A Division’s Vital Signs

In this issue of Rheuminations you will find many signs of a healthy division. When taking the temperature of our research, the hotter the better! And having well over 60 abstracts on the 2015 ACR program, with 20% as podium presentations is pretty hot, and a credit to the creativity and hard work of our faculty, trainees and support staff. Those selected to give oral presentations in San Francisco range in rank from professor to undergraduate student.

In this issue you’ll also find several examples of noteworthy research from our division that has been prominently recognized in the scientific literature. Two of our faculty are receiving special honors from the ACR this year: Dinesh Khanna will receive the Kunkel award which is given to an outstanding young investigator in rheumatology, and Amr Sawalha will deliver the Dubois lectureship, which recognizes his outstanding research in systemic lupus. You’ll also see that our faculty possess impressive talents beyond their professional work as physicians and scientists, including home renovation, farming, and plunging in spectacular fashion from a fast-moving bicycle!

I hope that you enjoy this issue of Rheuminations, and we all look forward to reconnecting with our family of Michigan rheumatology alumni at the ACR meeting – please join us at the Saturday night reception and also try to get to some of our talks and poster presentations. And be sure to let us know what you are up to, so that we can feature you in an upcoming issue of Rheuminations.

University of Michigan William D. Robinson Society

Annual Dues Notice for 2015

2015 annual dues - $75

Check made payable to: The University of Michigan

mailed to : attn Donna Cash, Division of Rheumatology, 300 North Ingalls Street, Suite 7C27, Ann Arbor, MI 48109-5422.

or

Pay online at:

http://victors.us/williamrobinsonmdalumnisocietyfund

Please assist us in keeping the U of M Rheumatology Alumni Reception an annual occurrence, at these dues help to offset the cost of this event.
As Featured In: Song Ling, PhD and Joseph Holoshitz, MD had an article published in Arthritis & Rheumatology which was featured in the June issue of Nature Reviews Rheumatology.

PHARMACOTHERAPY

Going upstream: peptidomimetics block shared-epitope signalling

Building on their earlier research that identified the HLA-DR 'shared epitope' sequence as a signal transduction ligand that directly contributes to erosive arthritis, a new study by Joseph Holoshitz and colleagues suggests that this signalling pathway could be a therapeutic target in rheumatoid arthritis (RA). Indeed, the investigators showed that an antagonistic ligand designed to interact with the shared epitope binding site on cell-surface calreticulin (CRT) has potent anti-osteoclastogenic and anti-inflammatory effects.

In the study, they tested a library of 16 cyclic peptidomimetic analogues, all of which carried an identical 5-amino acid core sequence that was designed, based on precise structure–function analysis, to competitively inhibit the shared epitope–CRT interaction. “This linear peptide interacted with the shared epitope binding site on CRT, but could not activate signalling,” explains Holoshitz. “Furthermore, this peptide was found to inhibit shared epitope–CRT binding as well as shared epitope-activated signalling.” Stabilizing the peptide structure in a cyclic form served to increase its biologic stability; accordingly, several of the analogues were found to be highly potent in signalling assays.

“...picogram doses of the lead compound, HS(4-4)c Trp, ameliorated both inflammation and bone damage...”

Two of the peptidomimetic analogues were shown to inhibit shared epitope signalling and osteoclast differentiation in human and mouse cells at picomolar concentrations. In vivo, weekly intraperitoneal administration of picogram doses of the lead compound, HS(4-4)c Trp, ameliorated both inflammation and bone damage in mice with collagen-induced arthritis (CIA). “Treated mice experienced significantly milder joint swelling and their joints showed significantly less osteoclast-activated bone destruction,” says Holoshitz. “The effect was found to be exquisitely structure-specific, since another mimetic analogue failed to demonstrate such effects despite its near-identical structure.” Computational modelling showed that the slight difference in ring size between the two compounds led to their distinct molecular interactions with the shared epitope binding pocket on CRT.

Unlike other therapeutic strategies for RA, Holoshitz points out, “the approach described here targets an ‘upstream’, highly specific molecular interaction event.” The compounds might thus be less likely to have adverse effects. He concludes, “These findings provide rationale and structure-function metrics that could be useful in designing effective drugs for RA and other arthritic conditions.”

Sarah Onuora

Amr H. Sawalha, MD has been selected as the 2015 Edmund L. Dubois, MD, Memorial Lectureship Awardee by the ACR. This award was established by the Dubois family and is presented to an outstanding young investigator in the field of lupus. Dr. Sawalha’s work on the abstract entitled, “Histone H2AX Phosphorylation as a Measure of DNA Double Strand Breaks and a Marker of Environmental Stress and Disease Activity in Lupus” was a factor in his selection. Dr. Sawalha’s presentation at the The Edmund L. Dubois, MD, Memorial Lectureship will take place on Tuesday, 11/10 at 2:30, entitled The title will be “Epigenetic Variability in Lupus”.

Dinesh Khanna, MD, MS received the 2015 “Henry Kunkel Young Investigator Award” by the American College of Rheumatology (ACR), which is a one-time merit-based award given to a young physician scientist, age 45 or younger, who has made outstanding and promising independent contributions to basic or clinical research in the field of rheumatology.

ASSET (Abatacept Systemic Scleroderma Trial) is an international, placebo-controlled, double blind, randomized trial of early diffuse cutaneous systemic sclerosis (SSc). This trial assesses abatacept (Orencia®, a recombinant fusion protein that includes the extracellular domain of human CTLA4 and is an FDA approved biologic medication for rheumatoid arthritis and juvenile arthritis) in patients with early diffuse SSc with less than or equal to 36 months of usage. The primary outcomes are improvement in skin thickness and safety. The trial is a 12 month double blind study and is followed by a 6 month open label extension. Secondary and exploratory outcomes will include changes in the patient-reported outcomes, pulmonary function tests, joint swelling and tenderness, and other laboratory measures. This is an investigator-initiated study coordinated by the University of Michigan with support from the National Institutes of Health and Bristol-Meyer-Squibb. The lead investigator is Dr. Dinesh Khanna, Director of the University of Michigan Scleroderma Program and the Data Coordinating Center is led by Dr. Catherine Spino. http://www.umich.edu/~asststdy/

REASON (Rheumatoid Arthritis Synovial tissue Network). The University of Michigan is one of six sites in a consortium that was awarded funding from the NIH through the new Accelerating Medicines Partnership (AMP). REASON will create a network to obtain, process and study synovial tissue in patients with early RA. University of Michigan investigators and research staff will collect synovial tissue samples for the network and subsequent processing will be completed within Dr. Fox’s laboratory, who will also be a member of the executive committee. Pictured are co-investigators Dr. Bob Ike (back left) and Dr. Kristine Phillips (front right) who traveled to England with a group from other universities to study with Dr. Stephen Kelley of London in order to learn how to do ultrasound-guided synovial biopsies.
ASCI Young Physician-Scientist Awards. **Michelle Kahlenberg, MD, PhD** and **Jason Knight, MD, PhD** were among the recipients of the 2015 ASCI Young Physician-Scientist Award from the American Society for Clinical Investigation. This award recognizes young physician-scientists who at the time of their nomination are supported by an NIH K award or equivalent career-development award, are early in their first faculty appointment, and who have made notable achievements in their research. Drs. Knight and Kahlenberg were recognized at the 2015 ASCI/AAP Joint Meeting and presented their work on April 25, 2015.

The NIH NIEHS’s online newsletter, Environmental Factor, selected **Dr. Emily Somers**’ recent paper on mercury exposure and autoimmune diseases as one of their Extramural Papers of the Month, in April 2015. The new findings point to the need for further investigation into the relationship between methylmercury and autoimmune conditions. This article was also featured in the Summer 2015 Medicine at Michigan. Somers EC, Ganser MA, Warren JS, Basu N, Wang L, Zick SM, Park SK. 2015. Mercury exposure and antinuclear antibodies among females of reproductive age in the United States: NHANES. Environ Health Perspect; 2015 Aug;123(8):792-8.

**Ora Gewurz-Singer, MD, MS**, collaborated on a poster that won the Magna Cum Laude award at the annual Society of Thoracic Radiology meeting in March in Carlsbad, CA. The poster, entitled “Imaging of the Cardiothoracic Manifestations of Vasculitis: Pearls and Pitfalls,” was a collaboration with Zeeshan Bhatti, MD and Dharshan Vummidi, MBB of the University of Michigan Department of Radiology.

**Tim Laing, MD** was featured in an article in Medicine at Michigan about the new Comprehensive Musculoskeletal Center. This center brings together more than 250 physician from 10 specialties, who work in over 50 clinics at 22 facilities across the UMHS under a musculoskeletal umbrella which fosters collaborations between care teams that focus on bone, joint, and spine health. A branch of the Comprehensive Musculoskeletal Center opened last summer at the new U of M Northville Health Center. Rheumatology clinicians who practice at this satellite include **Drs. Ora Gewurz-Singer, Rebecca Burns, and Anmol Dhillon.**

Congrats to our Graduating Fellows!

Eric Wise, MD
Rheumatologist with St. Joseph Mercy Hospital, Washtenaw County, MI

Sara McCoy, MD
Assistant Professor
University of Wisconsin

Nada Abdulaziz
completed her residency at St. Luke’s Hospital in St. Louis.

Mousa Al Abbas
completed his residency at the University of Utah.

Emily Littlejohn
completed her residency at Loyola Medicine Chicago.

Navya Parsa
completed her residency at Riverside Methodist Hospital.

New Fellowship Program Coordinator

Julie Welch is our new fellowship coordinator, working closely with Dr. Marks!

ACR Advocacy On the Hill in May, 2015: Pictured with Representative Debbie Dingell are Dr. Eric Matteson, Mayo Clinic (UM Rheum Alum); Dr. Gary Bryant, University of Minnesota; Jan Stevens, University of Michigan Rheumatology Division Administrator, Regina Mincberg, ACR Staff; and Tammy Guastella, Michigan Rheumatism Society.

