### Virtual Rheumatology Practicum (ViP) Program

<table>
<thead>
<tr>
<th>Date</th>
<th>Time (CST)</th>
<th>Topic</th>
<th>Speaker</th>
<th>Pre-Reading Materials</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Monday</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Non-Inflammatory Arthritis Periarticular Etiologies and Referred Pain |
<p>|               | 10:30 AM   | Rheumatology Emergencies                                            | Dr. Lisa Criscione-Schreiber Duke University |                                                                                       |
| <strong>Thursday</strong>  |            |                                                                      |                                |                                                                                       |
| <strong>July 9</strong>    | 9:30 AM    | Enhancing Patient Care and Teaching During Inpatient Consultation    | Dr. Eli Miloslavsky Massachusetts General Hospital |                                                                                       |
|               | 10:30 AM   | Primer on Plain Radiography for Rheumatology Fellows                | Dr. Beth Jonas University of North Carolina |                                                                                       |
|               |            |                                                                      |                                |                                                                                       |</p>
<table>
<thead>
<tr>
<th>Date</th>
<th>Time (CST)</th>
<th>Topic</th>
<th>Learning Objectives</th>
<th>Speaker</th>
<th>Pre-Reading Materials</th>
</tr>
</thead>
</table>
| Monday     | 9:30 AM    | Laboratory Tests in the Rheumatic Diseases | *Interpret the significance of an elevated ESR and CRP*  
*Summarize the causes of a positive RF and anti-CCP*  
*Discuss the evaluation of a positive ANA*  
*List the diseases associated with hypocomplementemia*  
*Differentiate the types of ANCA* | Dr. Sterling West  
University of Colorado | Case and bibliography                        |
| 10:30 AM   |            | Approach to Aspiration and Injections      | *Describe the components, and interpret the results, of a standard synovial fluid analysis*  
*List the advantages and risks associated with various corticosteroid preparations for use with joint and soft tissue injections*  
*Discuss the proper sequence of events common to arthrocentesis and soft tissue injections, including issues related to informed consent, skin preparation, anesthesia, and hardware selection* | Dr. Ken O'Rourke  
Rheumatology Associates | Approach to Aspiration and Injections handout |
| Thursday   | 9:30 AM    | MSK Exam                                   | *Describe a systematic approach to the physical examination of the shoulder and knee*  
*Recognize patterns of exam findings associated with common reasons for shoulder and knee pain*  
*Consider how exam findings can be used to guide strategy for imaging* | Dr. Mike Battistone  
University of Utah |                                |
| 10:30 AM   |            | PMR/GCA                                    | *Update key clinical, pathologic and radiographic features of GCA*  
*Discuss current recommendations for monitoring in GCA*  
*Review clinical features of PMR and associations with GCA*  
*Review data for current GCA treatments, including biologics* | Dr. Rebecca Manno  
The Comprehensive Arthritis and Rheumatology Center of the Caribbean  
St. Thomas / St. Croix US Virgin Islands |                                |
| Monday     | 9:30 AM    | Lupus                                      | *Describe the epidemiology of lupus*  
*Understand the significance of a positive ANA*  
*Describe the clinical manifestations and workup of a patient with suspected lupus*  
*List comorbidities that should be considered and addressed in a patient with lupus* | Dr. Rosalind Ramsey-Goldman  
Northwestern University | Practice Lupus Cases for Further Discussion |
| 10:30 AM   |            | Lupus Nephritis                            | *Summarize key components in the pathophysiology of lupus nephritis*  
*Review clinical prognostic factors*  
*Understand variables in treatment selection and the medical evidence for standard of care and new treatment trial results* | Dr. Joan Merrill  
Oklahoma Medical Research Foundation |                                |
<table>
<thead>
<tr>
<th>Date</th>
<th>Time (CST)</th>
<th>Topic</th>
<th>Learning Objectives</th>
<th>Speaker</th>
<th>Pre-Reading Materials</th>
</tr>
</thead>
</table>
| Thursday        | 9:30 AM    | Macrophage Activation Syndrome/HLH | • Recognize the clinical and laboratory manifestations associated with developing macrophage activation syndrome.  
• Order appropriate tests to identify infectious and autoimmune disorders known to be associated with the development of macrophage activation syndrome.  
• Understand the how mutations in genes regulating the function of NK/Cytotoxic T cells and activation of the IL-1/IL-18 inflammasome predispose to macrophage activation syndrome.  
