

J. Michelle Kahlenberg M.D., Ph.D.

Giles G. Bole MD and Dorothy Mulkey MD Research Professor of Rheumatology
Associate Professor of Internal Medicine
Division of Rheumatology, Department of Medicine
University of Michigan Medical School
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EDUCATION AND TRAINING

08/1994 - 05/1998 B.S., Biology, *summa cum laude*, Denison University, Granville, OH
07/1998 - 12/2004 Ph.D., Molecular Mechanisms of Disease, Case Western Reserve University School of Medicine, Cleveland, OH
07/1998 - 05/2006 M.D., Case Western Reserve University School of Medicine, Cleveland, OH
06/2006 - 06/2009 Internal Medicine Residency, University Hospitals of Cleveland, Case Medical Center, Cleveland, OH
07/2009 - 06/2011 Rheumatology Fellowship, University of Michigan, Ann Arbor, MI

CERTIFICATION AND LICENSURE

- DEA Registration # FK1955105, expires 12/31/2021
- Michigan Medical License #4301093324, expires 1/31/2021
- Michigan Controlled Substance License #5315039453, expires 1/31/2021
- Board Certification in Internal Medicine ABIM # 306180, certified through 12/31/2019
- Board Certification in Rheumatology ABIM# 306180, certified through 12/31/2021

ACADEMIC, ADMINISTRATIVE, AND CLINICAL APPOINTMENTS

12/2008 - 06/2010 Fee Basis Physician for Wade Park VA Medical Center, Cleveland, OH
Worked PRN as Emergency Room Attending
07/2010 - 07/2012 Fee Basis Physician for Ann Arbor VA Medical Center, Ann Arbor, MI
Worked PRN as Emergency Room Attending
07/2011 - 06/2012 Clinical Lecturer, University of Michigan Hospital and Health Systems,
Department of Internal Medicine, Division of Rheumatology, Ann Arbor, MI
07/2012 – 08/2018 Assistant Professor, University of Michigan Hospital and Health
Systems, Department of Internal Medicine, Division of Rheumatology,
Ann Arbor, MI
09/2018 – present Associate Professor with tenure, University of Michigan Hospital and
Health Systems, Department of Internal Medicine, Division of
Rheumatology, Ann Arbor, MI
11/2018 – present Associate Director, Michigan Lupus Program
09/2019 – present Associate Chief of basic and translational research, Division of
Rheumatology
09/2020 – present Associate Professor of Dermatology, University of Michigan Hospital and
Health Systems, Ann Arbor, MI

RESEARCH INTERESTS

Globally, I am interested in understanding how the innate immune system impacts the development of autoimmune diseases and their subsequent complications. Specifically, I am interested in mechanisms by which innate immunity is dysregulated in autoimmune disease and how this can influence the development of disease flares. I have a strong background in inflammasome and interferon biology, and I have focused my research on how these pathways impact systemic lupus and other diseases. We utilize translational (analysis of human samples) and basic (murine models) to generate this understanding. My ultimate goals are to use the knowledge we gain to prevent patients with a pre-disposition for autoimmunity from getting sick and to develop novel and less toxic therapies when illness strikes.

CLINICAL INTERESTS

My clinical interests center around my research interests with a focus on sick patients that are unable to find answers or care in traditional outpatient settings. I continue to hone two areas of clinical expertise. The first is treating patients with dysregulated innate immunity, such as seen in auto-inflammatory diseases such as TRAPS, FCAS, and FMF. These disorders have dysfunctional inflammasomes and are treated with novel IL-1 blockade drugs. Secondly, I treat complicated lupus patients, especially those with refractory skin disease. Both of these patient populations benefit from my research experience and also contribute to our research work. This complementary approach allows me to ask and answer novel clinical and translational questions.

GRANTS

Active Grant Support

Sponsor	NIH/NIAMS
Grant Number	P30AR075043
Title	University of Michigan Skin Biology and Disease Resource-Based
Center	(UM-SBDRC)
PI	Johann Gudjonsson, M.D, Ph.D.
Inclusive Dates	06/01/2019 - 05/31/2024
Role	Co-Director of Murine Core (Co-Investigator)
Funding Amount	Annual Direct Costs: \$500,000 Total Award Amount: \$3,786,640
Description	The overall goal of the UM-SBDRC is to leverage our strengths in genomic editing, bioinformatics and mouse modelling to enable rapid transition from discovery to function, address biological and disease context, and facilitate development of appropriate state-of-the-art in silico approaches and in vivo mouse models of disease.

Sponsor	NIH/NIAID
Grant Number	UM1 AI144298
Title	University of Michigan Clinical Autoimmunity Center of Excellence
PI	Dinesh Khanna M.D., M.Sc.
Inclusive Dates	05/01/2019 - 04/30/2024
Role	PI, Alternate Clinical Trial Project
Funding Amount	Annual Direct Costs: \$50,000 Total Award Amount: \$546,000
Description	The overall goal of the U-M Clinical ACE is to better develop an understanding of immune system aberrancies in scleroderma and systemic lupus. The funded clinical trial led by Dr. Kahlenberg will

evaluate the role of interferon signaling blockade in modulation of photosensitivity.

Sponsor **NIH/NIAMS**
Grant Number 1R01 AR071384-01A1
Title Characterization of interferon kappa as a novel target in cutaneous lupus
PI J. Michelle Kahlenberg, M.D., Ph.D.
Inclusive Dates 09/01/2017 - 08/31/2023
Role Principal Investigator
Funding Amount Annual Direct Costs: \$256,525 Total Award Amount: \$2,259,931
Description The goal of this study is to determine the mechanisms of regulation of IFNk in lupus keratinocytes and to identify the impact of IFNk overexpression on cutaneous and systemic autoimmunity. Aims: Identify the mechanisms underlying increased production of IFNk in lupus keratinocytes; 2. Identify the mechanisms by which keratinocyte-produced IFNk promotes inflammatory responses; 3. Identify the in vivo impact of IFNk overexpression on cutaneous inflammation and systemic autoimmunity.

Sponsor **Taubman Medical Research Institute**
Grant Number Innovation Project
Title Personalized Medicine through Integration of Immune Phenotypes in Autoimmune Skin Disease
PI J. Michelle Kahlenberg, M.D, Ph.D. and Johann Gudjonsson M.D., Ph.D.
Inclusive Dates 09/01/2018 – 08/31/2023
Role Co-Principal Investigator
Funding Amount Annual Direct Costs: \$1,000,000 Total Award Amount: \$5,500,000
Description This five-year project will establish longitudinal cohorts of lupus and psoriasis patients for deep immunophenotyping with the goal of identifying biomarkers for treatment response. In addition, it will utilize state of the art technologies to broaden our understanding of these diseases as well as of gender-specific regulation of the immune system in the skin in healthy control populations

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Role Co-Principal Investigator
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Sponsor **NIH-DHHS-US**
Grant Number F31 AR077988

Title Determining the role of type I interferons in ultraviolet-B light induced keratinocyte death
PI Shannon Estadt
Inclusive Dates 07/2020 – 06/2023
Role Sponsor
Funding Amount \$131,186 (\$43,017)
Description The goal of this study is to investigate how type I interferons enhance ultraviolet light-driven keratinocyte apoptosis.

Sponsor Rheumatology Research Foundation
Grant Number Investigator Award
Title Anti-NET autoantibodies and thrombotic risk in Antiphospholipid Syndrome
PI Yu (Ray) Zuo, M.D.
Inclusive Dates 07/2020 – 06/2023
Role Co-Investigator
Funding Amount \$375,000 (\$115,741)
Description The goal of this proposal is to comprehensively define autoantibodies recognizing NET-associated antigens in antiphospholipid antibodies positive individuals, and in doing so characterize their clinical associations and pathogenic impact

Sponsor Rheumatology Research Foundation
Grant Number Investigator Award
Title Defining cutaneous gene expression signatures in juvenile dermatomyositis to guide treatment
PI Jessica Turnier, M.D.
Inclusive Dates 07/2020 - 06/2023
Role Co-Investigator
Funding Amount \$375,000 (\$115,741)
Description The goals of this project are to understand how JDM skin disease may contribute to disease initiation, pathogenesis, chronicity and clinical phenotypes. By understanding molecular mechanisms of skin disease and heterogeneity of gene expression signatures in individual patients, we aim to discover new treatment targets and biomarkers of disease activity and prognosis

Sponsor NIH
Grant Number K01 AR073340
Title The role of VGLL3 in sexually dimorphic interferon-driven inflammation
PI Yun Liang
Inclusive Dates 04/2018 – 03/2023
Role Co-Mentor
Funding Amount \$499,561 (\$88,289)
Description This project aims to identify the molecular basis of sex dimorphisms in IFN responses by testing the hypothesis that higher levels of VGLL3 in females enable priming of ISGs towards sensitized interferon responses and/or delayed recovery from stimulation.

Sponsor NIH/NIAMS
Grant Number 1R01 AI130025-01

Title Role of the gender biased transcription factor VGLL3 in promoting autoimmune responses in SLE
PI Johann E. Gudjonsson, M.D., Ph.D.
Inclusive Dates 03/06/2017 - 02/28/2022
Role Co-Investigator
Funding Amount Annual Direct Costs: \$261,525 Total Award Amount: \$2,023,848
Description The central hypothesis of this proposal is that VGLL3 is an epigenetically regulated transcription factor that has critical roles in promoting autoimmune specific inflammatory responses. Aims: 1. Determine the roles of VGLL3 in regulating autoimmune inflammatory responses; 2. Identify mechanisms and specificity of transcriptional activation by VGLL3 and expression of autoimmune promoting genes; 3. Determine mechanisms involved in activating VGLL3 expression and nuclear translocation.

Sponsor Lupus Research Alliance
Grant Number Novel Research Grant
Title Shining a light on the drivers of photosensitivity in systemic lupus
PI J. Michelle Kahlenberg, M.D., Ph.D.
Inclusive Dates 02/01/2020 - 01/31/2022
Role Principal Investigator
Funding Amount Annual Direct Costs: \$136,364 Total Award Amount: \$300,000
Description The goal of this project is to understand the biology of photosensitive and non-photosensitive SLE skin before and after UV exposure.

Sponsor National Psoriasis Foundation
Grant Number 2020 Psoriasis Prevention Initiative
Title Driving discovery toward psoriasis cure and prevention
PI Gudjonsson; Tsoi; Kahlenberg
Inclusive Dates 08/01/2020 - 07/31/2021
Role Principal Investigator
Funding Amount Annual Direct Costs: \$250,000 Total Award Amount: \$250,000
Description The goal of this project is to developing longitudinal large scale datasets to better understand psoriasis and psoriatic arthritis.

Sponsor Doris Duke Charitable Foundation
Grant Number Physician Scientist Development Award
Title A new paradigm in cutaneous lupus: dissecting the interplay between interferons and Staphylococcus aureus
PI J. Michelle Kahlenberg, M.D., Ph.D.
Inclusive Dates 07/01/2017 - 06/30/2021 (NCTE)
Role Principal Investigator
Funding Amount Annual Direct Costs: \$165,000 Total Award Amount: \$495,000
Description The goal of this study is to identify the impact of S. aureus colonization on IFN production and cutaneous lupus rashes. Aim 1: Identify mechanisms by which type I IFN impacts skin barrier function and increases susceptibility to pathogenic microbes such as S. aureus. Aim 2: Identify mechanisms by which epidermal type I IFN signaling and cutaneous inflammation are positively regulated by S. aureus colonization. Aim 3: Identify the extent to which modulation of S. aureus changes IFN signatures of CLE lesions in vivo

Sponsor **Q32 Bio, Inc**
 Grant Number Sponsored Research Agreement
 Title Feasibility study to evaluate C3d deposition in skin and soluble IL-7R in serum and urine of SLE patients
 PI J. Michelle Kahlenberg, M.D., Ph.D.
 Inclusive Dates 08/01/2020 - 04/30/2021
 Role Principal Investigator
 Funding Amount Annual Direct Costs: \$42,547 Total Award Amount: \$64,973
 Description This project uses existing patient resources to study a role for inhibition of complement in lupus skin and inhibition of IL-7 in lupus nephritis.