ACR Advocates for Arthritis, October 2015: Dr. Tim Laing, University of Michigan; Jan Stevens, University of Michigan Rheumatology Division Administrator; Sue Olsson, University of Michigan Rheumatology Nurse and two Michigan rheumatology patients visited with Senator Gary Peters.

Hail Yes, and GO BLUE!
"When we saw that thrombocytopenia was a risk factor, our initial assumption was that this would be because low platelets are a well-known risk factor for bleeding (and DAH is obviously a bleeding complication). But it doesn't seem to be that simple. While thrombocytopenia showed up in the history of most DAH patients, it was only rarely active at the time of the DAH episode. This suggests to us that the association is complex and likely relies on other unknown factors -- factors that place patients at risk for both thrombocytopenia and DAH," Knight explained. I think patients can be quite optimistic that DAH, if recognized early, is quite treatable with current medical technology. The key is to have a high level of suspicion for the diagnosis," Knight told MedPage Today.

Michelle Kahlenberg, MD, PhD, along with her husband Mark Skowronski, aka “Farmer Mark”, were featured in the September 2015 issue of The Rheumatologist in Rheum After 5: Doctor, Researcher, Farmer, which showcased their free-range livestock and organically grown vegetables on their 80 acre farm southwest of Ann Arbor.

http://www.the-rheumatologist.org/article/rheumatologist-michelle-kahlenberg-md-phd-pursues-rural-dream/
In June, Dan Clauw, MD and his wife Marianne received an award from Ann Arbor’s Historic District Commission for rehabbing a former student rental house in the Kerrytown area. The house was built in the 1860’s, remodeled several times, and had served as a student rental for decades. City leaders have expected to see more student rental houses converted back into single-family homes due to the building of student high-rises in Ann Arbor, but so far this trend has yet to, well, become a trend. Cudos to the Clauws! They say they are still the only owner-occupied single-family house on their block, but that it is the best house they’ve ever had!

As Featured In: Article of Sri Yalavarthi (of Dr. Jason Knight’s lab) is also featured on the cover of the November issue of Arthritis & Rheumatology!


Please don’t forget to pay your dues!
http://victors.us/willard robinsonmdalumnisocietyfund

Please see the following U of M speakers and abstracts schedule. Until next time - and see you at the ACR!
Our worthy Dr. Bob Ike went on a cycling excursion with his wife this past winter, to Chile, and returned a little worse for wear. Here is what he had to say for himself:

“There once was a big guy named Ike
Who thought he’d see Chile from a bike.
For 2 days he’s smooth
But came out of his groove
When rocks, hills and little dogs got his psyche.

From his bike he was flung
And his shoulder just hung
From what’s left after fracture/dislocation
Though’ brachial plexus pressure’s the real abomination
Leaving him feeling much less young.

So in the truck to search for a doc
With a Xray machine to make it a lock
So the “German Clinic” it is
Four docs till we saw the whiz
While the techs gasp at his x-rays. A shock!

A little gas and pop the shoulder is in
Only 11 hours after the original sin
And doc, what about this hand
All swollen numb and useless, not so grand
“brachial plexus injury, 3-6 months”, no win

So the missus becomes travel agent, an ace!
By Christmas we exit the place
In them fine seats up front
Make me feel like a runt
And it’s Christmas afternoon at my place

What to do with all this time now?
Figure out one handed practice works how
Rearrange clinics for safety’s sake
Find clothes that one hand can take
And get tickets to see Jim Harbaugh

Work comes soon, and support abounds
Complaints from patients become quieter sounds
Fellow and residents do work I now can’t do
Having so much fun I wonder if can ever to the old redo
While others observe closely my rounds

So 3 months into this venture
The numb dumb hand

RheUMinations
NEXT

Don’t worry about your refill! RheUMinations will be sent to you quarterly! Don’t miss a single dose...Let us know if your contact information has changed. To share your news and updates with us email doncash@umich.edu.

RheUMinations Editor: Donna Cash

You are cordially invited to attend the reception for
The William D. Robinson Alumni Association
Saturday, November 7 starting at 8:00 pm
following the ACR Opening Ceremony

The Wine Salon at Scala’s Bistro
432 Powell Street, in the Union Square area of San Francisco
### ACR National Meeting University of Michigan Event Presentation Schedule

**Saturday, November 7**

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<th>Event</th>
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<tr>
<td>4:30-6:00</td>
<td>Opening Ceremony</td>
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**University of Michigan Alumni / Robinson Society Reception**
Saturday, 11/7 from 8:00 – 10:30 pm, The Wine Salon at Scala’s Bistro, 432 Powell Street in the Union Square area.

**Sunday, November 8**

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
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<tr>
<td>4:30 – 6:00 pm</td>
<td>Fibromyalgia 2015: Update on Management. Daniel J. Clauw, MD (023)</td>
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### Abstract Posters

#### Cytokines, Mediators, Cell-cell Adhesion, Cell Trafficking and Angiogenesis Poster I
**Session Time:** 9:00AM-11:00AM

**ABSTRACT NUMBER: 10**

**CD13/Aminopeptidase N Contributes to Angiogenesis and Monocyte Chemotaxis in Rheumatoid Arthritis**

Rachel Morgan¹, M. Asif Amin¹, Jeffrey Ruth¹, Gautam Edhayan², Stephanie Rasmussen³ and David A. Fox¹, ¹Internal Medicine, Division of Rheumatology, University of Michigan Medical Center, Ann Arbor, MI, ²Division of Rheumatology, University of Michigan Medical Center, Ann Arbor, MI, ³Division of Rheumatology, University of Michigan, Ann Arbor, MI

**Session Type:** ACR Poster Session A

#### Epidemiology and Public Health Poster I: Comorbidities and Outcomes of Systemic Inflammatory Diseases
**Session Time:** 9:00AM-11:00AM

**ABSTRACT NUMBER: 53**

**Associations Between Race and Income Disparity on Morbidity in Juvenile Dermatomyositis**

Kathryn Phillippi¹, Mark Hoeltzel², Angela Byun Robinson³, Susan Kim⁵ and CARRA investigators, ¹Pediatric Infectious Diseases and Rheumatology, Rainbow Babies and Children's Hospital / Case Medical Center, Cleveland, OH, ²Rheumatology Division, University of Michigan Mott Children's Hospital, Ann Arbor, MI, ³Rheumatology, University of Michigan Medical Center, Ann Arbor, MI, ⁵Division of Immunology, Boston Children's Hospital, Boston, MA

**Session Type:** ACR Poster Session A

**ABSTRACT NUMBER: 62**

**Patient Perception of Disease Burden in Diffuse Cutaneous Systemic Sclerosis**

Dinesh Khanna¹, Yannick Allanore², Christopher P. Denton³, Marco Matucci-Cerinic⁴, Janet E. Pope⁵, Barbara Hinzmann⁶, Siobhan Briody⁷, Janethe de Oliveira Pena⁸ and Oliver Distler⁹, ¹Division of Rheumatology, University of Michigan, Ann Arbor, MI, ²Immunogenetics, Cochin Institute, Paris, France, ³Rheumatology and Connective Tissue Diseases, University College London, London, United Kingdom, ⁴Department of Medicine, Division of Rheumatology, University of Florence, Florence, Italy, ⁵University of Western Ontario, London, ON, Canada, ⁶Bayer Pharma AG, Berlin, Germany, ⁷Blueprint Partnership, Manchester, United Kingdom, ⁸Bayer HealthCare Pharma, Whippany, NJ, ⁹Research of Systemic Autoimmune Diseases, Center of Experimental Rheumatology, University Hospital Zurich, Zurich, Switzerland

**Session Type:** ACR Poster Session A
ABSTRACT NUMBER: 82
Cross-Sectional Analysis of Heart Rate Variability in Patients with Fibromyalgia (FM): Correlations with Baseline Clinical Measures
Adam Dziuba1, Nancy A. Lockhart2, Howard Schubiner3, Daniel J. Clauw4, David A. Williams5 and Mark A. Lumley2, 1Medical School, University of Michigan, Ann Arbor, MI, 2Psychology, Wayne State University, Detroit, MI, 3Wayne State University, Detroit, MI, 4Anesthesiology, University of Michigan, Ann Arbor, MI, 5Anesthesiaiology, University of Michigan, Ann Arbor, MI
Session Type: ACR Poster Session A

ABSTRACT NUMBER: 84
Sexual Dimorphism in the Association Between Multi-Site Pain and Other Fibromyalgia Features: an Analysis of Data from Three UK Population-Based Studies
Linda E. Dean1, Lesley Arnold2, Robert Bennett3, Leslie J. Crofford4, Don Goldenberg5, Elisa Flüss1, Daniel J. Clauw6, Mary-Ann Fitzcharles7, Eduardo Paiva8, Roland Staud9 and Gary J. Macfarlane1, 1Musculoskeletal Research Collaboration (Epidemiology Group), University of Aberdeen, Aberdeen, United Kingdom, 2University of Cincinnati, Cincinnati, OH, 3SN-Office of Research & Development, Oregon Health & Science Univ, Portland, OR, 4Medicine, Vanderbilt University, Nashville, TN, 5Newton-Wellesley Hospital, Newton, MA, 6Anesthesiology, University of Michigan, Ann Arbor, MI, 7MGH, Montreal, QC, Canada, 8Rheumatology, Universidade Federal do Parana, Curitiba Parana, Brazil, 9University of Florida, Gainesville, FL.
Session Type: ACR Poster Session A

ABSTRACT NUMBER: 752
A Strong Association Between Gout and Diuretic Use Among Lupus Patients
Eric Wise1, Emily Lewis2, Puja Khanna2,3, Lili Zhao4 and W Joseph McCune5, 1Rheumatology, University of Michigan, Ann Arbor, MI, 2Rheumatology, University of Michigan, Ann Arbor, MI, 3Division of Rheumatology/Dept. of Internal Medicine, University of Michigan Medical Center, Ann Arbor, MI, 4Department of Statistic, University of Michigan, Ann Arbor, MI, 5Int Med/ Rheum, University of Michigan, Ann Arbor, MI
Session Type: ACR Poster Session A

