BIOGRAPHICAL SKETCH

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NAME: Ringold, Sarah

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

POSITION TITLE: Assistant Professor

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)*	Completion Date MM/YYYY	FIELD OF STUDY
Princeton University, Princeton, NJ	BA	05/1995	Ecology & Evolutionary Biology
Harvard Medical School, Boston, MA	MD	06/2001	Medicine
University of Washington and Seattle Children's Hospital, Seattle, WA		06/2004	Internship and residency in pediatrics
University of Washington and Seattle Children's Hospital, Seattle, WA		06/2008	Fellowship in pediatric rheumatology
University of Washington, Seattle, WA	MS	06/2008	Epidemiology

A. Personal Statement

Over the past several years, I have been actively involved with CARRA through a number of roles, including JIA Committee Vice Chair, a previous member of the Finance Committee, Registry Intern, and through involvement in several CARRA research collaborations – including the publication of manuscripts using data from the legacy CARRA Registry and by serving as a co-leader of the development of CTPs for poly-JIA. I am currently co-PI of STOP-JIA (Start Time Optimization of biologics in Poly-JIA), which is assessing the comparative effectiveness of the poly-JIA CTPs and leveraging the CARRA Registry. I also serve as the CARRA site PI for Seattle Children's, which has successfully enrolled patients into a number of CARRA studies, including the current Registry. As Chair of the JIA Committee my primary goals would be to continue to support the workgroups and facilitate communication and collaborations between them, and to maintain an inclusive scientific agenda and to make certain that both new and existing workgroups have adequate support to move their projects forward.

a. Ringold S, Nigrovic PA, Feldman BM, Tomlinson GA, von Scheven E, Wallace CA, Huber AM, Schanberg LE, Li SC, Weiss PF, Fuhlbrigge RC, Morgan EM, Kimura Y. The Childhood Arthritis & Rheumatology Research Alliance Consensus Treatment Plans: Towards Comparative Effectiveness in the Pediatric Rheumatic Diseases. Arthritis Rheumatol. 2018 May;70(5):669-678. PMID: 29333701
b. Ringold S,* Weiss PA,* Colbert RA, Morgan-Dewitt E, Lee T, Onel K, Prahalad S, Schneider R, Shenoi S, Vehe RK, Limura Y. Childhood Arthritis and Rheumatology Research Alliance Consensus Treatment Plans for New Onset Polyarticular Juvenile Idiopathic Arthritis. *Arthritis Care Res.* 2013; 66(7):1063-72. *Co-first authors. PMID: 24339215 PMC4467832
c. Ringold S, Beukelman T, Nigrovic P, Kimura Y for the CARRA Registry Investigators. Race, Ethnicity, and Disease Outcomes in Juvenile Idiopathic Arthritis: A cross-sectional analysis of the Childhood Arthritis and Rheumatology Research Alliance (CARRA) Registry. *J Rheumatol*. 2013; 40(6):936-42. PMID: 23588937
d. Ringold S, Hendrickson A, Abramson L, Beukelman T, Blier PR, Bohnsack J, Chalom EC, Gewanter HL, Gottlieb B, Hollister R, Hsu J, Hudgins A, Ilowite NT, Klein-Gitelman M, Lindsley C, Lopez Benitez JM,

Lovell DJ, Mason T, Milojevic D, Moorthy LN, Nanda K, Onel K, Prahalad S, Rabinovich CE, Ray L, Rouster-Stevens K, Ruth N, Shishov M, Spalding S, Syed R, Stoll M, Vehe RK, Weiss JE, White AJ, Wallace CA, Sobel RE. A novel method to collect medication adverse events in juvenile arthritis: Results from the Childhood Arthritis and Rheumatology Research Alliance Enhanced Drug Safety Surveillance Project (EDSSP). *Arthritis Care Res*. 2014; 67(4):529-37. PMID: 25331530