Sponsor **University of Michigan, Precision Health**
 Grant Number Precision Health Investigators Award
 Title Digital Pathology and Image Analysis for Lupus Nephritis
 PI Hodgkin
 Inclusive Dates 12/01/2018 - 12/01/2020
 Role
 Funding Amount Annual Direct Costs: \$150,000 Total Award Amount: \$300,000
 Description Digital pathology, a dynamic, image-based environment for the acquisition, management, and analysis of information generated from digitized images, is emerging in the setting of clinical trials and research in kidney disease. The goal of this project is to improve the utility of the kidney biopsy to predict disease progression in lupus nephritis by applying quantitative morphology and computer-aided, semi-automated, morphometric analysis to our U-M digital pathology image repository and LN cohort.

Sponsor **Celgene Corporation**
 Grant Number Research Agreement
 Title Role of Ikaros and Aiolos in Cutaneous Lupus Erythematosus
 PI J. Michelle Kahlenberg, M.D., Ph.D.
 Inclusive Dates 06/17/2019 - 09/16/2020
 Role Co-Investigator
 Funding Amount Annual Direct Costs: \$195,059 Total Award Amount: \$404,324
 Description The goal of this project is to understand the role of Ikaros and Aiolos in cutaneous lupus erythematosus

Sponsor **NIH-NIAMS**
 Grant Number K24 AR076975
 Title Linking Disease Mechanisms and Outcomes in Rheumatic Diseases
 PI J. Michelle Kahlenberg, M.D., Ph.D.
 Inclusive Dates 07/01/2020 - 06/30/2025
 Role Principal Investigator
 Funding Amount Annual Direct Costs: \$124,997 Total Award Amount: \$674,985
 Description The goal of this project is to develop and protect mentorship time to grow the next generation of physician scientists. A focus on the interactions between pain and disease will be explored.

Awarded, Pending Start Date

Sponsor **Bristol Myers Squibb Company**

Grant Number Sponsored Research Agreement
 Title Understanding the role of TYK2 blockade on skin and endothelial function in lupus patients
 PI J. Michelle Kahlenberg, M.D., Ph.D. and Johann Gudjonsson, M.D., Ph.D.
 Inclusive Dates 10/01/2020 - 09/30/2021
 Role Co-Principal Investigator
 Funding Amount Annual Direct Costs: \$109,166 Total Award Amount: \$168,899
 Description The goal of this project is to examine the impact of a TYK2 inhibitor of UV-driven keratinocyte responses and IFN and IL-10 effects on endothelial health.

Sponsor Lupus Research Alliance-BMS
 Grant Number Accelerator Award
 Title Longitudinal systemic and organ-specific heterogeneity in lupus
 PI J. Michelle Kahlenberg, M.D., Ph.D. and Johann Gudjonsson, M.D., Ph.D.
 Inclusive Dates 11/01/2020 - 10/30/2022
 Role Co-Principal Investigator
 Funding Amount Annual Direct Costs: \$135,000 Total Award Amount: \$300,000
 Description The goal of this project is to generate single cell RNA-seq data to match with data collected from the TIIP-PerMIPA cohort. This will provide information on disease heterogeneity and how this impacts therapeutic response over time.

Previous Grant Support (Past 5 years)

Sponsor American College of Rheumatology, Rheumatology Research Foundation (RRF)
 Grant Number Innovative Research Award
 Title A novel mechanism for photosensitivity in systemic lupus erythematosus
 PI J. Michelle Kahlenberg, M.D., Ph.D.
 Inclusive Dates 07/01/2018 - 06/30/2020
 Role Principal Investigator
 Funding Amount Annual Direct Costs: \$185,185 Total Award Amount: \$400,000
 Description The goal of this study is to investigate the hypothesis that lupus photosensitivity results from a vicious cycle of chronic increased epidermal IFN κ expression that primes for reactive oxygen species (ROS) production and XAF1-driven apoptosis. Aims: 1. Determine the impact of IFN κ overexpression on ROS generation and DNA oxidation following UVB exposure; 2. Determine the role of XAF1 in IFN κ -driven keratinocyte apoptosis 3. Determine the role of ROS and XAF1 on baseline and type I IFN-enhanced UVB-mediated apoptosis in vivo.

Sponsor NIH/NIAMS
 Grant Number 1R03 AR072107-01
 Title Identification of BATF2 as a regulator of interferon-enhanced inflammatory responses in lupus skin
 PI J. Michelle Kahlenberg, M.D., Ph.D.
 Inclusive Dates 07/15/2017 - 06/30/2019
 Role Principal Investigator

Sponsor American College of Rheumatology, Rheumatology Research Foundation (RRF)

Grant number K Supplement Award
Title Interferon Kappa as a Novel Target in Cutaneous Lupus
PI J. Michelle Kahlenberg, M.D., Ph.D.
Inclusive Dates 09/15/2016 - 03/14/2018
Role Principal Investigator

Sponsor NIH/NIAMS

Grant Number 5K08 AR063668-05
Title The role of innate immunity in systemic and cutaneous lupus
PI J. Michelle Kahlenberg, M.D., Ph.D.
Inclusive Dates 03/01/2013 - 02/28/2018
Role Sponsor Principal Investigator
Mentor(s) Mariana Kaplan, M.D., Matthias Kretzler, M.D., Ph.D.

Sponsor NIH/NIAMS

Grant Number 5R03 AR066337-03
Title Understanding transcriptional connections between cutaneous and systemic lupus
PI J. Michelle Kahlenberg, M.D., Ph.D.
Inclusive Dates 09/30/2014 - 08/31/2017
Role Principal Investigator

Sponsor UM MICH

Grant Number T1 – Bench to Bedside Translation Award
Title Determining the role of keratinocytes in promotion of fibroblast dysfunction in systemic sclerosis
PI J. Michelle Kahlenberg, M.D., Ph.D.
Inclusive Dates 01/01/2015 - 06/30/2016
Role Principal Investigator

Sponsor Arthritis National Research Foundation (ANRF)

Grant Number Eng Tan Scholar
Title Exploring the influence of cutaneous inflammation on systemic lupus activity
PI J. Michelle Kahlenberg, M.D., Ph.D.
Inclusive Dates 06/01/2014 - 05/31/2016
Role Principal Investigator

Sponsor Novartis Pharmaceuticals Corp.

Grant Number ACZ885N2301
Title A randomized, double-blind, placebo controlled study of canakinumab in patients with Hereditary Periodic Fevers with subsequent randomized withdrawal/ dosing frequency reduction and open-label long term treatment epochs
PI J. Michelle Kahlenberg, M.D., Ph.D.
Inclusive Dates 09/11/2014 – 09/15/2015
Role Site Principal Investigator

Sponsor NIH/Michigan Kidney Translational Core Center
 Grant Number 2P30DK081943
 Title Exploring the influence of cutaneous inflammation on systemic lupus activity
 PI J. Michelle Kahlenberg, M.D., Ph.D.
 Inclusive Dates 02/15/2014 - 02/14/2015
 Role Principal Investigator
 Funding Amount \$40,000 (Total Direct)

Submitted Grant Applications

Sponsor American College of Rheumatology (Prime); Case Western Reserve (Direct)
 Grant Number Innovative Research Award
 Title Identifying a novel pathogenic role for antibody-independent B cell function in Psoriatic Arthritis
 PI Nicole Ward, M.D., Ph.D.
 Inclusive Dates 07/2021 – 06/2023
 Role Consultant
 Funding Amount **\$159,825 (\$73,993)**
 Description Bulk and single-cell RNA-seq will be performed at University of Michigan (Gudjonsson's lab) and collection of samples and analyses from human subjects with and without psoriatic arthritis. All bioinformatic analyses from this project will be performed at Michigan.

Sponsor NIH-DHHS-US
 Grant Number K08
 Title Mechanisms of sex discrepancy in autoimmune disease: Regulation of the female-biased VGLL3 immune pathway
 PI Allison Billi
 Inclusive Dates 09/2020 – 08/2025
 Role Co-Mentor
 Funding Amount \$680,241 (\$120,383)
 Description This application proposes a five-year mentored career development and research plan for a physician scientist to establish a niche in the field of cutaneous immunology focused on autoimmune diseases such as systemic lupus erythematosus (SLE) that disproportionately affect women. Through investigating the biological mechanisms that lead to this sex bias, the candidate seeks to find new avenues to treat and potentially prevent these devastating diseases.

Sponsor The Myositis Association
 Grant Number Pilot Grant
 Title Understanding the drivers of skin inflammation in dermatomyositis and beyond
 PI J. Michelle Kahlenberg, M.D., Ph.D.
 Inclusive Dates 11/01/2020 - 10/31/2022
 Role Principal Investigator
 Funding Amount Annual Direct Costs: \$92,000 Total Award Amount: \$200,000

Description This study will investigate the role of IL-18 in regulating keratinocyte mediated inflammation in patients with dermatomyositis and provide pilot data on single cell RNA sequencing from myositis skin lesions.
† concFurrent with K24 AR076975

Sponsor Crohn's and Colitis Foundation
Grant Number Career Development Award
Title Immune Phenotyping Therapeutic Response to JAK Inhibition in Ulcerative Colitis
PI Kelly Cushing
Inclusive Dates 07/2020 - 06/2023
Role Collaborator
Funding Amount \$270,000 (\$90,000)
Description 1) Develop a comprehensive antibody panel for IMC of intestinal biopsy specimens, 2) Characterize immune and non-immune cell populations in inflamed and non-inflamed tissue using IMC, 3) Compare differences in immune and non-immune cell populations among treatment responders and non-responders

Sponsor NIH-DHHS-US
Grant Number
Title Epigenetic regulation of sexually dimorphic immune responses in keratinocytes
PI Johann Gudjonsson
Inclusive Dates 04/2021-03/3023
Role Co-I without Effort
Funding Amount \$429,000
Description

Sponsor NIH-DHHS-US
Grant Number
Title Role of SLE Associated Variants in TYK2 on Immune Responses in Healthy and Lupus Skin
PI Johann E. Gudjonsson, M.D., and J. Michelle Kahlenberg, M.D., Ph.D.
Inclusive Dates 04/2021-03/2026
Role Co-PI
Funding Amount \$2,781,625
Description

HONORS AND AWARDS

1994 **Valedictorian**, Eastwood High School, Pemberville, Ohio
1997 – Present **Phi Beta Kappa**, Denison University
1997 – 1998 **Mortar Board**, Denison University
1998 **Presidential Medalist**, Denison University 1998: this is the highest honor the school can bestow on a student for outstanding qualities of leadership and scholarship
1998 Denison Student **Leadership Award**
1998 **Valedictorian**, Denison University, Granville Ohio
2004 Lepow Research Day **Alpha Omega Alpha Award**: presented to a student for an outstanding research presentation, CWRU SOM