ABSTRACT NUMBER: 798
Keratinocyte-Associated IL-6 Is Elevated in Cutaneous Lupus Rashes and Production of IL-6 By Keratinocytes Is Enhanced in Non-Involved Lupus Skin
Jasmine Stannard1, Emily Myers2, Tamra J. Reed3, Lori Lowe4 and J. Michelle Kahlenberg5, 1Int. Medicine/Rheumatology, University of Michigan, Ann Arbor, MI, 2Georgetown University, Washington, DC, 3Internal Medicine, Rheumatology, University of Michigan, Ann Arbor, MI, 4Dermatology, University of Michigan, Ann Arbor, MI, 5Internal Medicine, Division of Rheumatology, Division of Rheumatology, University of Michigan Medical Center, Ann Arbor, MI
Session Type: ACR Poster Session A

ABSTRACT NUMBER: 799
Transcriptional Profiling of Cutaneous Lupus Reveals Pronounced Changes in Keratinocyte and Myeloid Lineage Expressed Genes and Demonstrates Uniquely Regulated Interferon Pathways Between Rash Subtypes
Celine C. Berthier1, Jasmine Stannard2, Emily Myers3, William Swindell4, Lori Lowe4, Tamra J. Reed5, Johann Gudjonsson4 and J. Michelle Kahlenberg5, 1Nephrology, Division of Nephrology, University of Michigan Medical Center, Ann Arbor, MI, 2Int. Medicine/Rheumatology, University of Michigan, Ann Arbor, MI, 3Internal Medicine, Rheumatology, Georgetown University, Washington, DC, 4Dermatology, University of Michigan, Ann Arbor, MI, 5Internal Medicine, Division of Rheumatology, University of Michigan Medical Center, Ann Arbor, MI
Session Type: ACR Poster Session A

Cytokines, Mediators, Cell-cell Adhesion, Cell Trafficking and Angiogenesis
Session Time: 2:30PM-4:00PM

ABSTRACT NUMBER: 902
Inhibitor of DNA Binding 1 As a Fibroblast Derived Inflammatory Angiogenic Agonist in Rheumatoid Arthritis
Gautam Edhayan1, Christine M. Ha1, Ray A. Ohara1, Takeo Isozaki1, M. Asif Amin1, Ali S. Arbab2, Phillip L. Campbell1, Rachel Morgan3, W. Alexander Stinson3, Sean C. Friday4, David A. Fox1 and Jeffrey H. Ruth1, 1Internal Medicine, Division of Rheumatology, University of Michigan Medical Center, Ann Arbor, MI, 2Georgia Regents University, Augusta, GA, 3Division of Rheumatology, University of Michigan Medical Center, Ann Arbor, MI

Session Type: ACR Concurrent Abstract Session

ABSTRACT NUMBER: 905
Citrullinated Epithelial-Derived Neutrophil-Activating Peptide 78 (ENA-78/CXCL5) Induces Monocyte Migration Via JNK and NFκB Signaling Pathways
Ray A. Ohara1, Nicholas Lepore2, W. Alexander Stinson3, Gautam Edhayan3, Phillip L. Campbell1, Sarah Arwani1, Rachel Morgan1, Jeffrey H. Ruth1, Alisa E. Koch1,4, David A. Fox1 and M. Asif Amin1, 1Internal Medicine, Division of Rheumatology, University of Michigan, Ann Arbor, MI, 2University of Michigan, Division of Rheumatology, University of Michigan Medical Center, Ann Arbor, MI, 3Division of Rheumatology, University of Michigan Medical Center, Ann Arbor, MI, 4Eli Lilly and Company, Indianapolis, IN

Session Type: ACR Concurrent Abstract Session

Fibromyalgia: Insights Into Diagnostic Criteria and Symptom Epidemiology
Session Time: 2:30PM-4:00PM

ABSTRACT NUMBER: 915
Defining Pain for Fibromyalgia Criteria: Multi-Site or Widespread? an Analysis of Data from Four UK Population-Based Studies
Gary J. Macfarlane1, Linda E. Dean1, Robert Bennett4, Leslie J. Crofford3, Abimbola Ayorinde3, Elisa Fluess1, Daniel J. Clauw4, Mary-Ann Fitzcharles4, Don Goldenberg6, Eduardo Paiva7, Roland Staud3 and Lesley Arnold9, 1Musculoskeletal Research Collaboration (Epidemiology Group), University of Aberdeen, Aberdeen, United Kingdom, 2SN-Office of Research & Development, Oregon Health & Science Univ, Portland, OR, 3Medicine, Vanderbilt University Nashville, TN, 4Anesthesiology, University of Michigan, Ann Arbor, MI, 5MGH, Montreal, QC, Canada, 6Newton-Wellesley Hospital, Newton, MA, 7Sociedade Brasileira de Reumatologia, Sao Paulo, Brazil, 8University of Florida, Gainesville, FL, 9University of Cincinnati, Cincinnati, OH

Session Type: ACR Concurrent Abstract Session

Innate Immunity and Rheumatic Disease, Session Time: 2:30PM-4:00PM

ABSTRACT NUMBER: 933
DEK-Targeting DNA Aptamers As Novel Therapeutics for Inflammatory Arthritis
Nirit Mor-Vaknin1, Anjan K. Saha2, Maureen Legendre3, Carmelo Carmona-Rivera3, M. Asif Amin4, Bradley J. Rabquer5, Marta J. Gonzalez-Hernandez6, Julie M. Jorns7, Srilakshmi Yalavarthi8, Smriti Mohan9, Dave Pai10, Kristine Angevine11, Barbara Adams12, Jason S. Knight8, Alisa E. Koch1,4,13,14,15, David Fox14, Dave Engelke16, Mariana J. Kaplan17 and David Markovitz4, 1Infectious Diseases, University of Michigan, Ann Arbor, MI, 2Medical School, University of Michigan, Ann Arbor, MI, 3Systemic Autoimmunity Branch, National Institute of Arthritis and Musculoskeletal and Skin Diseases, National Institutes of Health, Bethesda, MD, 4Internal Medicine, University of Michigan, Ann Arbor, MI, 5Albion College, Ann Arbor, MI, 6Graduate Program in Immunology, University of Michigan, Ann Arbor, MI, 7Pathology, University of Michigan, Ann Arbor, MI, 8Division of Rheumatology, University of Michigan, Ann Arbor, MI, 9Pediatric Rheumatology, University of Michigan, Ann Arbor, MI, 10Scripps Research Institute, San Diego, CT, 11Appistry, Inc, St. Louis, MO, 12Pediatric Rheum PTD, Univ of Michigan Hlth System, Ann Arbor, MI, 13VA Medical Service, Ann Arbor, MI, 14Internal Medicine, Division of Rheumatology, University of Michigan Medical Center, Ann Arbor, MI, 15Internal Medicine, Veteran's Affairs and University of Michigan, Ann Arbor, MI, 16Biochemistry, University Michigan,
ABSTRACT NUMBER: 1014
Improvement in Mentoring Associated with Implementation of an Inter-Institutional Mentoring Program within Pediatric Rheumatology
Lakshmi N. Moorthy, Eyal Muscal, Meredith Riebschleger, Marisa S. Klein-Gitelman, Lise E. Nigrovic, Kelly A. Rouster-Stevens, Polly J. Ferguson, B. Anne Eberhard, Hermine I. Brunner, Rayfel Schneider, Peter A. Nigrovic, Pediatric Rheumatology, Rutgers-Robert Wood Johnson Medical School, New Brunswick, NJ; Pediatric Rheumatology, Baylor College of Medicine, Texas Children's Hospital, Houston, TX; Pediatric Rheumatology & Health Services Research, University of Michigan, Ann Arbor, MI; Division of Rheumatology, Boston Children's Hospital, Boston, MA; Division of Emergency Medicine, University of Michigan, Ann Arbor, MI; Pediatric Rheumatology, Emory Univ School of Medicine, Atlanta, GA; Dept of Pediatrics--Rheum, University of Iowa, Iowa City, IA; Schneider Children's Hospital, New Hyde Park, NY; Pediatric Rheumatology Collaborative Study Group, Cincinnati Children's Hospital Medical Center, Cincinnati, OH; Emory University School of Medicine and Children's Healthcare of Atlanta, Atlanta, GA; Division of Rheumatology, The Hospital for Sick Children and University of Toronto, Toronto, ON, Canada; Department of Medicine, Division of Rheumatology, Immunology and Allergy, Brigham and Women's Hospital, Harvard Medical School, Boston, MA.

Session Type: ACR Concurrent Abstract Session

ABSTRACT NUMBER: 1019
Brain Functional Connectivity Differentially Predicts Response to Two Centrally Acting Analgesics in Fibromyalgia
Eric Ichesco, Johnson Hampson, Lynne Pauer, Andrew Clair, Tobias Schmidt-Wilcke, David A. Williams, Daniel J. Clauw and Richard E. Harris, Anesthesiology, U. Michigan, Ann Arbor, MI; Pfizer Inc, New London, CT; Pfizer Inc., New York, NY; Bergmannsheil, Bochum, Germany; Anesthesiology, University of Michigan, Ann Arbor, MI.

Session Type: ACR Concurrent Abstract Session

ABSTRACT NUMBER: 1074
DNA Methylation Patterns in Naïve CD4+ T Cells Identify Epigenetic Susceptibility Loci for Malar Rash and Discoid Rash in Systemic Lupus Erythematosus
Paul Renauer, Patrick Coit, Matlock A. Jeffries, Joan T. Merrill, W Joseph McCune, Kathleen Maksimowicz-McKinnon and Amr H. Sawalha, Division of Rheumatology, University of Michigan, Ann Arbor, MI; Rheumatology, University of Oklahoma Health Sciences Center, Oklahoma City, OK; Oklahoma Medical Research Foundation, Oklahoma City, OK; Int Med/ Rheum, University of Michigan, Ann Arbor, MI; Rheumatology, Henry Ford Hospital, Detroit, MI; Rheumatology, University of Michigan, Ann Arbor, MI.