B. Positions and Honors

Positions and Employment

2004-2005	Morris Fishbein Fellowship in Medical Editing, *JAMA*, Chicago, IL
2008-2009	Acting Instructor in Rheumatology, Department of Pediatrics, University of Washington School of Medicine, Seattle Children's Hospital, Seattle, WA
2009-2011	Acting Assistant Professor in Rheumatology, Department of Pediatrics, University of Washington School of Medicine, Seattle Children's Hospital, Seattle, WA
2011-	Assistant Professor in Rheumatology, Department of Pediatrics, University of Washington School of Medicine, Seattle Children's Hospital, Seattle, WA

Other Experience and Professional Memberships

2005-	Member, American College of Rheumatology (ACR)
2005-	Member, Childhood Arthritis and Rheumatology Research Alliance (CARRA)
2005-2008	Member, *JAMA* Editorial Board
2005-2008	Co-Section Editor, *JAMA* On-Call
2006-2008	Member, ACR Fellows Subcommittee
2006-2008	Fellow Representative, ACR Pediatric Subcommittee
2007-2008	Member, ACR Pediatric Residents Program Committee
2012-2013 & 2017-	Co-Leader, ACR Juvenile Idiopathic Arthritis Treatment Recommendations
2010-	CARRA Site Principal Investigator for Seattle Children's Hospital
2010-	Member, Pediatric Rheumatology Collaborative Study Group (PRCSG)
2012-2017	Junior Clinical Investigator Member of the PRCSG Advisory Council
2013-2014	Member, ACR Rheumatology Research Foundation Scientific Advisory Council
2008-2013 & 2015-2018	Member, ACR Classification and Response Criteria Subcommittee
2016-	Co-leader, CARRA JIA Inactive Disease Workgroup
2016-2018	Intern, CARRA Registry
2016-	Vice Chair, CARRA JIA Subcommittee

Honors

2008	Seattle Children's Hospital Fellows' Day Research Award for Poster Presentation
2008	REF/Amgen Pediatric Rheumatology Research Award
2012	Research Day Abstract Award, Seattle Children's Hospital Center for Clinical and Translation Research

C. Contributions to Science

1. Disease activity assessment in JIA. Starting in fellowship, my research focused on disease activity assessment in JIA. The measurement of disease activity in JIA presents an ongoing challenge, given the multidimensional nature of the disease and limitations of the current measures to capture both changes in disease activity and disease state. My work in this area addressed two main areas: 1) applying newly developed criteria for inactive disease to a cohort of patients with JIA to understand whether outcomes have improved since the introduction of biologic medications and 2) the testing of the validity of measures of disease activity used for adult rheumatoid arthritis in JIA. The latter work identified some deficiencies in the ability of the adult measures to distinguish inactive disease and demonstrated the need for JIA-specific indices.

a. Ringold S, Seidel K, Koepsell T, Wallace CA. Inactive Disease in Polyarticular Juvenile Idiopathic Arthritis: current patterns and associations. *Rheumatology*. 2009;48(8):972-977. PMID: 19535609

b. Ringold S, Chun Y, Singer NG. Associations between the pediatric American College of Rheumatology response measures and the continuous measures of disease activity used in adult rheumatoid arthritis: a secondary analysis of clinical trial data from children with polyarticular-course juvenile idiopathic arthritis. *Arthritis Rheum.* 2009;60(12):3776-3783. PMID: 19950286
c. Ringold S, Bittner R, Neogi T, Wallace CA, Singer NG. Performance of rheumatoid arthritis disease activity measures and juvenile arthritis disease activity scores in polyarticular-course juvenile idiopathic arthritis: Analysis of their ability to classify the American College of Rheumatology pediatric measures of response and the preliminary criteria for flare and inactive disease. *Arthritis Care Res*. 2010;62(8):1095-102. PMID: 20506561

2. Assessment of health-related quality of life in JIA. My interest in disease activity assessment in JIA led directly to projects assessing quality of life in children with JIA and the associations between quality of life and fatigue in these children. This research focused primarily on fatigue, given the known association between fatigue and adult rheumatoid arthritis and the high prevalence of fatigue in other pediatric chronic diseases. This research found that children with inactive disease had less fatigue than children with active disease. Furthermore, functional ability was associated with fatigue and pain was important confounder of the relationship between disease activity and fatigue. I currently serve as co-Investigator on a NIH-funded project led by Drs. Reeve and Schanberg (co-I on this current proposal) that is testing the clinical effectiveness of the pediatric PROMIS® measures in juvenile idiopathic arthritis and pediatric systemic lupus erythematosus.