- 2006 – Present **Alpha Omega Alpha** (Member of AOA)
- 2006 The **Martin Wahl Memorial Fund Award**: awarded to an M.D./Ph.D. student who demonstrates both independence and excellence in research and clinical skills- CWRU SOM class of 2006
- 2006 **American College of Physicians, Ohio Chapter award**: presented to an outstanding student entering Internal Medicine, CWRU SOM class of 2006
- 2008 The **Resident Research Award**: presented to a resident for outstanding research in addition to outstanding performance as a Medicine Resident, University Hospitals Case Medical Center
- 2009 The **Charles C.J. Carpenter Award**: presented to the outstanding Senior Resident for clinical excellence, University Hospitals Case Medical Center
- 2010 The **Thomas D. Palella Award** for Excellence in Teaching: Presented to the first year fellow in the Division of Rheumatology who exemplifies a high level of clinical excellence and teaching, University of Michigan
- 2011 The **William D. Robinson Award**: Presented in recognition of overall accomplishments during fellowship training: as a clinician, teacher and researcher, University of Michigan Division of Rheumatology
- 2011 **ACR Distinguished Fellow Award**: National prize awarded by the American College of Rheumatology to Fellows that perform meritoriously during their training
- 2014 **Eng Tan Scholar** of the Arthritis National Research Foundation in recognition of my exemplary career path and importance of my scientific project.
- 2014, 2016 University of Michigan Rheumatology **Fellows' Teaching Award**: Given to a Faculty Member for clinical teaching and mentorship
- 2015 **American Society for Clinical Investigation (ASCI) Young Physician-Scientist Award**
- 2015 **Vic and Kelly Braden Memorial Fellow**; Arthritis National Research Foundation
- 2016 **K Abstract Award**, Central Society for Clinical and Translational Research
- 2017 **Edmund L. Dubois, MD, Memorial Lectureship**: Award given by the American College of Rheumatology to a young investigator for significant contributions to lupus research.
- 2017 **Early Faculty Highlight Awardee**: Chosen as an example of successful junior faculty in Internal Medicine, University of Michigan.
- 2018 **Parfet Emerging Scholar of the Taubman Research Institute**: Awarded to promising University of Michigan junior faculty for innovative research to understand and cure human diseases.
- 2018 **Jerome W Conn Award for Excellence in Research**: This award recognizes a single junior faculty member of the UM Department of Internal Medicine for a developing body of research, research trajectory, independence, and research excellence.
- 2018 **Mary Betty Stevens Award**: National award given by the Lupus Foundation of America to a young investigator for excellent contributions to lupus research.
- 2018 **Giles G. Bole, M.D. and Dorothy Mulkey, M.D. Research Professor of Rheumatology**: Inaugural Recipient.
- 2019 **Presidential Early Career Award for Scientists and Engineers (PECASE)**: this is the highest honor the U.S. government bestows for exceptional promise for leadership in science and technology

MEMBERSHIPS IN PROFESSIONAL SOCIETIES

2009 – present	American College of Rheumatology
2011 – present	American Association of Immunologists
2015 – present	Federation of Clinical Immunology Societies
2016 – present	Society for Investigative Dermatology

EDITORIAL POSITIONS, BOARDS, AND PEER-REVIEW SERVICE

Editorial Boards

2017 -- present	Associate Editor, <i>Frontiers in Immunology</i> : Autoimmune and Autoinflammatory Disorders
2018 – present	Associate Editor, <i>Journal of Immunology</i>
2019 – 2020	Advisory Editor, <i>Arthritis & Rheumatology</i>
2019 – present	Board of Consulting Editors, <i>JCI Insight</i>
2020 – present	Associate Editor, <i>Arthritis & Rheumatology</i>

Journal Reviewer

11/2011 – present	Ad Hoc reviewer for <i>The Journal of Immunology</i>
08/2012 – present	Ad Hoc reviewer for <i>Clinical Medicine and Research</i>
12/2012 – present	Ad Hoc reviewer for <i>Journal of Clinical Rheumatology</i>
01/2013 – present	Ad Hoc reviewer for <i>Antioxidants and Redox Signaling</i>
05/2013 – present	Ad Hoc reviewer for <i>International Journal of Ophthalmology</i>
07/2013 – present	Ad Hoc reviewer for <i>Clinical and Experimental Immunology</i>
08/2013 – present	Ad Hoc reviewer for <i>Translational Research</i>
09/2013 – present	Ad Hoc reviewer for <i>Current Genomics</i>
11/2013 – present	Ad Hoc reviewer for <i>Journal of Rheumatology</i>
03/2014 – present	Ad Hoc reviewer for <i>Odontology</i>
04/2014 – present	Ad Hoc reviewer for <i>Arthritis and Rheumatology</i>
05/2014 – present	Ad Hoc reviewer for <i>PLOS ONE</i>
07/2014 – present	Ad Hoc reviewer for <i>Journal of Translational Medicine</i>
12/2014 – present	Ad Hoc reviewer for <i>PNAS</i>
01/2015 – present	Ad Hoc reviewer for <i>Molecular Pharmaceutics</i>
01/2016 – present	Ad Hoc reviewer for <i>Infection, Genetics and Evolution</i>
02/2016 – present	Ad Hoc reviewer for <i>Immunology</i>
08/2016 – present	Ad Hoc reviewer for <i>Clinical Immunology</i>
09/2016 – present	Ad Hoc reviewer for <i>PLOS Pathogens</i>
10/2016 – present	Ad Hoc reviewer for <i>Journal of Investigative Dermatology</i>
03/2017 – present	Ad Hoc reviewer for <i>Clinical Rheumatology</i>
10/2017 – present	Ad Hoc reviewer for <i>Trends in Microbiology</i>
05/2018 – present	Ad Hoc reviewer for <i>Genes & Immunity</i>
06/2018 – present	Ad Hoc reviewer for <i>Lupus Science and Medicine</i>
07/2018 – present	Ad Hoc reviewer for <i>Science Translational Medicine</i>
10/2018 – present	Ad Hoc reviewer for <i>Journal of Clinical Investigation</i>
12/2018 – present	Ad Hoc reviewer for <i>Nature Communications</i>
04/2019 – present	Ad Hoc reviewer for <i>JCI Insight</i>

Grant Peer Review

07/2014	Reviewer for Diabetic Complications Consortium (DiaComp) for Pilot & Feasibility Funding Program
2015, 2017	Reviewer for University of Michigan 2015 Postdoctoral Translational Scholars Program (PTSP)

05/2015	Reviewer for UMHS-PUHSC Joint Institute Grant Program
03/2016	Reviewer for UM Biomedical Research Council Bridging Support Program
2016-2018	Study Section Member, Rheumatology Research Foundation
2017, 2018	Study Section Member, NIH/NIAMS Small Business Innovation Research on Rare Musculoskeletal, Rheumatic and Skin Diseases
2018	Study Section Member, NIH/NIAMS MOSS Q02 special emphasis panel
2018	<i>Ad Hoc</i> Study Section Member, Hypersensitivity, Autoimmune, and Immune-mediated Diseases (HAI)
2018, 2019	<i>Ad Hoc</i> Study Section Member, Biomedical Research Committee, Searle Review, University of Michigan
2019-2023	<u>Permanent Study Section Member</u> , Hypersensitivity, Autoimmune, and Immune-mediated Diseases (HAI)
2019	Medical Research Foundation (UK) Peer Review for Lupus Funding Opportunity Applications
2020	DDCF reviewer for Physician Scientist Fellowships
2020	Arthritis National Research Foundation Grant Review
2020	Lupus Research Alliance Review Committee

TEACHING

Clinical Mentor: University of Michigan

07/2012 – 06/2014	Emily Myers MD, Rheumatology Fellow
07/2014 – 09/2016	Jasmine Stannard MD, Rheumatology Fellow
07/2016 – 06/2019	Danielle Barnes MD, Rheumatology Fellow
07/2018 – 06/2020	Hong Shi MD, Rheumatology Fellow
07/2020 – present	Ahmad Ramahi MD, Rheumatology Fellow

Research Mentor: University of Michigan

07/2013 – 06/2014	Emily Myers, Rheumatology Fellow
10/2013 – 12/2014	Matthew Morse, Postdoctoral Fellow
01/2014 – 04/2014	Neal Al-Attar, Undergraduate Independent Study
09/2013 – 12/2015	Adnan Syed, Graduate Student
07/2014 – 08/2015	Sara McCoy, Rheumatology Fellow
07/2014 – 09/2016	Jasmine Stannard, Rheumatology Fellow
09/2014 – present	Sonya Wolf, Graduate Student
10/2015 – 05/2016	Colin Sperring, Undergraduate Student
10/2015 – 07/2016	Rajaie Namas, Clinical Lecturer and Rheumatology Training Grant mentee
01/2016 – 04/2016	Danelle Weakland, Rotation Student
07/2016 – 05/2018	Grace Hile, Medical Student
07/2016 – 06/2017	Navya Parsa, Rheumatology Fellow
2016	Henry Lather, Medical Student
2017	Rachel Powell, Internal Medicine Resident
06/2017 – present	Stephanie Lazar, Internal Medicine Resident
09/2017 – present	Sirisha Sirobhusanam, Postdoctoral Fellow
11/2017 – present	Tori Nault, Internal Medicine Resident
01/2018 – present	Shannon Loftus, Graduate Student
01/2018 – 12/2018	Jonathan Theros, Undergraduate Honors Thesis Student
01/2018 – 06/2018	Raquelle Wilson, Masters in Physiology Student
07/2018 – 08/2018	Mitra Maz, MSTP rotation student
07/2018 – 07/2018	Enze Xing, MSTP rotation student
07/2018 – present	Jessica Turnier, MD, Clinical Lecturer in Pediatric Rheumatology

07/2019 – 06/2020 Hong Shi MD, Rheumatology Fellow
03/2020 – present Mitra Maz, MD/PhD (MSTP) student
03/2020 – present Enze Xing MD/PhD (MSTP) student, co-mentor
07/2020 – present Grace Hile, Dermatology T32 Fellow
07/2020 – present Stephanie Lazar, Rheumatology Fellow

Mentorship Committees: University of Michigan

05/2014 – 12/2015 Adnan Syed, Microbiology and Immunology Graduate Student
07/2014 – 05/2015 Smriti Mohan MD, Rheumatology Fellow
03/2015 – 06/2017 Wahida Ali PhD, Rheumatology Training Grant Fellow
03/2015 – 05/2017 Donna Ray PhD, Rheumatology Training Grant Fellow
12/2018 – present Ramadan Ali, Rheumatology Training Grant Fellow
07/2018 – present Allison Billi, MD, PhD, Dermatology T32 Training Grant Fellow
08/2019 – present Kelly Cushing, MD, PhD, Internal Medicine Junior Faculty KL2 committee
08/2019 – present Amnah Yamani, Immunology Graduate Student
11/2019 – present Ranjitha Uppala, Immunology Graduate Student
07/2020 – present Mack Reynolds, Immunology Graduate Student
07/2020 – present Ray Zuo, MD, RRF SDA scholar and junior faculty
07/2020 – present Aaron Stubbs MD, Rheumatology T32 Training Grant Fellow

Mentor for Undergraduate Research Opportunity Program (UROP) Students, University of Michigan

2012 – 2014 Kaitlyn Clark, BS 2016
2015 – 2016 Brianne Yeskey, BS 2019
2016 – 2017 Jonathan Theros, BS 2020
2018 – 2020 Tyson Moore, BS 2022
2018 – 2019 Josh Banfield, BS 2021
2019 – present Jon Musai, BS 2023
2019 – 2020 Helena Stickney, BS 2023

National Mentorship (CARMA-national program for rheumatology mentoring)

2018 – present Shudan Wang, MD, Montefiore Medical Center/ Albert Einstein College of Medicine
2019 – present Jean Lin, MD, Northwestern University

Intramural Lectures

University of Michigan, Ann Arbor, MI

11/2009 Rheumatology Grand Rounds Presentation “Celiac Disease and the Rheumatologist”

01/2010 Rheumatology Grand Rounds Presentation “Knee MRI”

02/2010 Rheumatology Journal Club Presentation “Antimalarials May Have a Time-Dependent Effect in Lupus Survival: Data from the Multinational Latin American Inception GLADEL Cohort” *Arthritis Rheum* 2010; 62(3):855-62.

02/2010 Rheumatology Grand Rounds Presentation “Autoimmune Myelitis: Emerging Concepts in Pathology”

05/2010 Rheumatology Grand Rounds Presentation “CPC on Cryoglobulinemic Vasculitis.”