Session Type: ACR Concurrent Abstract Session

ABSTRACT NUMBER: 1075
The Scleroderma Lung Study II (SLS II) Shows That Both Oral Cyclophosphamide (CYC) and Mycophenolate Mofitil (MMF) Are Efficacious in Treating Progressive Interstitial Lung Disease (ILD) in Patients with Systemic Sclerosis (SSc)
Philip J. Clements, Donald Tashkin, Michael Roth, Dinesh Khanna, Daniel E. Furst, Chi-hong Tseng, Elizabeth R. Volkman and Robert Elashoff, Medicine, University of California Los Angeles, David Geffen School of Medicine, Los Angeles, CA; Medicine, University of Michigan, Ann Arbor, MI; Medicine, University of Chicago, Chicago, IL; Medicine, University of Texas Southwestern Medical Center, Dallas, TX; Medicine, University of Pennsylvania, Philadelphia, PA; Medicine, Emory University, Atlanta, GA; Medicine, University of Washington, Seattle, WA; Pulmonary and Critical Care Medicine, University of California Los Angeles, David Geffen School of Medicine, Los Angeles, CA; Pulmonary and Critical Care Medicine, University of California Los Angeles, David Geffen School of Medicine, Los Angeles, CA; Pulmonary and Critical Care Medicine, University of California Los Angeles, David Geffen School of Medicine, Los Angeles, CA; Pulmonary Medicine, University of Chicago, Chicago, IL; Pulmonary Medicine, Emory University, Atlanta, GA; Pulmonary Medicine, University of Washington, Seattle, WA.

Session Type: ACR Concurrent Abstract Session
ABSTRACT NUMBER: 1076
Safety and Tolerability of Cyclophosphamide Versus Mycophenolate for Systemic Sclerosis-Related Interstitial Lung Disease
Elizabeth R. Volkmann¹, Michael Roth², Robert Elashoff³, Philip J. Clements¹, Daniel E. Furst², Dinesh Khanna¹, Jonathan Goldin³, Donald Tashkin¹ and Scleroderma Lung Study II Group, ¹Medicine, University of California Los Angeles, David Geffen School of Medicine, Los Angeles, CA, ²Medicine, University of California, Los Angeles, David Geffen School of Medicine, Los Angeles, CA, ³Biomathematics, University of California, Los Angeles, Los Angeles, CA, ⁴Medicine, University of Michigan, Ann Arbor, MI, ⁵David Geffen School of Medicine, University of California, Los Angeles, Los Angeles, CA
Session Type: ACR Concurrent Abstract Session

ABSTRACT NUMBER: 1078
CXCL4 Does Not Predict Extent or Progression of Interstitial Lung Disease in Systemic Sclerosis
Elizabeth R. Volkmann¹, Donald P. Tashkin¹, Michael Roth¹, Chi-hong Tseng¹, Holly LeClair², Philip J. Clements¹, Daniel E. Furst³, Maureen D Mayes⁴, Julio Charles⁵, Dinesh Khanna¹, Robert Elashoff¹, Shervin Assassi¹ and Scleroderma Lung Study II Group, ¹Medicine, University of California Los Angeles, David Geffen School of Medicine, Los Angeles, CA, ²University of California Los Angeles, David Geffen School of Medicine, Los Angeles, CA, ³Medicine, University of California, Los Angeles, David Geffen School of Medicine, Los Angeles, CA, ⁴University of Texas - Houston Medical School, Houston, TX, ⁵Internal Medicine/Rheumatology, University of Texas - Houston Medical School, Houston, TX, ⁶University of Michigan, Ann Arbor, MI, ⁷Biomathematics, University of California, Los Angeles, Los Angeles, CA, ⁸Rheumatology, University of Texas Medical School at Houston, Houston, TX
Session Type: ACR Concurrent Abstract Session

ABSTRACT NUMBER: 1079
The Potential Effect on Recruitment of Restricting Skin Scores Eligibility Criteria in Early Diffuse Scleroderma Trials
Robyn T. Domsic¹, Dinesh Khanna², Mary Lucas³, Virginia D. Steen⁴, Daniel E. Furst⁵, Robert Lafyatis⁶ and Thomas A. Medsger Jr.⁷, ¹Medicine - Rheumatology, University of Pittsburgh, Pittsburgh, PA, ²Division of Rheumatology, University of Michigan, Ann Arbor, MI, ³Medicine, University of Pittsburgh Scleroderma Center, Pittsburgh, PA, ⁴Rheumatology, Georgetown University Medical Center, Washington, DC, ⁵Medicine, University of California, Los Angeles, David Geffen School of Medicine, Los Angeles, CA, ⁶Boston University School of Medicine, Boston, MA, ⁷Department of Medicine/Rheumatology, University of Pittsburgh, Pittsburgh, PA
Session Type: ACR Concurrent Abstract Session

Monday, November 9

Abstract Posters
B cell Biology and Targets in SLE, pSS, and other Autoimmune Disease
Session Time: 9:00AM-11:00AM

ABSTRACT NUMBER: 1119
High Resolution Motif Mapping of â€œin Situâ€ Anti-Native-Vimentin Antibodies in Lupus Tubulointerstitial Nephritis
Andrew Kinloch¹, Yuta Asano², Balazs Banfal³, Gregor Dernick³, Carole Henry Dunand⁴, Nirit Mor-Vaknin⁵, Maureen Legendre³, David Markovitz⁶, Thomas Schindler⁶ and Marcus R. Clark⁷, ¹University of Chicago, Chicago, IL, ²Committee of immunology, University of Chicago, Chicago, IL, ³Translational Technologies and Bioinformatics, Roche, Basel, Switzerland, ⁴Rheumatology and Knapp Center for Lupus and Immunology Research, University of Chicago, Chicago, IL, ⁵University of Michigan, Ann Arbor, MI, ⁶Roche Innovation Center
**Session Type:** ACR Poster Session B

### Biology and Pathology of Bone and Joint: Osteoarthritis Pathogenesis,
**Session Time:** 9:00AM-11:00AM

<table>
<thead>
<tr>
<th>Abstract Number: 1130</th>
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<tbody>
<tr>
<td><strong>Global DNA Methylation Analysis of Osteoarthritic Subchondral Bone Reveals Significant Regional Variation and Similarity to Overlying Cartilage</strong></td>
</tr>
<tr>
<td>1Rheumatology, University of Oklahoma Health Sciences Center, Oklahoma City, OK, 2Arthritis and Clinical Immunology, Oklahoma Medical Research Association, Oklahoma City, OK, 3Department of Medicine, University of Oklahoma Health Sciences Center, Oklahoma City, OK, 4Arthritis &amp; Clinical Immunology Research Program, Oklahoma Medical Research Foundation, Oklahoma City, OK, 5Univ, Oklahoma City, OK</td>
</tr>
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### Education Poster I (ARHP): Education/Community Programs,
**Session Time:** 9:00AM-11:00AM

<table>
<thead>
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<th>Abstract Number: 1200</th>
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<tbody>
<tr>
<td><strong>Use of Focus Groups and Patient Partners to Revise an Internet Self-Management Program</strong></td>
</tr>
<tr>
<td>1University of New Mexico, Albuquerque, NM, 2Division of Rheumatology, University of Michigan, Ann Arbor, MI, 3University of Michigan, Ann Arbor, MI, 4Scleroderma Foundation Southern California, Culver City, CA, 5Medical University of South Carolina, Charleston, SC, 6Patient Partner, Charleston, SC, 7Patient Partner, Shelby Township, MI, 8Scleroderma Foundation Michigan Chapter, Southfield, MI, 9Scleroderma Research Foundation, Henderson, NV, 10Scleroderma Research Foundation, San Francisco, CA, 11College of Pharmacy, University of New Mexico, Albuquerque, NM, 12Division of Rheumatology and Immunology, Medical University of South Carolina, Charleston, SC, 13Health Sciences Ctr OT Program, 1 University of New Mexico, Albuquerque, NM</td>
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### Health Services Research Poster II (ACR): Healthcare Access, Patterns of Medication Use and Workforce Considerations,
**Session Time:** 9:00AM-11:00AM

<table>
<thead>
<tr>
<th>Abstract Number: 1274</th>
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<tbody>
<tr>
<td><strong>Factors That Impact Job Selection in Pediatric Rheumatology</strong></td>
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<tr>
<td><strong>Mara L Becker</strong>, <strong>Meredith Riebschleger</strong>, <strong>Holly S. Ruch-Ross</strong>, <strong>Laura Laskosz</strong>, <strong>Carrie Radabaugh</strong>, <strong>Polly J. Ferguson</strong>, <strong>Kenneth N. Schikler</strong>, and <strong>Sandy D. Hong</strong></td>
</tr>
<tr>
<td>1Pediatric Rheumatology &amp; Health Services Research, University of Michigan, Ann Arbor, MI, 2Independent Research and Evaluation Consultant, Evanston, IL, 3Rheumatology, Children's Mercy Kansas City, Kansas City, MO, 4Pediatric Rheumatology &amp; Health Services Research, University of Michigan, Ann Arbor, MI, 5Independent Research and Evaluation Consultant, Evanston, IL, 6Department of Education, American Academy of Pediatrics, Elk Grove Village, IL, 7Department of Education, American Academy of Pediatrics, Elk Grove Village, IL, 8Dept of Pediatrics--Rheum, University of Iowa, Iowa City, IA, 9Pediatrics, University of Louisville, Louisville, KY, 10Pediatrics-Rheumatology, U of Iowa Children's Hosp, Iowa City, IA</td>
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### Abstract Number: 1290