a. Ringold S, Wallace CA, Rivara FP. Health-Related Quality of Life, Physical Function, Fatigue and Disease Activity in Children with Established Polyarticular Juvenile Idiopathic Arthritis. *J Rheumatol*; 2009;36(6):1330-1336. PMID: 22807336 PMC4117647
b. Ringold S, Ward TM, Wallace CA. Disease activity and fatigue in juvenile idiopathic arthritis. *Arthritis Care Res*. 2013; 65(3):391-397. PMCID: PMC4117647
c. Ward TM, Beebe DW, Landis CA, Chen ML, Ringold S, Wallace CA. Sleep Disturbances and Neurobehavioral Performance in Juvenile Idiopathic Arthritis. *J Rheumatol*. 2017; 44(3):326-222. PMID: 28089981 PMC5334283
d. Ward TM, Chen ML, Landis CA, Ringold S, Beebe DW, Pike KC, Wallace CA. Congruence between Polysomnography Obstructive Sleep Apnea and the Pediatric Sleep Questionnaire: Fatigue and Health-Related Quality of Life in Juvenile Idiopathic Arthritis. *Qual Life Res*. 2017;26(3):779-788. PMID: 27987106 PMC5310971

3. Development of consensus guidelines and treatment recommendations for JIA. Despite a number of FDA approved therapies for JIA, there remains significant uncertainty regarding the sequence with which therapies should be introduced and significant variability in treatment approaches between providers. Treatment recommendations and consensus treatment plans have the potential to standardize therapy and facilitate comparative effectiveness research. I have co-led two important projects in this area. Along with Dr. Pamela Weiss, I led the development of the American College of Rheumatology (ACR) treatment recommendations for systemic JIA using RAND methodology. I also co-led, along with Drs. Weiss and Kimura the development of consensus treatment protocols for the Childhood Arthritis and Rheumatology Research Alliance (CARR). This project involved a focused literature search and obtaining consensus among workgroup members at the CARRA annual meetings. I am currently leading the development of the update ACR treatment recommendations using GRADE methodology, with expected completion in the next few months. These projects have strengthened my knowledge base of current treatment data for JIA and current treatment practices and improved my leadership abilities, which will ensure my successful completion of the current proposal.

a. Ringold S,* Weiss PA*, Beukelman T, Mogan-Dewitt E, Ilowite N, Kimura Y, Laxer RM, Lovell D, Nigrovic P, Robinson A, Vehe R. 2013 update of the 2011 American College of Rheumatology recommendations for the treatment of juvenile idiopathic arthritis. *Arthritis Rheum*. 2013; 65(10):2499-512. PMID: 24078300 PMC5408573
b. Ringold S,* Weiss PA,* Colbert RA, Morgan-Dewitt E, Lee T, Onel K, Prahalad S, Schneider R, Shenoi S, Vehe RK, Limura Y. Childhood Arthritis and Rheumatology Research Alliance Consensus Treatment Plans for New Onset Polyarticular Juvenile Idiopathic Arthritis. *Arthritis Care Res.* 2013; 66(7):1063-72. *Co-first authors. PMID: 24339215 PMC4467832

Complete List of Published Work in MyBibliography:
http://www.ncbi.nlm.nih.gov/sites/myncbi/sarah.ringold.1/bibliography/44885455/public/?sort=date&direction=ascending

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

Ongoing Research Support

PaCR-2017C2-8177 Schanberg (PI) 09/01/2018 – 08/30/2022
PCORI
Improving Outcomes in Limited Juvenile Idiopathic Arthritis
The primary Aim of this proposal is to evaluate the effectiveness of a 24-week course of treatment with T-cell co-stimulation inhibition (abatacept) plus usual care versus usual care alone to prevent the development of polyarthritis (5 or more joints with arthritis), uveitis, or need for treatment with systemic medication within 18 months of enrollment among children with recent-onset limited JIA.
Role: Multi-PI