- 01/2011 Rheumatology Journal Club Presentation "Autoimmune Skin Inflammation is Dependent on Plasmacytoid Dendritic Cell Activation by Nucleic Acids Via TLR7 and TLR9" JEM 2010 207(13): 2931-42.
- 04/2011 Rheumatology Research Conference Presentation "The Inflammasome in Lupus-Related Cardiovascular Disease"
- 05/2011 Rheumatology Grand Rounds Presentation "From Backache to Bamboo: Updates on the Pathogenesis of Spondyloarthritis"
- 03/2012 Internal Medicine Residency Noon Conference "Rheumatology Cases and Pearls"
- 03/2012 Rheumatology Noon Conference "How and Why to Publish Your Case Reports"
- 12/2012 Ophthalmology Research Conference, University of Michigan "Inflammasome Activation in Lupus: A Driver for This and Other Autoimmune Diseases?"
- 04/2013 Internal Medicine Residency Noon Conference "Rheumatologic Medications"
- 06/2013 Graduate Program in Immunology Retreat "The Role of the Inflammasome in Systemic and Cutaneous Lupus"
- 08/2013 Internal Medicine Grand Rounds Presentation "Inflammation and Beyond: The Evolving Role of the Inflammasome in Autoimmune Disease"
- 04/2014 Michigan Kidney Translational Core Center Retreat "Immune connections between cutaneous inflammation and lupus nephritis"
- 05/2014 Immunology Research Seminar "The Interactions of Cutaneous and Systemic Immunity in SLE"
- 03/2015, 12/2017 Rheumatology Core Curriculum Conference "Vaccine Recommendations for Rheumatology Patients"
- 03/2016 Rheumatology Research Conference "Of Mice and Women: The Impacts and Mechanisms of Cutaneous Inflammation in Systemic Lupus"
- 04/2016 Rheumatology Core Curriculum Conference "Body on Fire: The Growing Field of Autoinflammatory Disorders"
- 08/2017 Rheumatology Grand Rounds "Interferons: what is old is new again"
- 02/2018 Rheumatology Grand Rounds "Innate Immunity: Rheumatology is not just T-cells anymore"

- 04/2018 Taubman Institute Emerging Scholars Symposium “Lupus Skin Is Not Normal: Intrinsic Dysregulation of Epithelial Interferons Drives Cutaneous Lupus Predisposition”
- 08/2018 Rheumatology Grand Rounds “The Pluripotent Pathway Potential of JAK Inhibitors”
- 11/2018 University of Michigan Medicine Grand Rounds “Something new under the sun, understanding photosensitivity in systemic lupus”
- 07/2019 Rheumatology Grand Rounds “Introduction to Autoimmunity: When the Good Guys Go Bad”
- 08/2019 Rheumatology Grand Rounds “Lupus and the Immune System- How Does It All Go Wrong?”
- 09/2019 Dermatology Didactics “Lupus and the Immune System-How Does It All Go Wrong?”

Invited Lectures

- 04/2013 Host Defense and Center for AIDS Research Seminar Series, Case Western Reserve University, Cleveland, OH. “The Inflammasome: A Link between Atherosclerosis and Autoimmunity?”
- 06/2014 Federation of Clinical Immunology Societies (FOCIS) invited plenary speaker, Chicago, IL. “The inflammasome in vascular disease.”
- 07/2014 Case Western Reserve University School of Medicine Medical Scientist Training Program Retreat invited alumni speaker “The Interactions of Cutaneous and Systemic Immunity in SLE.” Cleveland, OH.
- 09/2014 Arthritis Foundation Regional Meeting, Roanoke WV. “Navigating your first faculty appointment.”
- 09/2014 Arthritis Foundation Regional Meeting, Roanoke WV. “The interactions of cutaneous and systemic immunity in lupus.”
- 10/2014 St. Joseph Mercy Hospital Internal Medicine Grand Rounds, Ann Arbor, MI. “Inflammation and Beyond: The Evolving Role of the Inflammasome in Autoimmune Disease.”
- 06/2015 American College of Rheumatology Rheumatology Research Workshop, San Diego, CA. “Navigating Your First Faculty Appointment.”
- 01/2016 Andrews University, Berrien Springs, MI. “New Therapeutic Opportunities for Lupus: Lessons from Biochemistry”
- 05/2016 University of Michigan Internal Medicine Spring Review “Body on Fire: A Review of Genetic and Acquired Autoinflammatory Diseases.” Ann Arbor, MI.

- 02/2017 University of Iowa Immunology Grand Rounds "Of Mice and Women: The Impacts and Mechanisms of Cutaneous Inflammation in Systemic Lupus." Iowa City, IA.
- 02/2017 University of Iowa Rheumatology Grand Rounds "Bench to Bedside: The role of Innate Immunity in Systemic Lupus." Iowa City, IA.
- 03/2017 The Ohio State University Rheumatology Grand Rounds "Who Starts the Fire? The Role of Innate Immunity in Systemic Lupus Erythematosus." Columbus, OH.
- 05/2017 AstraZeneca Interferon Biology Symposium "Interferon Effects in the Skin." Gaithersburg, MD.
- 06/2017 American College of Rheumatology, Rheumatology Research Workshop, St. Louis, MO. "Grants, Beyond the Science."
- 04/2018 Hospital for Special Surgery Rheumatology Grand Rounds "Cutaneous Interferons Drive Inflammatory and Apoptotic Responses in Lupus Skin." New York, New York.
- 05/2018 University of Massachusetts Lupus Day Symposium Keynote Address "Cutaneous Interferons Drive Inflammatory and Apoptotic Responses in Lupus Skin." Worcester, MA.
- 06/2018 American College of Rheumatology, Rheumatology Research Workshop, San Francisco, CA. "Which Grant and When: A Personal Path to R01 Funding"
- 10/2018 American College of Rheumatology National Meeting, Chicago, IL. "Finding Your Way in Years 3-7: What You Need to Get Promoted"
- 10/2018 American College of Rheumatology National Meeting, Chicago, IL. "Which Grant and When: A Personal Path to R01 Funding"
- 11/2018 University of Michigan Update in Rheumatic Diseases CME course "Bench to Bedside: The Future of Rheumatic Disease Treatment is Bright"
- 04/2019 13th International Congress on Systemic Lupus, San Francisco, CA. "Interferons and Innate Immunity in Lupus Skin"
- 05/2019 Washington University Rheumatology Grand Rounds, St. Louis, MO. "Something new under the sun: understanding photosensitivity in systemic lupus"
- 09/2010 "Lupus- what it means and how to manage it" Keynote Speaker, Michigan Lupus Foundation Grand Rapids meeting
- 10/2019 68th Annual Montagna Symposium on the Biology of the Skin. "Pathogenesis of Cutaneous Lupus Erythematosus"

- 11/2019 "Innate Immunity of the Skin in SLE development" 2019 ACR Basic Research Conference Invited Speaker
- 12/2019 University of Chicago Rheumatology Grand Rounds, Chicago, IL
"Something new under the sun: understanding photosensitivity in systemic lupus"
- 01/2020 2020 Winter Rheumatology Symposium "All fired up! The hot topic of autoinflammation" and "Cutaneous Lupus Erythematosus: Integrating disease pathogenesis into treatment decisions"
- 03/2020 University of Miami Rheumatology Grand Rounds, Miami, FL. "When normal skin isn't normal: updates into the pathogenesis of cutaneous lupus."
- 07/2020 Rheumatology Research foundation IRA-Summer Speaker Series "A novel target for photosensitivity in Systemic Lupus"

Didactic Courses

- 06/2003-07/2003 Summer Minority Scholars Program, Case Western Reserve University School of Medicine, Cleveland OH, Instructor.
As an instructor, I taught these students the basics of cell signal transduction, including the role of receptors, kinases, G-proteins, transcription factors, and nucleotides.
- 09/2005-12/2005 Case Western Reserve University School of Medicine, Ohio, Physical Diagnosis Instructor
I taught students the basics of physical diagnosis of all organ systems as well as the basics of note writing and presentation.
- 12/2010-present Small Group Leader for Rheumatology Curriculum, University of Michigan Medical School
- 12/2013, 12/2014, 12/2015, 1/2017, 6/2017, 6/2018, 6/2019 (as podcast)
M2 Medical Student Lecture "Intro to Autoimmunity: When the Good Guys Go Bad"
- 12/2014, 12/2015 M2 Medical Student Lecture "Rheumatologic Medications"
- 10/2015, 10/2016
11/2017, 12/2018 Immunology 851 Lecture "Lupus as an Example of Autoimmunity"

Other Teaching Activities at the University of Michigan

- 8/2012 Discussant, Internal Medicine Grand Rounds Morbidity and Mortality
- Since 2013 Mentor, Graduate Program in Immunology
- 9/2013, 4/2014, 12/2014, 5/2015, 11/2015, 04/2016, 10/2016, 12/2016, 3/2017, 9/2017, 2/2018, 9/2018
Discussant, Internal Medicine Inpatient Morning Report

12/2013, 5/2017, 07/2017, 8/2017, 10/2017, 12/2017, 1/2018, 3/2018, 4/2018, 5/2018, 6/2018, 7/2018, 8/2018, 9/2018
Discussant, Internal Medicine Ambulatory Morning Report

10/2016, 11/2019 Facilitator for PIBS 503 "Research in the Global Workplace"

COMMITTEE, ORGANIZATIONAL, AND VOLUNTEER SERVICE

Institutional

- 11/2011 - Present Admissions interviewer for University of Michigan Internal Medicine Residency Program and Physician Scientist Track candidates
- 03/2012 - 2015 Yearly participant for UM Medical School Career Seminar Series for Rheumatology
- 11/2013 - 2020 Clinical Innovations Committee, Division of Rheumatology
- Spearheaded improved vaccination strategies for the Division
 - Spearheaded efforts to improve efficiency of regular lab monitoring for DMARD and biologic patients.
 - Spearheaded efforts to develop SOP for physician vacation coverage
- Chair** 2019-2020
- 2013 - Present Fellowship Selection Committee, Division of Rheumatology
- 01/2014 - Present Interviewer, PIBS Graduate Student Applicants
- 08/2014 - Present Organizer, Rheumatology Journal Club: organize the schedule, coordinate presenters, approve article selection, and assist in presentation development.
- 11/2014 Symposium Organizer, "NETosis and Citrullination in Autoimmune Disease", sponsored by the Division of Rheumatology and Cayman Chemical
- 2014 - Present Interviewer for MSTP admissions
- 06/2015 - 2016 **Chair**, Fellowship Recruitment Group, University of Michigan Division of Rheumatology
- 07/2017 - Present Graduate Student Affairs Committee (Immunology Representative)
- 2017 – Present Member, career advisory committee for Rheumatology fellows
- 2018 – Present Member, MSTP Operating Committee
-2019 Awards Subcommittee member
- 2018 - 2019 Member, Comprehensive Musculoskeletal Planning Committee;
Rheumatology representative.

2018 - 2019 Member, Dermatology Chair Search Committee

2018 - Present Member, Pediatric Rheumatology Chief Search Committee

2019 - 2020 **Co-Chair** Rheumatology Chief Search Committee

National

10/2013 – 10/2018 Member, American College of Rheumatology Early Career Investigators subcommittee.

2015 Member CARE Committee on Lupus. National committee charged with creating review questions for the American College of Rheumatology CARE lupus MOC module.

04/2015 - 2016 Participant, ACR/EULAR SLE Classification project

11/2015 Co-Moderator, State of the Art Session “Negative Regulation of Inflammation in Autoimmunity” at the American College of Rheumatology national meeting.

2016, 2017 Abstract Reviewer for American College of Rheumatology National Meeting “Innate Immunity” subsection

11/2016, 11/2017 Moderator “Innate Immunity” Oral Abstract Session at the American College of Rheumatology national meeting.