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<tr>
<td><strong>Chieh-I Chen</strong>, <strong>Li Wang</strong>, <strong>Wenhui Wei</strong>, <strong>Huseyin Yuce</strong>, and <strong>Kristine Phillips</strong></td>
</tr>
<tr>
<td>1Regeneron Pharmaceuticals, Inc., Tarrytown, NY, 2Director, Analytic Research, STATinMED Research, Plano, TX, 3Sanofi-Aventis, Bridgewater, NJ, 4New York City College of Technology (CUNY), New York, NJ, 5Rheumatology, University of Michigan, Ann Arbor, MI</td>
</tr>
</tbody>
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**Session Type:** ACR Poster Session B
The Pediatric Rheumatology Workforce in 2015: A Survey of Pediatric Rheumatologists

Meredith Riebschleger1, Mara L Becker2, Holly S. Ruch-Ross3, Laura Laskosz4, Carrie Radabaugh5, Polly J. Ferguson6, Kenneth N. Schikler7 and Sandy D. Hong8. 1Pediatric Rheumatology & Health Services Research, University of Michigan, Ann Arbor, MI, 2Rheumatology, Children's Mercy Kansas City, Kansas City, MO, 3Independent Research and Evaluation Consultant, Evanston, IL, 4Division of Technical and Medical Services, The American Academy of Pediatrics, Elk Grove Village, IL, 5Department of Education, American Academy of Pediatrics, Elk Grove Village, IL, 6Dept of Pediatrics--Rheum, University of Iowa, Iowa City, IA, 7Pediatrics, University of Louisville, Louisville, KY, 8Pediatrics-Rheumatology, U of Iowa Children's Hosp, Iowa City, IA

Session Type: ACR Poster Session B

Relationship Between Patient Reported Outcome Measures and Evoked Pain Measures in Knee Osteoarthritis

J. Ryan Scott1, Steven E. Harte1, David A. Williams2,3, Daniel J. Clauw4 and Kristine Phillips5. 1Department of Anesthesiology, University of Michigan, Ann Arbor, MI, 2Chronic Pain & Fatigue Rsch Ctr, Univ of MI Hlth System-Lobby M, Ann Arbor, MI, 3Anesthesiaiology, University of Michigan, Ann Arbor, MI, 4Anesthesiology, University of Michigan, Ann Arbor, MI, 5Internal Medicine, University of Michigan, Ann Arbor, MI

Session Type: ACR Poster Session B

Predicting Response to Osteoarthritis Treatment Based on Patient Reported Outcome Measures and Quantitative Sensory Testing

Kristine Phillips1, David A. Williams2, Arnold Gammaitoni3, J. Ryan Scott4, Steven E. Harte4, Susan L. Murphy4 and Daniel J. Clauw5. 1Internal Medicine, University of Michigan, Ann Arbor, MI, 2Anesthesiology, University of Michigan, Ann Arbor, MI, 3Anesthesiology, University of Michigan Medical School, Ann Arbor, MI, 4Zogenix, Inc, San Diego, CA, 5Department of Anesthesiology, University of Michigan, Ann Arbor, MI

Session Type: ACR Poster Session B

Descriptive Characteristics of Patients Prescribed Opioids for the Treatment of Chronic Pain

Jenna Goesling1, Stephanie Moser2, Afton L. Hassett3, Chad Brummett1 and Natalie Gulau4. 1Anesthesiology, University of Michigan, Ann Arbor, MI, 2Department of Anesthesiology, University of Michigan, Ann Arbor, MI, 3Anesthesiology, University of Michigan Medical School, Ann Arbor, MI

Session Type: ACR Poster Session B

Validation of a Revised Version of the Michigan Body Map

Chad Brummett1, Rishi Bakshi2, Daniel Leung3, Jennifer Zollars3, Jenna Goesling1, Stephanie Moser4, David A. Williams5 and Afton L. Hassett6. 1Anesthesiology, University of Michigan, Ann Arbor, MI, 2Physical Medicine and Rehabilitation, University of Michigan Medical School, Ann Arbor, MI, 3Anesthesiology, University of Michigan Health System, Ann Arbor, MI, 4Department of Anesthesiology, University of Michigan, Ann Arbor, MI, 5Anesthesiology, University of Michigan, Ann Arbor, MI, 6Anesthesiology, University of Michigan Medical School, Ann Arbor, MI

Session Type: ACR Poster Session B

Pediatric Rheumatologists’ Perceptions of Career Satisfaction, Confidence in Fulfilling Their Roles, and Burn-out

Lakshmi N. Moorthy1, Rayfel Schneider2, Meredith Riebschleger3, Eyal Muscal4, Marisa S. Klein-Gitelman5, B. Anne Eberhard6, Polly J. Ferguson7, Kelly A. Rouster-Stevens8, Hermine I. Brunner9, Sampath Prahalad3 and
### ABSTRACT NUMBER: 1617

**Evidence for Citrullinated Inhibitor of DNA Binding 1 (Id1) As a Novel Autoantigen Candidate in Rheumatoid Arthritis**

Ray A. Ohara¹, Gautam Edhayan¹, W. Alexander Stinson², Phillip L. Campbell¹, Henriette A. Remmer³, M. Asif Amin¹, David A. Fox¹ and Jeffrey H. Ruth¹, ¹Internal Medicine, Division of Rheumatology, University of Michigan Medical Center, Ann Arbor, MI, ²Division of Rheumatology, University of Michigan Medical Center, Ann Arbor, MI, ³Biomedical Research Core Facilities, Proteomics & Peptide Synthesis Core, University of Michigan Medical School, Ann Arbor, MI

**Session Type:** ACR Poster Session B

### ABSTRACT NUMBER: 1873

**Inter and Intrarater Reliability of the Modified Rodnan Skin Score in Early Diffuse Systemic Sclerosis**

Jessica K. Gordon¹, Veronica J. Berrocal², Shervin Assassi³, Elana J. Bernstein⁴, Robyn T. Domsic⁵, Faye N. Hant⁶, Monique E. Hinchcliff⁷, Elena Schiopu⁶, Virginia D. Steen⁵, Tracy M. Frech¹⁰ and Dinesh Khanna¹¹, ¹Rheumatology, Hospital for Special Surgery, New York, NY, ²Div of Rheumatology, University of Michigan, Ann Arbor, MI, ³Rheumatology, University of Texas Medical School at Houston, Houston, TX, ⁴Rheumatology, Columbia University College of Physicians & Surgeons, New York, NY, ⁵Medicine - Rheumatology, University of Pittsburgh, Pittsburgh, PA, ⁶Dept of Medicine, Medical University of South Carolina, Charleston, SC, ⁷Division of Rheumatology, Division of Rheumatology, Northwestern University, Feinberg School of Medicine, Chicago, IL, ⁸University of Michigan, Ann Arbor, MI, ⁹Rheumatology, Georgetown University Medical Center, Washington, DC, ¹⁰Div of Rheumatology, University of Utah, Salt Lake City, UT, ¹¹Division of Rheumatology, University of Michigan, Ann Arbor, MI

**Session Type:** ACR Poster Session B

### ABSTRACT NUMBER: 1882

**The Predictive Value of Pulmonary Function Tests to Diagnose Interstitial Lung Disease in Adults with Early Diffuse Cutaneous Systemic Sclerosis**

Elana J. Bernstein¹, Veronica J. Berrocal², Virginia D. Steen³, Victoria K. Shanmugam⁴,⁵, Ami A. Shah⁶, Monique E. Hinchcliff⁷, Faye N. Hant⁶, Jessica K. Gordon⁸, Tracy M. Frech¹⁰, Robyn T. Domsic¹¹, Shervin Assassi¹² and Dinesh Khanna¹³, ¹Rheumatology, Columbia University College of Physicians & Surgeons, New York, NY, ²Div of Rheumatology, University of Michigan, Ann Arbor, MI, ³Rheumatology, Georgetown University Medical Center, Washington, DC, ⁴Division of Rheumatology, The George Washington University, Washington, DC, ⁵Director, Division of Rheumatology, The George Washington University, Washington, DC, ⁶Rheumatology, Johns Hopkins University School of Medicine, Baltimore, MD, ⁷Rheumatology, Northwestern University, Chicago, IL, ⁸Dept of Medicine, Medical University of South Carolina, Charleston, SC, ⁹Rheumatology, Hospital for Special Surgery, New York, NY, ¹⁰Div of Rheumatology, University of Utah, Salt Lake City, UT, ¹¹Medicine - Rheumatology, University of Pittsburgh, Pittsburgh, PA, ¹²Rheumatology, University of Texas Medical School at Houston, Houston, TX, ¹³Division of Rheumatology, University of Michigan, Ann Arbor, MI