R21 NR017471-01A1 Ward (PI) 07/01/2018-06/30/2020
NIH/NINR
Self-Management of Sleep Health in Children with Juvenile Idiopathic Arthritis (JIA) and their Parent: A Pilot study
This project focuses on an understudied population targeting self-management interventions to improve sleep in children with Juvenile Idiopathic Arthritis (JIA) and their parent.
Role: Co-Investigator

1 U19 AR069522-01 Reeve (PI) 09/30/2015 – 09/29/2019
NIH/NIAMS
Enhancing Clinical Meaningfulness and Usefulness of PROMIS Pediatric Measures Via Validation in Children and Adolescents with Rheumatic Disease, Cancer or Inflammatory Bowel Disease
The goal of this project is to provide additional validation of the PROMIS pediatric measures by testing their properties in cohorts of children with different primary diagnoses.. Findings from the research project will provide a rich and rigorously evaluated set of pediatric measures for widespread use in clinical research and care to improve efforts to address the full needs of children and adolescents with serious chronic medical conditions.
Role: Co-Investigator

No Grant Number Curtis (PI) 08/01/2018-07/30/2019
PCORI
Harnessing PCORnet to Study Comparative Effectiveness and Safety of Biologic Therapies
The aim is to the comparative clinical effectiveness of various biologic and other medications using a variety of disease-specific and generic patient reported outcome domains.
Role: Co-Investigator

No Grant Number Lim (PI) 07/01/2017 – 06/30/2019
Childhood Arthritis and Rheumatology Research Alliance (CARRA)
Identifying Trajectories of Disease Activity States in Juvenile Idiopathic Arthritis (JIA) Early After Treatment: Shortening Time to Decision to Change Treatment
The purpose of this project to identify individuals enrolled in trials of biological therapies who will not respond to therapy earlier than 16 weeks by studying their treatment response trajectories.
Role: Co-Investigator

Completed Research Support

U34 AR066294 Schanberg (PI) 07/1/2016-6/30/2018
NIH/NIAMS
Comparison of Methotrexate and Biologics in Polyarticular JIA
This is a one year planning grant to finalize the proposal for a randomized clinical trial for children with polyarticular JIA that will include methotrexate and biologic medications with different mechanisms of action.

Role: Multi-PI

CER-1408-20534 Kimura (PI) 11/01/2015 – 10/31/2018
PCORI
Evaluation of the CARRA Consensus Treatment Plans for Polyarticular JIA
This project will assess the comparative effectiveness of different initial treatment approaches for new-onset polyarticular JIA.
Role: Co-Principal Investigator

No Grant Number Ringold (PI) 08/01/2016 – 7/30/2017
CARRA
Sequences of Medication Use in Polyarticular Juvenile Idiopathic Arthritis
This project is describing overall patterns of medication use for children with JIA using data from the CARRA Registry.
Role: Principal Investigator

No Grant Number Curtis (PI) 08/01/2018-07/30/2019
PCORI
Harnessing PCORnet to Study Comparative Effectiveness and Safety of Biologic Therapies
The aim is to the comparative clinical effectiveness of various biologic and other medications using a variety of disease-specific and generic patient reported outcome domains.
Role: Co-Investigator 09/01/2015 - 07/31/2016
Crescendo Biosciences, Inc.
Development of a multi-biomarker disease activity assay for JIA
The primary objective of this project is to assess the preliminary validity of a multi-biomarker disease activity assay in JIA.
Role: Principal Investigator

1U34AR064496 Beukelman (PI) 09/1/2014-8/31/2015
NIH/NIAMS
The Effectiveness of Methotrexate to Prevent Extension of Early Limited JIA
This was a one year planning grant to finalize the proposal for a randomized clinical trial for methotrexate in early limited juvenile idiopathic arthritis.
Role: Consultant