2016 - Present Lupus Clinical Investigators Network (LuCIN)
- Working Committee on Candidate Drug Vetting

2017 Moderator “Type I Interferon: Pathogenic Mediator and Therapeutic Target” Federation of Clinical Immunologic Societies National Meeting

2018 Co-Moderator “Translation Insights into CLE Pathogenesis” 4th International Conference on Cutaneous Lupus Erythematosus

2018 – Present Member, executive board for CARMA, national mentorship program for adult rheumatology.

2019 - 2022 Co-chair, Abstract session on “Innate Immunity” for American College of Rheumatology National Meeting

2020 – Present Scientific Advisory Board, Arthritis National Research Foundation

2020 – 2023 Scientific Advisory Committee, Rheumatology Research Foundation

Volunteer Service

08/2000 - 05/2006 Cleveland Orchestra Chorus, Ohio, First Soprano
I was a member of this elite chorus for 6 years, participating as both a member and as a soloist. With this organization, I sang at Severance and Carnegie Halls, the Lucerne Festival in Switzerland and the BBC Proms in London, England.

- 05/1998 - Present Denison University, Granville OH, Alumni Recruitment Team (DART) Member
I work to help recruit prospective students for Denison University. My role has included telephone conversations, manning the Denison Booth at "college nights" at local high schools and conducting alumni interviews for admissions.
- 03/2012 - 03/2015 Math and Science Night Instructor, Klager Elementary, Manchester, MI
- 01/2015 - Present Science Olympiad Coach
"Water Rockets" 2015, Klager Elementary, Manchester, MI
"Circuit Wizardry" 2016, Wylie Elementary, Dexter, MI
"Aerodynamics" 2017, Cornerstone Elementary, Dexter, MI
"No Bones About It" 2018, Wylie Elementary, Dexter, MI
- 02/2016, 3/2017, 2/2019 STEAM night presenter, Wylie Elementary and Cornerstone Elementary, Dexter, MI

CONSULTANT AND SCIENTIFIC ADVISORY BOARDS

- 12/2015 Advisory Board; Periodic Fever Syndromes, Novartis
- 2016 Consultant; Inflammasome and Autoimmunity, Idera Pharmaceuticals
- 11/2016 Advisory Board; Lupus and Lupus Nephritis, Celgene
- 05/2017, 05/2018 Advisory Board and speaker; Interferons in Autoimmunity, AstraZeneca and Medimmune
- 09/2017 Advisory Board; Lupus and Long Term Damage, GlaxoSmithKline
- 11/2017 Consultant; Adult Onset Stills Disease Management. Novartis
- 12/2018, 05/2019, 11/2019, 4/2020 Advisory Board; TULIP trial, AstraZeneca
- 02/2019 SLE Advisory Board, Eli Lilly
- 05/2019 TYK2 Advisory Board, Bristol Myers Squibb
- 08/2019 – present Consultant, Bristol Myers Squibb
- 09/2019 – present Consultant, Eli Lilly
- 10/2019 – present Consultant, Boehringer Ingelheim

PATENTS

1. COMPOSITIONS AND METHODS FOR TREATING DISORDERS RELATED TO INFLAMMASOME ACTIVITY AND IL-1ALPHA EXPRESSION

Inventors: Victor M. Elner, Matthew Field, J. Michelle Kahlenberg, Susan G. Elner,
Zong-Mei Bian
USPTO 62/342,690
Filed: 27-May-2016

2. ANIMAL MODELS FOR AUTOIMMUNE DISEASES
Inventors: Johann E. Gudjonsson, J. Michelle Kahlenberg, Yun Liang, Anj Dlugosz
USPTO 62/613,104
Provisional Filed 03-Jan-2018; Formally filed 13-Dec-2018
International Patent Filed 02-Jan-2019 PCT/US2019/012076
3. COMPOSITIONS AND METHODS RELATING TO THE IDENTIFICATION AND
TREATMENT OF SKIN DISEASE
Inventors: Lam C. Tsoi, Johann Gudjonsson, J. Michelle Kahlenberg
USPTO 63/044,197
Provisional Filed: June 25,2020

BIBLIOGRAPHY

Peer-Reviewed Publications

1. Pena CE, **Kahlenberg JM**, Hatfull GF. The role of supercoiling in mycobacteriophage L5 integrative recombination. *Nucleic Acids Research*. 1998;26(17):4012-8. PMID: 9705513; PMCID: PMC147811.
2. Pena CE, **Kahlenberg JM**, Hatfull GF. Protein-DNA complexes in mycobacteriophage L5 integrative recombination. *J Bacteriol*. 1999 Jan;181(2):454-61. PMID: 9882658; PMCID: PMC93398.
3. Pena CE, **Kahlenberg JM**, Hatfull GF. Assembly and activation of site-specific recombination complexes. *Proc Natl Acad Sci U S A*. 2000 Jul 5;97(14):7760-5. PMID: 10869430; PMCID: PMC16618.
4. Yustein JT, Xia L, **Kahlenberg JM**, Robinson D, Templeton D, Kung HJ. Comparative studies of a new subfamily of human Ste20-like kinases: homodimerization, subcellular localization, and selective activation of MKK3 and p38. *Oncogene*. 2003 Sep 18;22(40):6129-41. PMID: 13679851.
5. **Kahlenberg JM**, Dubyak GR. Mechanisms of caspase-1 activation by P2X7 receptor-mediated K⁺ release. *Am J Physiol Cell Physiol*. 2004 May;286(5):C1100-8. PMID: 15075209.
6. **Kahlenberg JM**, Dubyak GR. Differing caspase-1 activation states in monocyte versus macrophage models of IL-1beta processing and release. *J Leukoc Biol*. 2004 Sep;76(3):676-84. PMID: 15240753.
7. Verhoef PA, Kertesy SB, Lundberg K, **Kahlenberg JM**, Dubyak GR. Inhibitory effects of chloride on the activation of caspase-1, IL-1beta secretion, and cytolysis by the P2X7 receptor. *J Immunol*. 2005 Dec 1;175(11):7623-34. PMID: 16301672.
8. **Kahlenberg JM**, Lundberg KC, Kertesy SB, Qu Y, Dubyak GR. Potentiation of caspase-1 activation by the P2X7 receptor is dependent on TLR signals and requires NF-kappaB-driven protein synthesis. *J Immunol*. 2005 Dec 1;175(11):7611-22. PMID: 16301671.
9. **Kahlenberg JM**, Fox DA. Advances in the medical treatment of rheumatoid arthritis. *Hand Clin*. 2011 Feb;27(1):11-20. Review. PMID: 21176795; PMCID: PMC3135413.
10. **Kahlenberg JM**. Neuromyelitis optica spectrum disorder as an initial presentation of primary Sjögren's syndrome. *Semin Arthritis Rheuma*. 2011 Feb;40(4):343-8. PMID: 20655576.

11. **Kahlenberg JM**, Kaplan MJ. The interplay of inflammation and cardiovascular disease in systemic lupus erythematosus. *Arthritis Res Ther*. 2011 Feb 28;13:203-212. Review. PMID: 21371346; PMCID: PMC3157642.
12. **Kahlenberg JM**, Thacker SG, Berthier CC, Cohen CD, Kretzler M, Kaplan MJ. Inflammasome activation of IL-18 results in endothelial progenitor cell dysfunction in systemic lupus erythematosus. *J Immunol*. 2011 Dec 1;187(11):6143-56. PMID: 22058412; PMCID: PMC3221936.
13. **Kahlenberg JM**, Kaplan MJ. Mechanisms of premature atherosclerosis in rheumatoid arthritis and lupus. *Annu Rev Med*. 2013;64:249-63. PMID: 23020882; PMCID: PMC4198172.
14. **Kahlenberg JM***, Carmona-Rivera C, Smith CK, Kaplan MJ. Neutrophil extracellular trap-associated protein activation of the NLRP3 inflammasome is enhanced in lupus macrophages. *J Immunol*. 2013 Feb 1;190(3):1217-26. PMID: 23267025; PMCID: PMC3552129.
*corresponding author
15. **Kahlenberg JM***, Kaplan MJ. Little peptide, big effects: the role of LL-37 in inflammation and autoimmune disease. *J Immunology*. 2013 Nov 15;191(10): 4895-901. PMID: 24185823; PMCID: PMC3836506.
*corresponding author
16. **Kahlenberg JM***, Yalavarthi S, Zhao W, Hodgins JB, Reed TJ, Tsuji NM, Kaplan MJ. An essential role for caspase-1 in the induction of murine lupus and its associated vascular damage. *Arthritis Rheumatol*. 2014 Jan;66(1):152-62. PMID: 24449582; PMCID: PMC4135431.
*corresponding author
17. **Kahlenberg JM***, Kaplan MJ. The inflammasome and lupus: another innate immune mechanism contributing to disease pathogenesis? *Curr Opin Rheumatol*. 2014 Sep; 26(5):475-81. PMID: 24992143; PMCID: PMC4153426.
*corresponding author
18. Gladue HS, Fox DA, Lowe L, **Kahlenberg JM**. Schnitzler's Syndrome in the absence of a monoclonal gammopathy: A report of two cases. *J Clin Cell Immunol* 2014; 5:(5)265. DOI: 10.4172/2155-9899.1000265.
19. Cates AM, Holden VI, Myers EM, Smith CK, Kaplan MJ, **Kahlenberg JM**. Interleukin-10 hampers endothelial cell differentiation and enhances the effects of IFN α on lupus endothelial cell progenitors. *Rheumatology (Oxford)* 2015; 54(6):1114-23. PMCID: PMC4447841.
20. Syed AK, Reed TJ, Clark KL, Boles BL, **Kahlenberg JM**. *Staphylococcus aureus* phenol-soluble modulins stimulate the release of pro-inflammatory cytokines from keratinocytes and are required for induction of skin inflammation. *Infection and Immunity* 2015; 83(9): 3428-37. PMCID: PMC4534673.
21. Ogdie A, Shah A, Makris U, Kim A, Angeles-Han S, Golding A, **Kahlenberg JM**, Muscal E, Castelino FV, Nelson A. Barriers to and facilitators of a career as a physician-scientist among rheumatologists in the United States. *Arthritis Care & Research* 2015; 67(9): 1191-1201. PMCID: PMC4546916.
22. Clark KL, Reed TJ, Wolf SJ, Lowe L, Hodgins JB, **Kahlenberg JM**. Epidermal injury promotes nephritis flare in lupus-prone mice. *Journal of Autoimmunity* 2015; 65:38-48. PMCID: PMC4679658.
23. Morse M, Clark KL, Cascalho M, **Kahlenberg JM**. Caspase-1 is required for maintenance of marginal zone B cells in pristane-induced lupus. *Lupus* 2016 Jan;25(1):81-7. PMCID: PMC4679614.
24. McCoy SS, Nagaraja V, Paviol S, Gudjonsson JE, **Kahlenberg JM**. Exacerbation of psoriasis due to hydroxychloroquine. *Archives of Medicine* 2015; 7(3):9-11.