**Session Type:** ACR Poster Session B
**ABSTRACT NUMBER: 1888**

**There Is a Need for New Systemic Sclerosis Subset Criteria: A Content Analytic Approach**

Sindhujohnson1, Medha Soowamber2, Jaap Fransen3, Dinesh Khanna4, Frank H.J. van den Hoogen5, Murray Baron6, Marco Matucci Cerinic7, Christopher P. Denton8, Thomas A. Medsger Jr.9, Patricia E. Carreira10, Gabriela Riemekasten11, Jorg HW. Distler12, Armando Gabrielli13, Virginia D. Steen14, Lorinda Chung15, Richard Silver16, John Varga17, Ulf Müller-Ladner18, Madelon C. Vonk19, Ulrich A. Walker20, Frank Wollheim21, Ariane L. Herrick22, Daniel E. Furst23, Lazlo Czirjak24, Otylia Kowal-Bielecka25, Francesco Del Galdo26, Maurizio Cutolo27, Nicolas Hunzelmans28, Charles Murray29, Ivan Foeldvari30, Luc Mouthon31, Nemanja Damjanov32, Bashar Kahaleh33, Tracy M. Frech34, Shervin Assassi35, Lesley Ann Saketkoo36, and Janet E. Pope37, 1Toronto Scleroderma Program, Toronto Western Hospital, Mount Sinai Hospital, University of Toronto, Toronto University Health Network Pulmonary Hypertension Programme, Toronto, ON, Canada, 2Rheumatology, University of Toronto/Toronto Western Hospital, Toronto, ON, Canada, 3Rheumatology, Radboud University Medical Centre, Nijmegen, Netherlands, 4Medicine, University of Michigan, Ann Arbor, MI, 5Rheumatology, Sint Maartenskliniek, Nijmegen, Netherlands, 6Pavilion A, Rm 216, Jewish General Hospital, Montreal, QC, Canada, 7Department of BioMedicine, Division of Rheumatology, Transition Unit, University of Florence, Firenze, Italy, 8Centre for Rheumatology, Royal Free Hospital, London, United Kingdom, 9Medicine/Rheumatology, Univ of Pittsburgh, Pittsburgh, PA, 10Department of Rheumatology, Hospital Universitario 12 de Octubre, Madrid, Spain, 11Rheumatology, Human medicine, BERLIN, Germany, 12Department of Internal Medicine 3, University of Erlangen-Nuremberg, Erlangen, Germany, 13Clinica Medica, Università Politecnica delle Marche, Ancona, Italy, 14Rheumatology, Georgetown University Medical Center, Washington, DC, 15Division of Immunology and Rheumatology, Stanford University School of Medicine, Stanford, CA, 16Div Rheumatology & Immunology, Medical University of South Carolina, Charleston, SC, 17Medicine, Northwestern University Feinberg School of Medicine, Chicago, IL, 18Rheumatology, Internal Medicine, Bad Nauheim, Germany, 19Rheumatology, Rheumatology, Nijmegen, Netherlands, 20Rheumatology, Systemic Sclerosis, Basel, Switzerland, 21Rheumatology, Lund University Hospital, Lund, Sweden, 22Centre for Musculoskeletal Research, University of Manchester, Manchester Academic Health Science Centre, Manchester, United Kingdom, 23Medicine, University of California, Los Angeles, David Geffen School of Medicine, Los Angeles, CA, 24University of Pécs Medical Center, Pécs, Hungary, 25Department of Rheumatology and Internal Medicine, Medical University of Bialystok, Bialystok, Poland, 26University of Leeds, Leeds, United Kingdom, 27Research Laboratory and Academic Division of Clinical Rheumatology, Department of Internal Medicine, University of Genova, Genova, Italy, 28Department of Dermatology, University of Cologne, Cologne, Germany, 29Department of Gastroenterology, Royal Free Hospital, London, United Kingdom, 30Rheumatology, Hamburg, Germany, 31Department of Internal Medicine, Department of Internal Medicine, Cochin Hospital, Referent Center for Necrotizing Vasculitis and Systemic Sclerosis, Paris-Descartes University, AP-HP, Paris, France, 32Resavska 69, Institute of Rheumatology, Belgrade, Serbia, 33Medicine/Rheumatology, The University of Toledo, Toledo, OH, 34Div of Rheumatology, University of Utah Medical Ctr, Salt Lake City, UT, 35Rheumatology, University of Texas Medical School at Houston, Houston, TX, 36Tulane University Lung Center, New Orleans Scleroderma and Sarcoidosis Patient Care and Research Center, New Orleans, LA, 37University of Western Ontario, London, ON, Canada

**Session Type:** ACR Poster Session B

**Antiphospholipid Syndrome: Recent Findings, Session Time:** 2:30PM-4:00PM

**ABSTRACT NUMBER: 2002**

**Dnase Treatment Protects Against DVT Formation in a Mouse Model of Antiphospholipid Syndrome**

He Meng1, Srilakshmi Yalavarthi2, Levi F. Mazza3, Megan A. Elfline1, Catherine E. Luke1, Peter K. Henke1 and Jason S. Knight2, 1University of Michigan, Ann Arbor, MI, 2Division of Rheumatology, University of Michigan, Ann Arbor, MI, 3Department of Internal Medicine, Division of Rheumatology, University of Michigan, Ann Arbor, MI

**Session Type:** ACR Concurrent Abstract Session
Primary Antiphospholipid Syndrome Is Characterized By Endothelial Progenitor Dysfunction and a Type I Interferon Signature

Robert C. Grenn, Srilakshmi Yalavarthi, Paula L. Bockenstedt, and Jason S. Knight. University of Michigan, Ann Arbor, MI, Division of Rheumatology, University of Michigan, Ann Arbor, MI, Department of Internal Medicine, Division of Hematology/Oncology, University of Michigan, Ann Arbor, MI. #2003

Session Type: ACR Concurrent Abstract Session

Analysis of Gout Subjects Receiving Lesinurad and Allopurinol Combination Therapy By Baseline Renal Function

Kenneth G. Saag, Thomas Bardin, Alexander So, Puja Khanna, Chris Storgard, Scott Baumgartner, Maple Fung, Nihar Bhakta, Scott Adler, Jeff Kopicko, and Michael A. Becker. University of Alabama at Birmingham, Birmingham, AL, Lariboisière Hospital, Paris, France, Rheumatology, Centre Hospitalier Universitaire Vaudois, University of Lausanne, Lausanne, Switzerland, CHU Vaudois, University of Lausanne, Lausanne, Switzerland, Division of Rheumatology/Dept. of Internal Medicine, University of Michigan Medical Center, Ann Arbor, MI, 4939 Directors Place, Ardea Biosciences, Inc., San Diego, CA, Ardea Biosciences, Inc., San Diego, CA, AstraZeneca Pharmaceuticals, Wilmington, DE, University of Chicago, Chicago, IL

Session Type: ACR Concurrent Abstract Session

Lesinurad, a Novel Selective Uric Acid Reabsorption Inhibitor, in Combination with Febuxostat, in Patients with Tophaceous Gout

Nicola Dalbeth, Graeme Jones, Robert Terkeltaub, Dinesh Khanna, Jeff Kopicko, Nihar Bhakta, Maple Fung, Chris Storgard, Scott Baumgartner, and Fernando Perez-Ruiz. Department of Medicine, University of Auckland, Auckland, New Zealand, Musculoskeletal Unit, Menzies Institute for Medical Research, University of Tasmania, Hobart, Australia, Medicine-Rheumatology, University of California, San Diego, La Jolla, CA, Div of Rheumatology, University of Michigan, Ann Arbor, MI, Ardea Biosciences, Inc., San Diego, CA, 4939 Directors Place, Ardea Biosciences, Inc., San Diego, CA, Servicio de Reumatologia, Hospital Universitario Cruces, Baracaldo, Spain

Session Type: ACR Concurrent Abstract Session

Placentas of Lupus Pregnancies Are Characterized By Marked Inflammatory Changes Despite Good Disease Control

Wendy Marder, Jason S. Knight, Mariana J. Kaplan, Emily C. Somers, Xu Zhang, Alexander A. O'Dell, Vasantha Padmanabhan, and Richard W. Lieberman. Div of Rheumatology, University of Michigan, Ann Arbor, MI, Division of Rheumatology, University of Michigan, Ann Arbor, MI, National Institute of Arthritis and Musculoskeletal and Skin Diseases, National Institutes of Health, Bethesda, MD, University of Michigan, Ann Arbor, MI, Department of Internal Medicine, Division of Rheumatology, University of Michigan, Ann Arbor, MI

Session Type: ACR Concurrent Abstract Session

Tuesday, November 10

2:30 PM - 4:00 PM
Edmond L. Dubois, MD Memorial Lectureship
Epigenetic variability in lupus. Amr Sawalha, MD. (2:30 - 2:45)

4:30 PM - 6:00 PM
Pulmonary Hypertension in the Rheumatic Diseases. Dinesh Khanna, MD, MSc. (085) West 3011
Abstract Posters

**Antiphospholipid Syndrome: Basic Science, Session Time: 9:00AM-11:00AM**

**ABSTRACT NUMBER: 2174**

Neutrophils in Primary Antiphospholipid Syndrome Are Characterized By a Prominent Activated Phenotype and Uniquely Remodeled Chromatin Architecture

*Patrick Coit, Srilakshmi Yalavarthi, Jason S. Knight and Amr H. Sawalha*, Division of Rheumatology, University of Michigan, Ann Arbor, MI.

*Session Type: ACR Poster Session C*

**Fibromyalgia, Soft Tissue Disorders, Regional and Specific Clinical Pain Syndromes Poster II**

**Session Time: 9:00AM-11:00AM**

**ABSTRACT NUMBER: 2290**

The 2011 Fibromyalgia (FM) Survey Criteria Are a Surrogate Measure of Pain Centralization

*Steven E. Harte*, Daniel J. Clauw, Andrew D. Clauw, J. Ryan Scott, Stephanie Moser and Chad Brummett, 1Department of Anesthesiology, University of Michigan, Ann Arbor, MI, 2Anesthesiology, University of Michigan, Ann Arbor, MI

*Session Type: ACR Poster Session C*

**ABSTRACT NUMBER: 2294**

Re-Scoring the 2011 Fibromyalgia Survey Criteria to be a Better Surrogate for Pain Centralization

*Stephanie Moser*, Chad Brummett, Alexander Tsodikov, David A. Williams and Daniel J. Clauw, 1Department of Anesthesiology, University of Michigan, Ann Arbor, MI, 2Anesthesiology, University of Michigan, Ann Arbor, MI, 3Biostatistics, School of Public Health, University of Michigan, Ann Arbor, MI

*Session Type: ACR Poster Session C*

**ABSTRACT NUMBER: 2307**

Relationship of Sleep Quality and Fibromyalgia Outcomes in a Phase 2b Randomized, Double-Blind, Placebo-Controlled Study of Bedtime, Rapidly Absorbed, Sublingual Cyclobenzaprine (TNX-102 SL)


*Session Type: ACR Poster Session C*

**ABSTRACT NUMBER: 2308**

Responder Compared to Mean Change Analyses in a Fibromyalgia Phase 2b Clinical Study of Bedtime Rapidly Absorbed Sublingual Cyclobenzaprine (TNX-102 SL)

