum necessary radiation exposure for accurate dose-planning radiographs and evaluating an atlas-based auto-segmentation program to enhance the efficiency and efficacy of dose planning in patients that underwent radiation therapy.

Conference Abstracts:

E Loo, MA; J Luce; J M Gray, BS; M A Hoggarth; J C Roeske*. Using a Fast Fourier Transform based pattern-matching algorithm to determine image registration parameters for use in Image Guided Radiotherapy.* Presented at RSNA conference in November 2012

A M Block, MD; J Luce; E Loo, MA; J Lin; M A Hoggarth; J C Roeske*. Quantitative Analysis of Image Quality Following Dose Reduction for kV Planar Radiographs Used for Image Guidance.* Presented at RSNA conference in November 2012 by Alec Bloc, MD. Not published.

A M Block, MD; J Luce; E Loo, MA; J Y Lin; M A Hoggarth; J C Roeske, *Analysis and Reduction of Daily kV Planar Imaging Dose in IGRT Patients.* International Journal of Radiation Oncology • Biology • Physics. 11/2012; 84(3):S214. Published.

Tracy S. Bray, MD, John Roeske, PhD, Matthew Quinn, PhD, Ming Gao, PhD, Elizabeth Loo, MA, Desler Javier, MS Mohammed Siddiqui, CMD, Suneel N. Nagda, MD. *Using Atlas-Based Auto-Segmentation in 4-Dimensional CT-based Radiation Therapy Planning for Patients with Locally Advanced Pancreatic Cancer.* International Journal of Radiation Oncology • Biology • Physics. 11/2010, 78(3): S685-S686. Published.

Papers:

Luce J, Gray J, A. Hoggarth M, Lin J, **Loo E**, I. Campana M, et al. Medical Image Registration Using the Fourier Transform. International Journal of Medical Physics, Clinical Engineering and Radiation Oncology. 2014;3:49–55. DOI:10.4236/ijmpcero.2014.31008

3. Investigation of allergic disease states

As a fellow in allergy and immunology, I explored risk factors associated with poor outcomes in morbidity and mortality in patients with allergic diseases. Defining disease control has become integral to management of chronic disease. Despite the fact that allergic diseases, and in particular food allergy, are chronic disease we are still learning what risk factors translate to increased morbidity and mortality. In an effort to define food allergy disease control, my work included summation of the literature on Emergency Department visits for anaphylaxis and the development of food allergy related to early life food introduction. I also completed a survey study of pediatricians and allergy specialists regarding utilization of a clinical tool for assessment of food allergy control, which was recently accepted for publication.

Publications:

Lippner E, Sicherer SH, Land MH, Schatz M, Dinakar C. Needs assessment survey for a food allergy control tool. The Journal of Allergy and Clinical Immunology: In Practice. 2019 Feb 1;7(2):701–703.e2. PMID: 30317004. DOI: 10.1016/j.jaip.2018.09.035

Lippner E, Sicherer SH, Land MH, Schatz M, Dinakar C. Feasibility Survey for a Food Allergy Control Tool. Journal of Allergy and Clinical Immunology. 2018;141(2, Supplement):AB407. doi: https://doi.org/10.1016/j.jaci.2017.12.960.

Lippner E, Dinakar C. Increasing Emergency Department Visits for Anaphylaxis, 2005-2014. Pediatrics. 2017;140(Supplement 3): S188-S. doi:10.1542/peds.2017-2475CC.

Lippner E, Dinakar C. Timing of Allergenic Food Introduction to the Infant Diet and Risk of Allergic or Autoimmune Disease: A Systematic Review and Meta-analysis. Pediatrics. 2017;140(Supplement 3): S194-S. doi: 10.1542/peds.2017-2475MM.

D. Research Support

Current:

1. Stanford Adult and Pediatric Rheumatology Post-Doctoral Fellow
2018-2019
Funded by the National Institutes of Health, T32 5T32AR050942. PI Christy Sandborg & William Robinson
Faculty Mentor: David B. Lewis

2. Stanford Children's Health Quality Improvement Mini Seed Grant
2018- present