25. McCoy SS, Stannard J, **Kahlenberg JM**. Targeting the inflammasome in rheumatic diseases. *Translational Research* 2016 Jan;167(1):125-37. PMID: PMC4487391.
26. **Kahlenberg JM**. Anti-inflammatory panacea? The expanding therapeutics of interleukin-1 blockade. *Current Opinion in Rheumatology* 2016; May;28(3):197-203. PMID: PMC4901309.
27. Stannard JN, **Kahlenberg JM**. Cutaneous lupus erythematosus: updates on pathogenesis and associations with systemic lupus. *Current Opinion in Rheumatology* 2016; 28(5):453-9. PMID: PMC4965280.
28. Elkhom L*, **Kahlenberg JM***, Barbasso-Helmers S, Tjärnlund A, Yalavarthi S, Zhao W, Seto N, Betteridge Z, Lundberg IE, Kaplan MJ. Dysfunction of endothelial progenitor cells is associated with the type I IFN pathway in patients with polymyositis and dermatomyositis. *Rheumatology* 2016; 55(11):1987-1992. PMID: PMC5088625.
***shared first author**
29. Xing X, Liang Y, Sarkar MK, Wolterink L, Swindell WR, Voorhees JJ, Harms PW, **Kahlenberg JM**, Johnston A, Gudjonsson JE. IL-17 responses are the dominant inflammatory signal linking inverse, erythrodermic and chronic plaque psoriasis. *Journal of Investigative Dermatology* 2016; 136(12):2498-2501. PMID: 27448749. PMID: PMC5123949.
30. Stannard J, Meyers E, Reed TJ, Lowe L, Sarkar M, Xing X, Gudjonsson, JE, **Kahlenberg JM**. Lupus skin is primed for IL-6 inflammatory responses through a keratinocyte-mediated autocrine type I interferon loop. *Journal of Investigative Dermatology* 2017; 137(1):115-122. PMID: PMC5183476.
31. Johnston A, Xing X, Wolterink L, Barnes DH, Yin Z, Reingold L, **Kahlenberg JM**, Harms PW, Gudjonsson JE. IL-1 and IL-36 are the dominant cytokines in generalized pustular psoriasis. *Journal of Allergy and Clinical Immunology* 2017;140(1):109-120. PMID: 28043870. PMID: PMC5494022.
32. Lather HD, **Kahlenberg JM**. Hemorrhagic pericardial effusion with tamponade: a rare adverse effect of Infliximab – case report and literature review. *Case Reports in Rheumatology* 2016; 2016:2576496, 3 pages. PMID: 27822400. PMID: PMC5086384.
33. Liang Y, Xing X, Beamer MA, Swindell WR, Sarkar MK, Roberts LW, Voorhees JJ, **Kahlenberg JM**, Harms PW, Johnston A, Gudjonsson JE. Six-transmembrane epithelial antigens of the prostate comprise a novel inflammatory nexus in patients with pustular skin disorders. *Journal of Allergy and Clinical Immunology* 2017; 139(4):1217-1227. PMID: 27884600; PMID: PMC5385276.
34. Liang Y, Tsoi LC, Xing X, Sarkar MK, Berthier CC, Stuart PE, Nair RP, Elder JT, Voorhees JJ, **Kahlenberg JM**, Gudjonsson JE. A gene network regulated by the transcription factor VGLL3 as a promoter of sex-biased autoimmune diseases. *Nature Immunology* 2017; Feb;18(2):152-160. PMID: 27992404. PMID: PMC5289297.
35. Ogdie A, Sparks JA, Angeles-Han ST, Bush K, Castelino FV, Golding A, Jiang Y, **Kahlenberg JM**, Kim AHJ, Lee YC, Machireddy K, Ombrello MJ, Shah AA, Wallace ZS, Nigrovic PA, and Makris UE. Barriers and facilitators of mentoring for trainees and early career investigators in rheumatology research: Current state, identification of needs, and roadmap to an inter-institutional adult rheumatology mentoring program. *Arthritis Care and Research* 2018; Mar;70(3):445-453.; doi: 10.1002/acr.23286. PMID:28544766.
36. Liu J, Berthier CC, **Kahlenberg JM**. Enhanced inflammasome activity in systemic lupus erythematosus is mediated via type I interferon upregulation of interferon regulatory factor 1. *Arthritis and Rheumatology* 2017; 69(9):1840-1849. PMID: 28564495.
37. McCoy SS, Reed TJ, Berthier CC, Tsou PS, Liu J, Gudjonsson JE, Khanna D, **Kahlenberg JM**. Scleroderma keratinocytes promote fibroblast activation independent

- of transforming growth factor-beta. *Rheumatology* 2017; 56(11):1970-1981. PMID: 28968684.
38. Hile GA, Lowe L, **Kahlenberg JM**. Cutaneous purpura of Sjögren's syndrome successfully treated with hydroxychloroquine. *JAAD Case Reports*; 2017; Jul 18;3(4):326-328. PMID: 28752122. PMCID: PMC5517835
 39. Tsoi LC, Yang J, Liang Y, Sarkar M, Xing X, Beamer MA, Aphale A, Raja K, Kozlow JH, Getsios S, Voorhees JJ, **Kahlenberg JM**, Elder JT, Gudjonsson JE. Transcriptional determinants of individualized inflammatory responses at anatomically separate sites. *Journal of Allergy and Clinical Immunology*; 2018; 141(2):805-808. PMID: 29031600
 40. Powell R, Hile GA, Lowe L, **Kahlenberg JM**. Herpes zoster infection following topical steroid use in the setting of tumid lupus erythematosus. *JAAD Case Reports*; 2018; 4(1):107-109. PMID: 29379863
 41. Swindell W, Beamer M, Sarkar MK, Loftus S, Fullmer J, Xing X, Ward N, Tsoi L, **Kahlenberg JM**, Liang Y, and Gudjonsson J. RNA-seq analysis of IL-1B and IL-36 responses in epidermal keratinocytes identifies a shared MyD88-dependent gene signature. *Frontiers in Immunology*; 2018; *in press*.
 42. Field M, Bian Z, Elnor S, **Kahlenberg JM**, and Elnor V. Distinct CD40L Receptors Mediate Inflammasome Activation and Secretion of IL-1 β and MCP-1 in Cultured Human Retinal Pigment Epithelial Cells. *Experimental Eye Research*; 2018; May 170:29-39. PMID: 29454857. PMCID:PMC5924621.
 43. Sarkar MK, Hile GA, Tsoi LC, Xing X, Liu J, Liang Y, Berthier CC, Swindell WR, Patrick M, Shuai S, Tsou PS, Uppala R, Beamer MA, Srivastava A, Bielas SL, Harms PW, Getsios S, Elder JT, Voorhees JJ, Gudjonsson JE, **Kahlenberg JM**. Photosensitivity and type I IFN responses in cutaneous lupus are driven by epidermal derived interferon kappa. *Annals of Rheumatic Diseases*; 2018 Nov; 77:1653-64. PMID:30021804. PMCID: PMC6185784.
 44. Wolf SJ, Theros J, Reed TJ, Liu J, Grigorova IL, Martinez-Colon GJ, Jacob CO, Hodgins JB, **Kahlenberg JM**. TLR7-mediated Lupus Nephritis Is Independent of Type I Interferon Signaling. *Journal of Immunology*; 2018 Jul 15; 201(2):393-405. PMID: 29884703
 45. Wolf SJ, Estadt SN, Gudjonsson JE, **Kahlenberg JM**. Human and Murine Evidence for Mechanisms Driving Autoimmune Photosensitivity. *Frontiers in Immunology*; 2018; 9:2430. PMID: 30405625. PMCID: PMC6205973.
 46. Hile GA, Gudjonsson JE, **Kahlenberg JM**. The influence of interferon on healthy and diseased skin. *Cytokine*; 2019 *epub ahead of print*. PMID:30527631.
 47. Billi AC, **Kahlenberg JM**, Gudjonsson JE. Sex bias in autoimmunity. *Current Opinion in Rheumatology*; 2019; 31(1):53-61.
 48. Yadav R, Yoo D, **Kahlenberg JM**, Bridges SL, Oni O, Huang H, Stecenko A, and Rada B. Systemic levels of anti-PAD4 autoantibodies correlate with airway obstruction in cystic fibrosis. *Journal of Cystic Fibrosis*; 2019; Sep;18(5):636-645. PMID:30638826
 49. Tsoi LC, Hile GA, Berthier CC, Sarkar MK, Reed TJ, Liu J, Uppala R, Patrick M, Raja K, Xing X, He K, Xing E, Gudjonsson JE, **Kahlenberg JM**. Hypersensitive Interferon Responses in Lupus Keratinocytes Reveal Key Mechanistic Determinants in Cutaneous Lupus. *Journal of Immunology*; 2019; 202 (7) 2121-2130. PMID:30745462. PMCID: PMC6424612.
 50. Billi AC, Gharaee-Kermani M, Fullmer J, Tsoi LC, Hill BD, Gruszka D, Ludwig J, Xing X, Estadt S, Wolf SJ, Rizva SM, Berthier CC, Hodgins JB, Beamer MA, Sarkar MK, Liang Y, Uppala R, Shao S, Zeng C, Harms PW, Verhaegen ME, Voorhees JJ, Wen F, Dlugosz AA, Ward NL, **Kahlenberg JM**, Gudjonsson JE. The female-biased factor VGLL3 drives cutaneous and systemic autoimmunity. *JCI Insight*; 2019; 4(8). PMID:30996136.

51. Patrick MT, Stuart PE, Raja K, Chi S, He Z, Voorhees J, Tejasvi T, Gudjonsson JE, **Kahlenberg JM**, Chandran V, Rahman P, Gladman D, Nair R, Elder JT, Tsoi LC. Integrative approach to reveal cell type specificity and gene candidates for psoriatic arthritis outside the MHC. *Frontiers in Genetics*; 2019; April 11; 10:304. PMID 31031798.
52. Yadav V, Chi L, Zhao R, Tourdot B, Yalavarthi S, Jacobs BN, Banka A, Liao H, Koonse S, Anyanwu A, Visovatti S, Holinstat M, **Kahlenberg JM**, Knight JS, Pinsky DJ, Kanthi Y. CD39 suppresses venous thrombo-inflammation by disrupting inflammasome activation. *Journal of Clinical Investigation*; 2019; 129(7): 2872-2877. PMID 30990798. PMCID: PMC6597243.
53. Sirobhusanam S, Parsa N, Reed T, **Kahlenberg JM**. Chromagar™ requires secondary confirmation strategies to minimize false positive/negative results for detection of *Staphylococcus aureus*. *Journal of Microbiological Methods*; 2019; 161:71-73. PMID 31014957.
54. Wolf SJ, Estadt SN, Theros J, Moore T, Ellis J, Liu J, Reed TJ, Jacob CO, Gudjonsson JE, **Kahlenberg JM**. Ultraviolet light induces increased T cell activation in lupus-prone mice via type I IFN-dependent inhibition of T regulatory cells. *Journal of Autoimmunity*; 2019; Sep;103:102291. PMID 31248690.
55. Berthier CC, Tsoi LC, Reed TJ, Stannard JN, Myers EM, Namas R, Xing X, Lazar S, Lowe L, Kretzler M, Gudjonsson JE, and **Kahlenberg JM**. Molecular Profiling of Cutaneous Lupus Lesions Identifies Subgroups Distinct from Clinical Phenotypes. *Journal of Clinical Medicine*; 2019; 8(8): 1244. PMID 31426521.
56. **Kahlenberg JM** and Kang I, The Clinicopathologic Significance of Inflammasome Activation in Autoimmune Diseases. *Arthritis and Rheumatology*; 2020; 72(3):386-395.
57. Shao S, Tsoi LC, Sarkar MK, Xing X, Xue K, Uppala R, Berthier CC, Zeng C, Patrick M, Billi AC, Fullmer J, Beamer MA, Perez-White B, Getsios S, Schuler A, Voorhees JJ, Choi S, Harms P, **Kahlenberg JM**, Gudjonsson JE. IFN- γ enhances cell-mediated cytotoxicity against keratinocytes via JAK2/STAT1 in lichen planus. *Science Translational Medicine*; 2019; Sep 25;11(511). PMID 31554739.
58. Sirobhusanam S, Parsa N, Reed T, Berthier CC, Sarkar MK, Hile GA, Tsoi LC, Banfield J, Dobry C, Horswill AR, Gudjonsson JE, **Kahlenberg JM**. *Staphylococcus aureus* colonization is increased on lupus skin lesions and is promoted by interferon-mediated barrier disruption. *Journal of Investigative Dermatology*; 2020; 140(5):1066-1074. PMID 31877319.
59. Tsoi LC, Stölzl D, Wehkamp U, Sun J, Gerdes S, Sarkar MK, Hübenthal M, Zeng C, Rodriguez E, Uppala R, Xing X, Billi AC, Swindell WR, Shefler A, Chen J, Patrick MT, Harms PW, **Kahlenberg JM**, Perez White BE, Maverakis E, Gudjonsson JE, Weidinger S. Progression of acute-to-chronic atopic dermatitis is associated with quantitative rather than qualitative changes in cytokine responses. *Journal of Allergy and Clinical Immunology*. 2019; epub ahead of print. PMID 31891686.
60. Seto N, Torres-Ruiz JJ, Carmona-Rivera C, Pak K, Purmalek MM, Fernandez IP, Hosono Y, Cirqueira C, Gowda P, Arnett N, Hewitt S, Gorbach A, Gómez-Martín D, Miller FW, Lundberg I, **Kahlenberg JM**, Schiffenbauer A, Mammen A, Rider LG, Kaplan, MJ. Neutrophil dysregulation is pathogenic in idiopathic inflammatory myopathies. *JCI insight*. 2020; Feb 13;5(3). pii: 134189.
61. Shi H, Gudjonsson JE, **Kahlenberg JM**. Treatment of cutaneous lupus erythematosus: current approaches and future strategies. *Current Opinion in Rheumatology*. 2020; 32(3):208-214. PMID 32141953.
62. **Kahlenberg JM**, Billi AC, Eyerich K, JE. Biologics in the treatment of skin and rheumatologic diseases. *Journal of Allergy and Clinical Immunology*. 2020; 145(4):1138-1142. PMID 32112793.

