

BIOGRAPHICAL SKETCH
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NAME: Knight, Andrea

eRA COMMONS USER NAME: knightan

POSITION TITLE: Assistant Professor (C-E) of Pediatrics, University of Pennsylvania Perelman School of Medicine; Attending Physician, Children's Hospital of Philadelphia

EDUCATION/TRAINING

INSTITUTION AND LOCATION	DEGREE (if applicable)	Completion Date MM/YYYY	FIELD OF STUDY
University of Toronto, Canada	B.Sc	05/2000	Human Biology
Columbia College of Physicians & Surgeons, New York, NY	M.D	05/2004	Medicine
University of Pennsylvania, Philadelphia, PA	M.S.C.E	05/2014	Clinical Epidemiology

A. Personal Statement

My research focuses on neuropsychiatric function in pediatric systemic lupus erythematosus (SLE). Through my completion of a clinical pediatric rheumatology fellowship, a research fellowship in pediatric hospital epidemiology and outcomes and a Master of Science in Clinical Epidemiology, I have obtained clinical expertise in pediatric SLE, and a foundation in clinical epidemiology and biostatistics. Using electronic surveys, primary and secondary claims data analysis, and mixed methods approaches, I have led studies to investigate the burden of psychiatric morbidity in pediatric SLE, associated risk factors and disparities, and barriers and facilitators to mental health intervention in pediatric rheumatology. I am currently leading a research workgroup for the SLE Mental Health Section of the Childhood Arthritis & Rheumatology Research Alliance (CARRA), to investigate strategies for improving care of youth with SLE and psychiatric comorbidity. I am also pursuing clinical and translational methods to understand the impact of SLE on cognitive health, with the future goal of improving management strategies for SLE patients with neuropsychiatric disorders.

- Joyce Chang, David Mandell, Andrea Knight (2017). High Health Care Utilization Preceding Diagnosis of Systemic Lupus Erythematosus in Youth. *Arthritis Care and Research*, in press. doi: 10.1002/acr.23485
- Andrea Knight, Laura Trupin, Patricia Katz, Edward Yelin, Erica Lawson (2018). Depression Risk in Young Adults with Childhood- and Adult-Onset Lupus: 12 Years of Follow-up. *Arthritis Care and Research*, 70(3). PMID: PMC5700870
- Andrea Knight, Amy Kogon, Matthew Matheson, Brad Warady, Susan Furth, Stephen Hooper (2017). Cognitive Function in Children with Lupus Nephritis: A Cross-Sectional Comparison to Children with Other Glomerular Chronic Kidney Diseases. *Journal of Pediatrics*, 189:181-188.
- Andrea Knight, Michelle Vickery, Eyal Muscal, Alaina Davis, Julia G. Harris, Arzu Soybilgic, Karen Onel, Laura E. Schanberg, Tamar Rubinstein, Beth S. Gottlieb, David S. Mandell, Emily von Scheven and for the CARRA Investigators (2016). Identifying Targets for Improving Mental Health Care of Adolescents with Lupus: Perspectives from Pediatric Rheumatology Clinicians in the United States and Canada. *Journal of Rheumatology*, 43(6).

B. Positions and Honors

Positions and Employment

2004 – 2007	Resident, Department of Pediatrics, The Children's Hospital of Philadelphia, Philadelphia, PA
2004 – 2007	Instructor, University of Pennsylvania Perelman School of Medicine, Philadelphia, PA
2007 – 2010	Neonatology House Physician, Department of Pediatrics, Children's Hospital of Philadelphia, Philadelphia, PA
2007 – 2010	Clinical Associate in Pediatrics, University of Pennsylvania Perelman School of Medicine, Philadelphia, PA
2010 – 2013	Fellow, Division of Rheumatology, Children's Hospital of Philadelphia, Philadelphia, PA
2013 –	Attending Physician, Division of Rheumatology, Children's Hospital of Philadelphia, Philadelphia, PA
2013 –	Assistant Professor-CE, Department of Pediatrics, University of Pennsylvania Perelman School of Medicine, Philadelphia, PA
2013 –	Faculty, Center for Pediatric Clinical Effectiveness, Children's Hospital of Philadelphia, Philadelphia, PA
2014 –	Faculty, PolicyLab, Children's Hospital of Philadelphia, Philadelphia, PA