*R Michael Gendreau*, Daniel J. Clauw, Judith Gendreau, Bruce Daugherty and Seth Lederman, 1Gendreau Consulting LLC, Poway, CA, 2Anesthesiology, University of Michigan, Ann Arbor, MI, 3Tonix Pharmaceuticals, New York, NY, 4Research and Development, Tonix Pharmaceuticals, Inc., New York, NY

*Session Type: ACR Poster Session C*

**ABSTRACT NUMBER: 2309**

Bedtime, Rapidly Absorbed Sublingual Cyclobenzaprine (TNX-102 SL) for the Treatment of Fibromyalgia: Results of a Phase 2b Randomized, Double-Blind, Placebo-Controlled Study

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<th>Session Type: ACR Poster Session C</th>
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<tbody>
<tr>
<td><strong>Metabolic and Crystal Arthropathies Poster II</strong>, <strong>Session Time:</strong> 9:00AM-11:00AM</td>
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<tr>
<td><strong>ABSTRACT NUMBER:</strong> 2352</td>
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<tr>
<td><strong>Efficacy and Safety in Patients with Tophaceous Gout Receiving Lesinurad and Febuxostat Combination Therapy: Interim Analysis of an Extension Study</strong></td>
</tr>
<tr>
<td>Nicola Dalbeth¹, Graeme Jones², Robert Terkeltaub³, Dinesh Khanna⁴, Jeff Kopicko⁵, Scott Adler⁶, Nihar Bhakta⁷, Maple Fung⁸, Chris Storgard⁹, Scott Baumgartner⁵ and Fernando Perez-Ruiz¹⁰, ¹Department of Medicine, University of Auckland, Auckland, New Zealand, ²Musculoskeletal Unit, Menzies Institute for Medical Research, University of Tasmania, Hobart, Australia, ³Medicine-Rheumatology, University of California, San Diego, La Jolla, CA, ⁴Div of Rheumatology, University of Michigan, Ann Arbor, MI, ⁵Ardea Biosciences, Inc., San Diego, CA, ⁶AstraZeneca Pharmaceuticals, Wilmington, DE, ⁷Servicio de Reumatologia, Hospital Universitario Cruces, Baracaldo, Spain</td>
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<td><strong>Session Type:</strong> ACR Poster Session C</td>
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| **ABSTRACT NUMBER:** 2353 |
| **Lesinurad and Febuxostat Combination Therapy: Analysis of Treatment Based on Patient Baseline Renal Function** |
| Nicola Dalbeth¹, Graeme Jones², Robert Terkeltaub³, Dinesh Khanna⁴, Jeff Kopicko⁵, Scott Adler⁶, Nihar Bhakta⁷, Maple Fung⁸, Chris Storgard⁹, Scott Baumgartner⁵ and Fernando Perez-Ruiz¹⁰, ¹Department of Medicine, University of Auckland, Auckland, New Zealand, ²Musculoskeletal Unit, Menzies Institute for Medical Research, University of Tasmania, Hobart, Australia, ³Medicine-Rheumatology, University of California, San Diego, La Jolla, CA, ⁴Div of Rheumatology, University of Michigan, Ann Arbor, MI, ⁵Ardea Biosciences, Inc., San Diego, CA, ⁶AstraZeneca Pharmaceuticals, Wilmington, DE, ⁷Servicio de Reumatologia, Hospital Universitario Cruces, Baracaldo, Spain |
| **Session Type:** ACR Poster Session C |

| **Osteoarthritis - Clinical Aspects Poster II:** Biomarkers, Biomechanics and Health Services Research, **Session Time:** 9:00AM-11:00AM |
| **ABSTRACT NUMBER:** 2406 |
| **The 2011 Fibromyalgia (FM) Criteria Are Helpful in Identifying Central Sensitization in Knee Osteoarthritis** |
| Steven E. Harte¹, Andrew D. Clauw¹, J. Ryan Scott¹, Daniel J. Clauw² and Chad Brummett², ¹Department of Anesthesiology, University of Michigan, Ann Arbor, MI, ²Anesthesiology, University of Michigan, Ann Arbor, MI |
| **Session Type:** ACR Poster Session C |

| **Research Methodology Poster (ARHP), ** **Session Time:** 9:00AM-11:00AM |
| **ABSTRACT NUMBER:** 2540 |
| **Construct Validity of the Promis-29 in Systemic Sclerosis: Results from the Scleroderma Patient-Centered Intervention Network (SPIN) Cohort** |
| Linda Kwakkenbos¹, Brett D. Thoms¹, Susan J. Bartlett², Marie-Eve Carrier², Marie Hudson¹, Luc Mouthon³, Vanessa L. Malcarne³, Maureen Sauvé⁴, Dinesh Khanna⁸ and SPIN investigators, ¹McGill University, Montreal, QC, Canada, ²Medicine, McGill University, Montreal, QC, Canada, ³Lady Davis Institute for Medical Research, Jewish General Hospital, Montreal, QC, Canada, ⁴Paris Descartes University, UPRES-EA 4058, Department of Internal Medicine, Cochin Hospital, Paris, France, ⁵SDSU/UC San Diego Joint Doctoral Program in Clinical Psychology, San Diego, CA, ⁶Scleroderma Societies of Canada and Ontario, Hamilton, QC, Canada, ⁷Division of Rheumatology, University of Michigan, Ann Arbor, MI |
| **Session Type:** ACR Poster Session C |

| **Rheumatoid Arthritis - Clinical Aspects Poster Session III, ** **Session Time:** 9:00AM-11:00AM |
| **ABSTRACT NUMBER:** 2645 |
| **Changes in Clinical Disease Activity Index and Changes in Sleep Among RA Patients Initiating Disease Modifying Antirheumatic Drugs** |
ABSTRACT NUMBER: 2945
Diffuse Alveolar Hemorrhage in SLE: Risk Factors, Response to Therapy, and Survival
Session Type: ACR Poster Session C
Systemic Lupus Erythematosus - Clinical Aspects and Treatment Poster Session III
Session Time: 9:00AM-11:00AM

ABSTRACT NUMBER: 2961
Reliability and Validity of the Total Joint Count and Swollen Joint Count in Early Diffuse Systemic Sclerosis
Session Type: ACR Poster Session C
Systemic Sclerosis, Fibrosing Syndromes and Raynaud's - Clinical Aspects and Therapeutics Poster III, Session Time: 9:00AM-11:00AM

ABSTRACT NUMBER: 2968
Interrater Reliability of Nailfold Capillaroscopy in Systemic Sclerosis Using Widefield Microscopy
Session Type: ACR Poster Session C

ABSTRACT NUMBER: 2978
Longitudinal Assessment of Gastrointestinal Symptoms in the Prospective Registry of Early Systemic Sclerosis Cohort
Evaluation of Systemic Sclerosis Risk Genes in the Turkish Population
Javier Martín1, Francisco David Carmona2, Tamara Fernández-Aranguren1, Alberto Serrano-Fernández3, Ahmed Mesut Onat4, Gema Robledo5, Enrique Raya6, Haner Direskeneli7, Amr H. Sawalha8 and Sule Yavuz9, 
1Instituto de Parasitología y Biomedicina López-Neyra, IPBLN-CSIC, PTS-Granada, Granada, Spain, 2Internal Medicine Division of Rheumatology, Gaziantep University, Faculty of Medicine, Gaziantep, Turkey, 3Rheumatology, Hospital Clínico San Cecilio, Granada, Spain, 4Rheumatology, Hospital Clínico San Cecilio, Granada, Spain, 5Department of Rheumatology, Marmara University Faculty of Medicine, Istanbul, Turkey, 6Division of Rheumatology, University of Michigan, Ann Arbor, MI, 7Rheumatology, Istanbul Bilim University, Faculty of Medicine, Department of Rheumatology, Istanbul, Turkey
Session Type: ACR Poster Session C

A Genome-Wide Association Study of a Hispanic Systemic Sclerosis Cohort
Lara Bossini-Castillo1, Enrique Raya2, John D. Reveille3, Shervin Assassi4, Olga Y Gorlova5, Dinesh Khanna6, Daniel E. Furst7, Suzanne Kafaja8, Robert W. Simms9, Robert Lafyatis9, Tracy M. Frech10, Virginia D. Steen11, Barri J. Fessler12, Jerry A. Molitor13, Marta Alarcón-Riquelme14, Javier Martín16 and Maureen D Mayes4, 
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Session Type: ACR Poster Session C

Scleroderma Keratinocytes Promote Fibroblast Activation Independent of TGF-β
Sara S McCoy1, Tamra J. Reed1, Pei-Suen Tsou2, Dinesh Khanna3, J. Michelle Kahlenberg4 and Celine C. Berthier5
1Division of Rheumatology, University of Michigan Medical Center, Ann Arbor, MI, 2Rheumatology, University of Pittsburgh, Pittsburgh, PA, 3Rheumatology, Johns Hopkins University School of Medicine, Baltimore, MD, 4Dept of Medicine, Medical University of South Carolina, Charleston, SC, 5Rheumatology, University of Texas Medical School at Houston, Houston, TX, 6Division of Rheumatology, Northwestern University, Feinberg School of Medicine, Chicago, IL, 7Columbia University, New Yory, NY, 8Rheumatology, Georgetown University Medical Center, Washington, DC, 9Director, Division of Rheumatology, The George Washington University, Washington, DC, 10Division of Rheumatology, The George Washington University, Washington, DC, 11Division of Rheumatology, University of Michigan, Ann Arbor, MI
Session Type: ACR Poster Session C
Histone H2AX Phosphorylation As a Measure of DNA Double Strand Breaks and a Marker of Environmental Stress and Disease Activity in Lupus

Rajaie Namas, Paul Renauer, Mikhail Ognenovski, Pei-Suen Tsou and Amr H. Sawalha, Division of Rheumatology, University of Michigan, Ann Arbor, MI

Session Type: ACR Concurrent Abstract Session

Under-Treatment of Cardiovascular Risk Factors in Patients with Psoriatic Disease - an International Multicentre Study