63. Billi AC, Ludwig JE, Fritz Y, Rozic R, Swindell WR, Tsoi LC, Gruszka D, Abdollahi-Roodsaz S, Xing X, Diaconu D, Uppala R, Camhi MI, Klenotic PA, Sarkar MK, Husni ME, Scher JU, McDonald C, **Kahlenberg JM**, Midura RJ, Gudjonsson JE, Ward NL. KLK6 expression in skin induces PAR1-mediated psoriasiform dermatitis and inflammatory joint disease. *Journal of Clinical Investigation*; 2020; *epub ahead of print*. PMID 32155135.
64. Hile G, **Kahlenberg JM**, Gudjonsson JE. Recent genetic advances in innate immunity of psoriatic arthritis. *Clinical Immunology*. 2020; 214:108405. *Epub ahead of print*. PMID 32247832.
65. **Kahlenberg JM**. Rethinking the Pathogenesis of Cutaneous Lupus [published online ahead of print, 2020 Jun 27]. *J Invest Dermatol*. 2020;S0022-202X(20)31570-0. doi:10.1016/j.jid.2020.05.077. PMID 32605817.
66. Ozen S, Ben-Chetrit E, Foeldvari I, Amarilyo G, Ozdogan H, Vanderschueren S, Marzan K, **Kahlenberg JM**, Dekker E, De Benedetti F, Kone-Paut I. Long-term Efficacy and Safety of Canakinumab in Patients with Colchicine-resistant Familial Mediterranean Fever: Results from the Randomized Phase 3 CLUSTER Trial. *Annals of the Rheumatic Diseases*; 2020; *in press*.
67. Jiang Y, Tsoi LC, Billi AC, Ward NR, Harms PW, Zeng C, Maverakis E, **Kahlenberg JM**, Gudjonsson JE. "Cytokinocytes" - The Diverse Contribution of Keratinocytes to Immune Responses. *JCI Insight*, 2020; *in press*.
68. Uppala R, Tsoi LC, Harms PW, Wang B, Billi AC, Maverakis E, **Kahlenberg JM**, Ward NL, Gudjonsson JE. "Autoinflammatory Psoriasis" – genetics and biology of pustular psoriasis. *Cellular & Molecular Immunology*. 2020; *in press*.
69. Tsoi L, Gharaee-Kermani M, Berthier CC, Nault T, Hile G, Estadt SN, Patrick MT, Wasikowski R, Billi AC, Lowe L, Reed TJ, Gudjonsson J, **Kahlenberg JM**. IL-18-containing five-gene signature distinguishes histologically identical dermatomyositis and lupus erythematosus skin lesions [published online ahead of print, 2020 Jul 9]. *JCI Insight*. 2020;139558. doi:10.1172/jci.insight.139558.
70. Zuo Y, Yalavarthi S, Gockman K, Madison JA, Gudjonsson JE, **Kahlenberg JM**, McCune WJ, Bockenstedt PL, Karp DR, Knight JS. Anti-NET antibodies and impaired NET degradation in antiphospholipid syndrome [published online ahead of print, 2020 Jul 30]. *Arthritis Rheumatol*. 2020;10.1002/art.41460. doi:10.1002/art.41460.
71. Gudjonsson JE, Tsoi LC, Ma F, Billi AC, van Straalen KR, Harms P, Wasikowski R, Xing X, Xing E, Plazyo O, Zeng C, Patrick MT, Kozlow JH, Cherry-Bukowiec JR, Jiang Y, Kirma J, Weidinger S, Cushing KC, Rosenblum MD, Berthier CC, McLeod AS, Voorhees JJ, Wen F, **Kahlenberg JM**, Maverakis E, Modlin RL, Prems EP. Contribution of plasma cells and B-cells to hidradenitis suppurativa pathogenesis. *JCI Insight* 2020 *in press*.
72. Maz MP, **Kahlenberg JM**. Cutaneous and systemic connections in lupus. *Current Opinion in Rheumatology*; 2020; *epub ahead of print*. PMID: 32826479

Book Chapters

1. **Kahlenberg JM** and Kaplan MJ. Mechanisms of acute inflammation and vascular injury in SLE. In: Dubois' *Lupus Erythematosus and Related Syndromes*, 8th edition; Daniel J Wallace and Bebra Hannahs Hahn, eds. NY: Elsevier Saunders, 2013; Chapter 15, pp. 166-74.

Research Highlights/Editorials/Correspondence

1. Liang Y, **Kahlenberg JM**, Gudjonsson JE. A vestigial pathway for sex differences in immune regulation. *Cellular & Molecular Immunology* 2017 Jul;14(7):578-580. PMID 28529333. PMCID: PMC5520416.
2. Zeng C, **Kahlenberg JM**, Gudjonsson JE. IL-17A softens the skin – anti-fibrotic properties of IL-17A in systemic sclerosis. *Journal of Investigative Dermatology*; 2020; 140(1):13-14.
3. Wallace B, Washer L, Marder W, **Kahlenberg JM**. Lupus patients with COVID-19: The University of Michigan Experience. *Annals of the Rheumatic Diseases*; 2020 in press.

Presentations/Posters

1. **Kahlenberg JM**, Dubyak GR. (2004, April). Mechanisms of Caspase-1 Activation by P2X7 Receptor-Mediated K⁺ Release: Coupling and ATP-Gated Ion Channel to the Assembly of Protease-Based Signaling Complexes. Poster presented at: Experimental Biology; Washington, DC.
2. **Kahlenberg JM**, Thacker SG, Berthier CC, Hodgkin J, Kretzler M, Kaplan MJ. (2011, November). Interferon Alpha Strikes Again: Modulation of Inflammasome Activity Results in IL-18 Mediated Vascular Dysfunction in Systemic Lupus Erythematosus. Poster abstract 1433; American College of Rheumatology Annual Meeting, Chicago, IL.
3. **Kahlenberg JM**, Zhao W, Yalavarthi S, Kaplan MJ. (2012, November). Caspase-1 Modulates Endothelial Dysfunction and Vascular Repair in Murine Lupus. Poster abstract 1443; American College of Rheumatology Annual Meeting, Washington, DC.
4. **Kahlenberg JM**, Carmona-Rivera, C, Smith, CK, Kaplan, MJ. (2012, November). Neutrophil Extracellular Trap-Associated Protein Activation of the Inflammasome Is Enhanced in Lupus M1 Macrophages. Oral presentation #2502; American College of Rheumatology Annual Meeting, Washington, DC.
5. **Kahlenberg JM**, Cates AM, Holden VI, Smith CK, Kaplan MJ. (2013, November). IL-10 Is Detrimental to Endothelial Cell Differentiation and May Enhance Cardiovascular Risk in Systemic Lupus. Poster Abstract 631; American College of Rheumatology Annual Meeting, San Diego, CA.
6. **Kahlenberg JM**, Yalavarthi, S, Zhao, W, Hodgkin, JB, Tsuji, NM, and Kaplan, MJ. (2013, November). An Essential Role for Caspase-1 in the Induction of Murine Lupus and Its Associated Vascular Damage. Poster Abstract 541; American College of Rheumatology Annual Meeting, San Diego, CA.
7. Clark K, Reed TJ, Hodgkin JB, **Kahlenberg JM**. (2014, June). Dermal Injury Promotes Nephritis Flare in Lupus-Prone NZM2328 Mice. Rheumatology Research Workshop, Seattle, WA.
8. Ogdie A, Angeles-Han S, Makris U, Nelson A, Shah A, Jiang Y, **Kahlenberg JM**, Muscal E, Castelino FV, Golding A, Kim A. (2014, November). Barriers and Facilitators of a Career in Research among Rheumatologists in the United States. Poster Abstract #1145, American College of Rheumatology Annual Meeting, Boston, MA.
9. Ogdie A, Shah A, Makris U, Kim A, Angeles-Han S, Golding A, **Kahlenberg JM**, Muscal E, Castelino FV, Nelson A. (2014, November). Reasons for Leaving an Academic Career in Research among Rheumatologists in the United States. Poster Abstract #104, American College of Rheumatology Annual Meeting, Boston, MA.
10. Clark, K, Reed, TJ, Hodgkin, JB, **Kahlenberg JM**. (2014, November) Dermal Injury Promotes Nephritis Flare in Lupus-Prone NZM2328 Mice. Poster Abstract #654, American College of Rheumatology Annual Meeting, Boston MA.
11. Stannard J, Meyers E, Reed TJ, Lowe L, **Kahlenberg JM**. (2015, April). Keratinocyte-Associated IL-6 Is Elevated in Cutaneous Lupus Rashes and Correlates with Renal Function in Systemic Lupus Erythematosus Patients. Poster Abstract YIA10, American Society of Clinical Investigation Annual Meeting, Chicago, IL.