Other Experience and Professional Memberships

2000 –	Member, American Medical Association
2004 –	Member, American Academy of Pediatrics, Section on Rheumatology (2012-present)
2010 –	Member, American College of Rheumatology
2011 –	Member, CARRA, Subcommittee for Lupus Health-related Quality of Life (2012-2014)
2014 –	Member, PR-COIN, SLE Steering Committee
2015 –	Workgroup Leader, CARRA SLE Mental Health Section
2015, 2017	Abstract Reviewer, Health Services Research Category for American College of Rheumatology National Meeting
2015 –	Manuscript Reviewer, Arthritis Research & Therapy, JAMA Pediatrics, Arthritis Care & Research, Lupus, Pediatric Rheumatology Online Journal, Journal of Rheumatology, Rheumatology International, Health and Quality of Life Outcomes, Jornal de Pediatria
2017 -	CARRA Grant Scientific Review Committee Member
2017 -	CARRA Consensus Treatment Plan Committee Member

Honors

2004	Humanism in Medicine Award, Arnold P Gold Foundation
2004	Election to Alpha Omega Alpha Honor Medical Society
2007	Advocacy Award, Community Pediatrics & Advocacy Program, Children's Hospital of Philadelphia
2011	American College of Rheumatology/REF Amgen Fellowship Training Award
2012	NIH Extramural Pediatric Research Loan Repayment Program
2012	Anna Louise Harmon Preceptorship, Lupus Foundation of America
2013	Faculty Scholar Award, Center of Excellence for Diversity in Health Education and Research, University of Pennsylvania
2014	Pilot Grant Award, Center for Pediatric Clinical Effectiveness, Children's Hospital of Philadelphia
2015	NIH Extramural Pediatric Research Loan Repayment Program
2016	Junior Investigator Pilot Grant Award, Clinical and Translational Research Center, Children's Hospital of Philadelphia
2017	Novel Research Award, Lupus Research Alliance
2017	Investigator Award, Rheumatology Research Foundation
2017	Chair's Initiative Awardee, "Integrating Lupus Care", Children's Hospital of Philadelphia

C. Contribution to Science

1. My work has documented the burden of health care and psychiatric morbidity for youth with SLE. Children and adolescents with SLE are at risk for significant morbidity and mortality, high health care utilization, and disruption of psychosocial functioning due to SLE and its treatment. These studies reported high health care utilization before and after SLE diagnosis, and high prevalence of psychiatric diagnoses and psychotropic medication use. We also found significant racial/ethnic disparities in healthcare utilization, inpatient mortality, psychiatric diagnoses and treatment. These studies demonstrate a need for a systematic approach to management of pediatric SLE to optimize equitable and comprehensive care.
 - a. **Andrea Knight**, Pamela Weiss, Knashawn Morales and Ron Keren (2014). National Trends in Pediatric Lupus Hospitalizations in the United States: 2000-2009. *Journal of Rheumatology*, 41(3), 539-46. PMID: PMC4789141
 - b. **Andrea Knight**, Ming Xie, David Mandell (2016). Disparities in Psychiatric Diagnosis and Treatment for Youth with Systemic Lupus Erythematosus: Analysis of a National US Medicaid Sample. *Journal of Rheumatology*, 43(7), 1427-33.
 - c. Joyce Chang, David Mandell, **Andrea Knight** (2017). High Health Care Utilization Preceding Diagnosis of Systemic Lupus Erythematosus in Youth. *Arthritis Care & Research*, in press. doi: 10.1002/acr.23485
2. My work has also focused on identifying risk factors contributing to psychiatric morbidity in pediatric SLE, which can lead to poor clinical and psychosocial outcomes. Understanding risk factors for psychiatric disorders is important for targeted, early intervention to improve outcomes. We established high levels of depression, anxiety and suicidal symptoms in youth with SLE compared to healthy peers, but similar levels compared to youth with type 1 diabetes mellitus; common disease-related risk factors for depression included longer disease duration and poor disease control. We then examined a longitudinal cohort of adults with SLE, finding higher depression risk in those with pediatric vs adult-onset disease, independent of disease duration. The results of these studies indicate a need for further investigation of the mechanisms underlying these disease-related risk factors for psychiatric dysfunction in SLE.
 - a. **Andrea Knight**, Pamela Weiss, Knashawn Morales, Marsha Gerdes, Allyson Gutstein, Michelle Vickery and Ron Keren (2014). Depression and Anxiety and their Association with Healthcare Utilization in Pediatric Lupus and Mixed Connective Tissue Disease Patients: A Cross-Sectional Study. *Pediatric Rheumatology*, 12(42). PMID: PMC4169806
 - b. **Andrea Knight**, Pamela Weiss, Knashawn Morales, Marsha Gerdes, Melissa Rearson, Michelle Vickery, Ron Keren (2015). Identifying Differences in Risk Factors for Depression and Anxiety in Pediatric Chronic Disease: A Matched Cross-Sectional Study of Youth with Lupus/Mixed Connective Tissue Disease and Their Peers with Diabetes. *The Journal of Pediatrics*, 167(6). PMID: PMC5289225
 - c. **Andrea Knight**, Laura Trupin, Patricia Katz, Edward Yelin, Erica Lawson (2018). Depression Risk in Young Adults with Childhood- and Adult-Onset Lupus: 12 Years of Follow-up. *Arthritis Care and Research*, 70(3). PMID: PMC5700870
3. Findings from the above work indicated high psychiatric morbidity, but low mental health treatment rates for youth with SLE. Further, youth with depression had less frequent primary care visits than those without, implicating a role for pediatric rheumatologists in mental health intervention. Through a national survey of pediatric rheumatologists, and mixed methods study of patients and parents, we established: i) an unmet need for improved mental healthcare, ii) acceptability of mental health screening, iii) perceived barriers and facilitators to mental health intervention in pediatric rheumatology, and iv) a model for understanding the psychosocial burden of SLE. I served as the primary investigator for these studies.
 - a. **Andrea Knight**, Michelle Vickery, Alexander Fiks, Frances Barg (2015): Barriers and facilitators for mental healthcare in pediatric lupus and mixed connective tissue disease: a qualitative study of youth and parent perspectives. *Pediatric Rheumatology*, 13(52). PMID:

PMC4657343

- b. **Andrea Knight**, Michelle Vickery, Eyal Muscal, Alaina Davis, Julia G. Harris, Arzu Soybilgic, Karen Onel, Laura E. Schanberg, Tamar Rubinstein, Beth S. Gottlieb, David S. Mandell, Emily von Scheven and for the CARRA Investigators (2016). Identifying Targets for Improving Mental Health Care of Adolescents with Lupus: Perspectives from Pediatric Rheumatology Clinicians in the United States and Canada. *Journal of Rheumatology*, 43(6).
- c. **Andrea Knight**, Michelle Vickery, Alex Fiks, Frances Barg (2016): The Illness Experience of Youth with Lupus/Mixed Connective Tissue Disease: A Mixed Methods Analysis of Patient & Parent Perspectives. *Lupus*, 25(9).

Complete List of Published Work in MyBibliography:

<https://www.ncbi.nlm.nih.gov/sites/myncbi/andrea.knight.1/bibliography/49431736/public/?sort=date&direction=ascending>

D. Additional Information: Research Support and/or Scholastic Performance

Ongoing Research Support

Junior Investigator Pilot Grant Program, CHOP Knight (PI) 07/01/16-06/30/18
Brain Function in Pediatric Neuropsychiatric Lupus

The goal of this pilot study is to use multi-modal neuroimaging to identify correlates of brain dysfunction to inflammatory features, cognitive function and psychiatric phenotypes in pediatric-onset SLE.

Role: PI

Pediatric Development Fund, CHOP Knight (PI) 07/01/13-06/30/18
Mental Health in Pediatric SLE

The goal of this research program is to determine the impact of mental health disorders on clinical and psychosocial outcomes, as well as effective strategies to improve mental health care for patients with pediatric SLE.

Role: PI

Large Proposal Grant, CARRA Knight (PI) 05/01/17-04/31/18
The Impact of Mental Health Disorders on Medication Adherence & Health Care Utilization in Youth with Lupus

The main objective of this proposal is to examine the relationship between mental health disorders, medication adherence and health care utilization in youth with SLE.

Role: PI

Novel Research Award, LRA Knight (PI) 05/01/17-04/30/20
Multi-level Biomarkers for Psychiatric Disorders in Pediatric Lupus – Examining Brain Structure, Function & Development

The main objective of this proposal is to correlate affective function in pSLE, measured by longitudinal psychiatric assessment (of depression, anxiety and psychosis spectrum), to advanced multimodal MRI, neurocognitive function, and serum biomarkers.

Role: PI

Investigator Award, RRF Knight (PI) 07/01/17-06/30/20
Multimodal Neuroimaging in Pediatric Lupus

The goal of this study is to quantify the effect of pSLE on brain structure, function and development, utilizing multimodal neuroimaging; and 2) to determine multimodal neuroimaging correlates of cognitive and affective function in pSLE.

Role: PI