Lihi Eder1, Vinod Chandran1, Cheryl Rosen2, Jan Dutz3, James T. Elder4, Proton Rahman5, Christopher T. Ritchlin6, Francisco A. Tausk7, Sherry Rohekar8, Richard Hayday9, Snezana Barac10, Devy Zisman11, Joy Feld12 and Dafna D. Gladman1, 1Rheumatology, University of Toronto, Toronto Western Hospital, Toronto, ON, Canada, 2Dermatology, University of Toronto, Toronto Western Hospital, Toronto, ON, Canada, 3University of British Columbia, Vancouver, BC, Canada, 4University of Michigan Medical School, Ann Arbor, MI, 5Computer Sciences, Memorial University of Newfoundland, St. John's, NF, Canada, 6Allergy, Immunology and Rheumatology Division, University of Rochester Medical Center, Rochester, NY, 7University of Rochester Medical Center, Rochester, NY, 8Western University, London, ON, Canada, 9University of Manitoba, Winnipeg, MB, Canada, 10Winnipeg Clinic, Winnipeg, MB, Canada, 11Rheumatology Unit, Carmel Medical Center, Haifa, Israel, 12Carmel Medical Center, Haifa, Israel

Session Type: ACR Concurrent Abstract Session

Histone Deacetylase 5 Is Overexpressed in Scleroderma Endothelial Cells and Impairs Angiogenesis Via Repressing Pro-Angiogenic Factors

Pei-Suen Tsou1,2, M. Asif Amin3, Elena Schiopu2,4, David A. Fox3, Dinesh Khanna1,2 and Amr H. Sawalha1, 1Division of Rheumatology, University of Michigan, Ann Arbor, MI, 2University of Michigan Scleroderma Program, Ann Arbor, MI, 3Internal Medicine, Division of Rheumatology, University of Michigan Medical Center, Ann Arbor, MI, 4Internal Medicine, Division of Rheumatology, University of Michigan, Ann Arbor, MI

Session Type: ACR Concurrent Abstract Session

Safety and Tolerability of Pirfenidone in Patients with Systemic Sclerosis Interstitial Lung Disease

Dinesh Khanna1, Carlo Albera2, Aryeh Fischer3, James R. Seibold4, Nader A. Khalidi5, Ganesh Raghu6, Lorinda Chung7, Elena Schiopu8, Dan Chen8 and Eduard Gorina9, 1University of Michigan, Ann Arbor, MI, 2University of Turin, Turin, Italy, 3National Jewish Health and University of Colorado, Denver, CO, 4Scleroderma Research Consultants LLC, Litchfield, CT, 5McMaster University, Hamilton, ON, Canada, 6University of Washington, Seattle, WA, 7Division of Immunology and Rheumatology, Stanford University School of Medicine, Stanford, CA, 8Jazz Pharmaceuticals (formerly of InterMune), Palo Alto, CA, 9Formerly of InterMune, Brisbane, CA.

Session Type: ACR Concurrent Abstract Session
ABSTRACT NUMBER: 3139

Screening Algorithm for Pulmonary Hypertension in Systemic Sclerosis - Comparison of Predictive Accuracy of Three Algorithms

Vivek Nagaraja1, Scott H. Visovatti2, Heather Gladue3, Veronica J. Berrocal4, Jennifer Serrano5, Valerrie McLaughlin2 and Dinesh Khanna6, 1Department of Medicine [Division of Rheumatology], University of Toledo, Toledo, OH, 2Internal Medicine, Division of Cardiology, University of Michigan, Ann Arbor, MI, 3Rheumatology, Emory University, Atlanta, GA, 4Div of Rheumatology, University of Michigan, Ann Arbor, MI, 5University of Michigan, Ann Arbor, MI, 6Division of Rheumatology, University of Michigan, Ann Arbor, MI

Session Type: ACR Concurrent Abstract Session

ABSTRACT NUMBER: 3140

A Meta-Immunochip Analysis Suggests IL12B As a Common Susceptibility Factor for Large-Vessel Vasculitides

Francisco David Carmona1, Patrick Coit2, Güher Saruhan-Direskeneli3, Maria C. Cid4, Roser Solans5, Santos Castañeda6, Augusto Vaglio (on behalf of the Italian GCA Study Group)7, Haner Direskeneli (on behalf of the Turkish Takayas Study Group)8, Peter A. Merkel9, Carlo Salvareni10, Miguel A. Gonzalez-Gay11, Javier Martin12, Amr H. Sawalha12 and Spanish GCA consortium, 1Instituto de Parasitología y Biomedicina López-Neyra, IPBLN-CSIC, PTS-Granada, Granada, Spain, 2Division of Rheumatology, University of Michigan, Ann Arbor, MI, 3Department of Physiology, Istanbul University, Istanbul Faculty of Medicine, Istanbul, Turkey, 4Autoimmune and Systemic Diseases, Hospital Clinic. IDIBAPS. University of Barcelona, Barcelona, Spain, 5Department of Internal Medicine, Hospital Vall d’Hebron, Barcelona, Spain, 6Rheumatology, H.U. La Princesa, Madrid, Spain, 7Medicina Clinica e Nefrologia, Università di Parma, Parma, Italy, 8Department of Rheumatology, Marmara University, School of Medicine, Istanbul, Turkey, 9Penn Vasculitis Center, Division of Rheumatology, University of Pennsylvania, Philadelphia, PA, 10Azienda Ospedaliera ASMN, Istituto di Ricovero e Cura a Carattere Scientifico, Reggio Emilia, Italy, 11Reumatologia, Hospital Universitario Marqués de Valdecilla, IDIVAL, University of Cantabria, Santander, Spain, 12Immunology, Instituto de Parasitología y Biomedicina López-Neyra, IPBLN-CSIC, Armilla (Granada), Spain

Session Type: ACR Concurrent Abstract Session

ABSTRACT NUMBER: 3225

Whole Exome Sequencing Identifies Rare Protein-Coding Variants in Behcet’s Disease

Mikhail Ognenovski1, Paul Renauer1, Ina Koetter2, Joerg C. Hennes3, Bruno Casali4, Carlo Salvareni5, Haner Direskeneli6, Kenneth M. Kaufman7 and Amr H. Sawalha1, 1Division of Rheumatology, University of Michigan, Ann Arbor, MI, 2Department of Internal Medicine IV Rheumatology, Asklepios Klinik Altona, Hamburg, Germany, 3Department of Internal Medicine II, Rheumatology Division, University Hospital Tuebingen, Tuebingen, Germany, 4Divisione di Biologia Molecolare, Arcispedale Santa Maria Nuova, Reggio Emilia, Italy, 5Rheumatology, Arcispedale S.Maria Nuova, Reggio Emilia, Italy, 6Department of Rheumatology, Marmara University Faculty of Medicine, Istanbul, Turkey, 7Center for Autoimmune Genomics and Etiology, Cincinnati Children's Hospital Medical Center, Cincinnati, OH

Session Type: ACR Concurrent Abstract Session

ABSTRACT NUMBER: 3227

Identification of Novel Protein-Coding Genetic Variants Associated with Takayasu Arteritis

Paul Renauer1, Patrick Coit1, Peter A. Merkel2 and Amr H. Sawalha1, 1Division of Rheumatology, University of Michigan, Ann Arbor, MI, 2Penn Vasculitis Center, Division of Rheumatology, University of Pennsylvania, Philadelphia, PA

Session Type: ACR Concurrent Abstract Session

Wednesday, November 11
**Rheumatoid Arthritis - Clinical Aspects VII: Disease Activity and Updates in Measurement**

**Session Time:** 11:00AM-12:30PM

**ABSTRACT NUMBER: 3255**

**Brain White Matter Integrity: A Future Biomarker for Rheumatoid Arthritis Related Fatigue?**

Neil Basu¹, Marayam Alsyedalhashem², Mariella D'Allesandro³, Alison D. Murray², Daniel J. Clauw⁴ and Gordon D. Waiter², ¹Musculoskeletal Research Collaboration (Epidemiology Group), University of Aberdeen, Aberdeen, United Kingdom, ²Aberdeen Biomedical Imaging Centre, University of Aberdeen, Aberdeen, United Kingdom, ³Musculoskeletal Collaboration (Epidemiology Group), University of Aberdeen, Aberdeen, United Kingdom, ⁴Anesthesiology, University of Michigan, Ann Arbor, MI

**Session Type:** ACR Concurrent Abstract Session

**Systemic Sclerosis, Fibrosing Syndromes, and Raynaud's - Clinical Aspects and Therapeutics III**

**Session Time:** 11:00AM-12:30PM

**ABSTRACT NUMBER: 3263**

**The Promis-29 in Systemic Sclerosis: Associations with Clinical Characteristics in the Scleroderma Patient-Centered Intervention Network (SPIN) Cohort**

Linda Kwakkenbos¹,², Brett D. Thombs¹, Susan J. Bartlett³,⁴, Marie-Eve Carrier², Marie Hudson¹, Luc Mouthon⁵, Vanessa L. Malcarne⁶, Maureen Sauvé⁷, Dinesh Khanna⁸, and SPIN investigators, ¹McGill University, Montreal, QC, Canada, ²Lady Davis Institute for Medical Research, Jewish General Hospital, Montreal, QC, Canada, ³Medicine, Divisions of Clinical Epidemiology, Rheumatology, Respirology, McGill University, Montreal, QC, Canada, ⁴Division of Rheumatology, Johns Hopkins School of Medicine, Baltimore, MD, ⁵Paris Descartes University, UPRES-EA 4058, Department of Internal Medicine, Cochin Hospital, Paris, France, ⁶SDSU/UC San Diego Joint Doctoral Program in Clinical Psychology, San Diego, CA, ⁷Scleroderma Societies of Canada and Ontario, Hamilton, QC, Canada, ⁸Division of Rheumatology, University of Michigan, Ann Arbor, MI

**Session Type:** ACR Concurrent Abstract Session