12. Johnston A, Xing X, Wolterink L, Barnes DH, Swindell WR, Sarkar MK, **Kahlenberg JM**, Harms PW, Gudjonsson JE. (2015, May). IL-1 and IL-36 are the Dominant Cytokines in Generalized Pustular Psoriasis. S95, Society for Investigative Dermatology Annual Meeting, New Orleans, LA.
13. Berthier CC, Stannard JN, Myers EM, Reed TJ, Eddy S, Kretzler M, **Kahlenberg JM**. (2015, September). Comparison of Discoid Versus Subacute Cutaneous Lupus Reveals Overlapping and Distinct Interferon Regulated Pathways. Abstract #368. International Lupus Meeting, Vienna, Austria.
14. Clark K, Reed TJ, Wolf S, Lowe L, Hodgins J, **Kahlenberg JM**. (2015, September). Epidermal Injury Promotes Nephritis Flare in Lupus-Prone Mice. Abstract # 233. International Lupus Meeting, Vienna, Austria.
15. Berthier CC, Stannard JN, Myers EM, Reed TJ, Eddy S, Kretzler M, **Kahlenberg JM**. (2015, November). Shared and End Organ Specific Transcriptional Networks in Skin versus Kidney Biopsies in Systemic Lupus. Abstract # 2092. American Society of Nephrology Annual Meeting, San Diego, CA.
16. Stannard J, Meyers E, Reed TJ, Lowe L, **Kahlenberg JM**. (2015, November). Keratinocyte-Associated IL-6 Is Elevated in Cutaneous Lupus Rashes and Production of IL-6 By Keratinocytes Is Enhanced in Non-Involved Lupus Skin. Abstract #798. American College of Rheumatology Annual Meeting, San Francisco, CA.
17. Berthier CC, Stannard J, Meyers E, Swindell WR, Lowe L, Reed TJ, Gudjonsson JE, **Kahlenberg JM**. (2015, November). Transcriptional Profiling of Cutaneous Lupus Reveals Pronounced Changes in Keratinocyte and Myeloid Lineage Expressed Genes and Demonstrates Uniquely Regulated Interferon Pathways Between Rash Subtypes. Abstract #799. American College of Rheumatology Annual Meeting, San Francisco, CA.
18. McCoy SS, Reed TJ, Tsou PS, Berthier CC, Khanna D, **Kahlenberg JM**. (2015, November). Scleroderma Keratinocytes Promote Fibroblast Activation Independent of TGF- β . Abstract #3004. American College of Rheumatology Annual Meeting, San Francisco, CA.
19. Berthier CC, Stannard J, Myers, EM, Lowe L, Reed TJ, Davidson A, Kretzler M, **Kahlenberg JM**. (2016, April). Shared and Endorgan-Specific Transcriptional Networks in Skin Versus Kidney Biopsies in Systemic Lupus. Abstract #39. Translational Immunology in Kidney Disease Meeting, Berlin, Germany.
*winner: best poster award
20. Stannard JN, Reed TJ, Lowe L, **Kahlenberg JM**. (2016, April) Lupus Keratinocytes Are Primed by an Autocrine Type I Interferon Loop to Robustly Secrete IL-6. Abstract #132. Central Society for Translational Research Meeting, Chicago, IL.
21. Johnston A, Xing X, Wolterink L, Yin Z, Reingold L, **Kahlenberg JM**, Harms PW, Gudjonsson JE. (2016, May). Pustular Inflammatory Skin Diseases Have a Common Molecular Signature. Abstract #459. Society for Investigative Dermatology National Meeting, Scottsdale, AZ.
22. Sarkar MK, Tsoi LC, Xing X, Liang Y, Voorhees JJ, Harms PW, Stannard J, Stoll SW, Elder JT, Johnston A, Getsios S, **Kahlenberg JM**, Gudjonsson JE. (2016, May) Autocrine IFN- κ Maintains Baseline Type I Interferon Responses in Keratinocytes in a Tyk2 Dependent Manner. Abstract #465. Society for Investigative Dermatology National Meeting, Scottsdale, AZ.
23. Liang Y, Tsoi LC, Xing X, Sarkar MK, Voorhees JJ, Harms PW, **Kahlenberg JM**, Gudjonsson JE. (2016, May). VGLL3 is a Key Regulator of Gender Biased Transcriptome Changes and May Explain Female Bias in Lupus and Other Autoimmune Diseases. Abstract #062. Society for Investigative Dermatology National Meeting, Scottsdale, AZ.

24. Xing X, Liang Y, Sarkar MK, Liza W, Voorhees JJ, Harms PW, Swindell WR, **Kahlenberg JM**, Johnston A, Gudjonsson JE. (2016, May). Shared and Unique Inflammatory Processes and Transcriptome Changes in Inverse and Erythrodermic Psoriasis Compared to Plaque Psoriasis. Abstract #272. Society for Investigative Dermatology National Meeting, Scottsdale, AZ.
25. Namas R, Powell C, **Kahlenberg JM**. (2016, Nov). Anti-Ro Positivity is a Predictor of Responsiveness to Topical Steroids or Hydroxychloroquine in Patients with Discoid but Not Subacute Cutaneous Lupus. Abstract #752, Poster Presentation. American College of Rheumatology Annual Meeting, Washington, DC.
26. Stannard JN, Reed TJ, Myers E, Lowe L, Sarkar M, Xing X, Berthier CC, Gudjonsson JE, **Kahlenberg JM** (2016, Nov). Interferon Kappa is a Novel Type I IFN That Drives Cutaneous Inflammation in Systemic Lupus. Abstract #3240. Oral presentation. American College of Rheumatology Annual Meeting, Washington, DC.
27. Wolf SJ, Reed TJ, Jacob CO, **Kahlenberg JM** (2016, Nov). TLR7-Mediated Lupus Nephritis Flares Are Independent of Type I Interferon Signaling. Abstract #2057. Oral presentation. American College of Rheumatology Annual Meeting, Washington, DC.
28. Liu J, **Kahlenberg JM** (2016, Nov). Interferon Regulatory Factor 1 is the Key Driver of Inflammasome Activity in Systemic Lupus Erythematosus. Abstract #1007. Oral presentation. American College of Rheumatology Annual Meeting, Washington, DC.
29. Berthier CC, Stannard JN, Myers E, Reed TJ, Davidson A, Kretzler M, **Kahlenberg JM**. (2017, March). Shared and Endorgan-Specific Transcriptional Networks in Skin Versus Kidney Biopsies in Systemic Lupus. Abstract #LUP17-0173. Oral Presentation. 12th International Congress on SLE, Melbourne, Australia.
30. Liang Y, Tsoi LC, Xing X, Beamer MA, Sarkar MK, Voorhees JJ, Harms PW, **Kahlenberg JM**, Gudjonsson JE. (2017, April). *VGLL3* is a Key Regulator of Transcriptome Changes in Gender Biased Autoimmune Conditions. Poster Presentation. Society for Investigative Dermatology National Meeting, Portland, OR.
31. Tsoi LC, Yang J, Liang Y, Sarkar MK, Xing X, Beamer MA, Aphale A, Raja K, Kozlow JH, Getsios S, Voorhees JJ, **Kahlenberg JM**, Elder JT, Gudjonsson JE. (2017, April). Determinants of Intra-Individual Transcriptional Homogeneity in Inflammatory Responses at Anatomically Separate Sites. Oral Presentation. Society for Investigative Dermatology National Meeting, Portland, OR.
32. Sarkar MK, Xing X, Tsoi LC, Liang Y, Berthier CC, Wolterink L, Patrick M, Hile G, Beamer MA, Tsou PS, Harms PW, Elder JT, Voorhees JJ, Johnston A, **Kahlenberg JM**, Gudjonsson JE. (2017, April). Interferon Kappa is Required for Regulation of Baseline Type I Interferon Responses in Keratinocytes and is Dysregulated in Cutaneous Lupus. Oral Presentation. Society for Investigative Dermatology National Meeting, Portland, OR.
33. Berthier CC, Tsoi LC, Hile G, Sarkar MK, Reed TJ, Gudjonsson JE, **Kahlenberg JM**. (2017, June). Lupus Skin is Characterized by a Robust Type I Interferon Signature Driven in Part by Epidermal Production of Interferon Kappa and Skewed Interferon Responses in Lupus Keratinocytes. Abstract # 292212. FOCIS Meeting, Chicago, IL.
34. Gudjonsson JE, Sarkar MK, Tsoi LC, Berthier CC, Hile GA, Liang Y, Liu J, Harms PW, **Kahlenberg JM**. (2017, Nov). Cutaneous Lupus is Driven by an Exaggerated Interferon Kappa Loop which Primes for Interferon Alpha Responses. Abstract #897. Oral Presentation. American College of Rheumatology Annual Meeting, San Diego, CA.
35. Wolf SJ, Theros J, Reed T, **Kahlenberg JM** (2017, November). TLR-7-Mediated Lupus Nephritis Flares Are Independent of Type I Interferon Signaling. Oral presentation. Autumn Immunology Conference Chicago, IL

36. Wolf SJ, Theros J, **Kahlenberg JM** (2018, May). UVB induces early increases in IgG+ B cells in lupus-prone but not wild-type mice. Poster presented at: American Association of Immunologist Conference Austin, TX
37. Hile G, Tsoi L, Liu J, Sarkar M, Gudjonsson J, **Kahlenberg JM**. (May 2018). Interferon kappa regulates apoptotic response to UVB in control and lupus keratinocytes. 4th Annual International Conference on cutaneous Lupus Erythematosus. Poster presentation.
38. Tsoi LG, Hile GA, Berthier CC, Sarkar MK, Reed TJ, Uppala R, Patrick M, Raja K, Xing X, He K, Gudjonsson JE, **Kahlenberg JM**. (October 2018). Lupus Keratinocytes Exhibit Skewed Interferon Responses and Dysregulation of a Novel Regulator of Interferon Signaling. Abstract #1896. Oral Presentation. American College of Rheumatology Annual Meeting, Chicago, IL.
39. Hile G, Sarkar MK, Liu J, Reed TJ, Gudjonsson JE and **Kahlenberg JM**. (October 2018). Interferon Kappa Regulates Apoptotic Response to UVB in Control and Lupus Keratinocytes. Abstract #2114. Poster presentation. American College of Rheumatology Annual Meeting, Chicago, IL.
40. T Nault, LC Tsoi, TJ Reed, M Gharaee-Kermani, L Lowe, JE Gudjonsson and **JM Kahlenberg**. (October 2018). Dermatomyositis Skin Shares Type I Interferon Overlap with Cutaneous Lupus but Displays Many Unique Expression Changes That May Serve as Biomarkers for Skin Disease. Abstract #876. Oral Presentation. American College of Rheumatology Annual Meeting, Chicago, IL.
41. S Lazar, R Namas, CC Berthier and **JM Kahlenberg**. IFN-Gene Expression Is Elevated in Subacute Cutaneous Lupus Erythematosus and DLE and Decreases with Treatment in DLE. Abstract #2112. Poster presentation. American College of Rheumatology Annual Meeting, Chicago, IL.
42. SN Estadt, JK Kahlenberg. Interferon alpha negatively regulates reactive oxygen species in the skin. October 2018. Poster presentation. Autumn Immunology Conference, Chicago, IL.
43. R Uppala, MK Sarkar, C Zeng, S Stoll, A Tsoi, S Shao, A Billi, **JM Kahlenberg**, JE Gudjonsson. Generation and Utilization of a Stable IFN Response Reporter Line in Keratinocytes. May 2019. Abstract #069. Poster presentation. Society for Investigative Dermatology Annual Meeting, Chicago, IL.
44. S. Shao, L. C. Tsoi, M. K. Sarkar, X. Xing, R Uppala, C Zeng, **JM Kahlenberg**, J.E. Gudjonsson. IFN- γ enhances cell-mediated cytotoxicity against keratinocytes via JAK2/STAT1 in lichen planus. May 2019. Abstract #044. Oral presentation. Society for Investigative Dermatology Annual Meeting, Chicago, IL.
45. MK Sarkar, R. Uppala, S. Shao, JM Kahlenberg, JE Gudjonsson. Autocrine IFN-k restricts CRISPR-Cas9 keratinocyte transfection. May 2019. Abstract #386. Poster presentation. Society for Investigative Dermatology Annual Meeting, Chicago, IL.
46. AC Billi, M Gharaee-Kermani, J Fullmer, A Tsoi, B Hill, D Gruszka, J Ludwig, X Xing, S. Estadt, S. Wolf, SM. Rizvi, CC Berthier, JB Hodgins, M Beamer, MK Sarkar, R Uppala, S Shao, P Harms, ME Verhaegen, J Voorhees, F Wen, NL Ward, AA Dlugosz, JM Kahlenberg, JE Gudjonsson. The female-biased factor VGLL3 drives cutaneous and systemic autoimmunity. May 2019. Abstract #640. Oral presentation. Society for Investigative Dermatology Annual Meeting, Chicago, IL.
47. SJ Wolf, SN Estadt, J Theros, T Moore, J Ellis, J Liu, TJ Reed, CO Jacob, JM Kahlenberg. UVB induces prolonged T cell activation in lupus-prone mice via type I IFN inhibition of T regulatory cells. May 2019. Abstract #. Poster presentation. Society for Investigative Dermatology Annual Meeting, Chicago, IL.
48. SN Estadt, JK Kahlenberg. Interferon Alpha Promotes Caspase-Dependent Apoptosis Independently of Reactive Oxygen Species in Ultraviolet B-Exposed Keratinocytes.

November 2019. Poster presentation. American College of Rheumatology National meeting. Atlanta, GA.