• Prescribe appropriate therapies reported to be effective in treating macrophage activation syndrome.” | Dr. Winn Chatham  
University of Alabama |                      |
| 10:30 AM        |            | Sjogrens                     | • Recall the most common clinical findings of Sjögren's syndrome  
• Recognize the extra-glandular manifestations of Sjögren's syndrome  
• Appreciate how easy it is to overlook the diagnosis of Sjögren's syndrome  
• Explain how to diagnose Sjögren's syndrome  
• Summarize a basic approach to Sjögren's syndrome management | Dr. Chadwick Johr  
University of Pennsylvania |                      |
| Monday          | 9:30 AM    | Vasculitis – ANCA            | • Recognize the clinical manifestations of GPA, MPA and EGPA  
• Direct an appropriate workup for a patient with suspected ANCA associated vasculitis (AAV)  
• List therapeutic regimens used for induction in severe and non-severe AAV  
• List therapeutic regimens used for maintenance in AAV | Dr. Anisha Dua  
Northwestern University |                      |
|                | 10:30 AM   | Myositis                     | • To understand various different subsets of myositis, their clinical phenotype and classification criteria  
• To understand importance of various tests like EMG/NCS, muscle enzyme, muscle/skin biopsy, myositis autoantibodies and imaging in diagnosis and management  
• To review the basic management myositis including management of extra-muscular manifestations especially interstitial lung disease | Dr. Rohit Aggarwal  
University of Pittsburgh |                      |
| Thursday        | 9:30 AM    | Vasculitis - Non-ANCA        | • Review the nomenclature and classification of systemic vasculitis (e.g. primary versus secondary, 2012 Chapel Hill Consensus Conference, immune complex mediated, etc)  
• Identify the different clinical characteristics and differential diagnosis for Takayasu’s arteritis, polyarthritis nodosa, IgA vasculitis, cryoglobulinemic vasculitis and Behçet’s disease  
• Review the diagnostic approach and testing for Takayasu’s arteritis, polyarthritis nodosa, IgA vasculitis, cryoglobulinemic vasculitis and Behçet’s disease  
• Discuss therapeutic approaches for the treatment of Takayasu’s arteritis, polyarthritis nodosa, IgA vasculitis, cryoglobulinemic vasculitis and Behçet’s disease | Dr. Jason Springer  
University of Kansas |                      |
| 10:30 AM        |            | Scleroderma                  | • Describe the 3 facets of SSc: Autoimmunity; Vasculopathy; and Fibrosis  
• Discuss differential diagnosis and review the ACR/EULAR classification criteria  
• Reiterate major systemic complications and approach to management | Dr. Rick Silver  
University of South Carolina |                      |
<table>
<thead>
<tr>
<th>Date</th>
<th>Time (CST)</th>
<th>Topic</th>
<th>Learning Objectives</th>
<th>Speaker</th>
<th>Pre-Reading Materials</th>
</tr>
</thead>
</table>
| Monday       | 9:30 AM    | RA – Pathophysiology                 | • Understand the pathophysiology of rheumatoid arthritis  
• Recognize the clinical manifestations of rheumatoid arthritis  
• Discuss 2010 rheumatoid arthritis classification criteria                  | Dr. Uzma Haque  
The emphasis of my talk will be on urate deposition and gout, because this is the most common inflammatory arthritis and frequently mismanaged. However, calcium deposition diseases are important to recognize as they can mimic several other arthritides and syndromes and need to be approached in a thoughtful and often creative manner. Geraldine McCarthy is a noted expert in this area and provides an informative, easy to read and well detailed review. This is a must read for fellows.  
An excellent overview, and well referenced, of the spectrum of challenges faced in the management of this extremely common inflammatory disease. A great way to start reading about this disease.  
A detailed, original and thought provoking guide to thinking about the pathophysiology and management of patients with gout. This is an intro to graduate level thinking about gout, it will leave you impressed with how much there is to know about this common disease, and wondering why we take things for granted in thinking it is so straightforward.  
An opinionated, but (we think) appropriately referenced, review and recommendations on the management of patients with gout. |
| 10:30 AM     | RA - Pharmacologic and Other Therapeutics | • Fellows will understand the importance of early diagnosis and treatment of all RA patients  
• Fellows will understand the importance of measuring disease activity and treating to a goal  
• Fellows will understand the basics of foundational therapy in RA  
• Fellows will be introduced to advanced therapy | Dr. James O’Dell  
University of Nebraska                                                   |                                                                        |
| Thursday     | 9:30 AM    | Crystalline Arthritis                | • Discuss why serum urate is not the gold standard for diagnosis of gouty arthritis  
• Design a comprehensive treatment plan to establish cure as the gout treatment target  
• Describe the benefits and risks of urate-lowering therapies, alone and in combination  
• Choose between several therapeutic options for treatment of acute gout flares, tailoring therapy to the specific patient | Dr. Brian Mandell  
Cleveland Clinic                                                          |                                                                        |
<table>
<thead>
<tr>
<th>Time</th>
<th>Topic</th>
<th>Learning Objectives</th>
<th>Speaker</th>
<th>Institution</th>
</tr>
</thead>
</table>
| 10:30 AM   | Spondyloarthritis               | **Learning Objectives:**  
• Recognize clinical manifestations of spondyloarthritis  
• Identify typical imaging findings in peripheral and axial spondyloarthritis  
• Describe initial treatment plan for patients with spondyloarthritis | Dr. Lianne Gensler                        | University of California, San Francisco |
| Monday     | 9:30 AM  | Medications – DMARDs             | **Learning Objectives:**  
• Identify the mechanism of action of commonly used csDMARDs  
• Outline an approach for prescribing and monitoring csDMARDs  
• Describe and develop strategies to mitigate toxicities associated with csDMARDs  
• Counsel patients on the use of csDMARDs during pregnancy and lactation | Dr. Amy Cannella                        | University of Nebraska                   |
|            | 10:30 AM | Lyme Disease                    | **Learning Objectives:**  
• Review the clinical manifestations, pathophysiology and treatment of Lyme arthritis including post treatment Lyme arthritis  
• List the strategies, pitfalls and recent advances in the use of laboratory testing for the diagnosis of Lyme disease  
• Analyze the controversies surrounding Lyme disease including the entity of chronic Lyme disease | Dr. Robert Kalish                       | Tufts University                         |
| Thursday   | 9:30 AM | Osteoporosis                    | **Learning Objectives:**  
• Discuss therapy options for treatment of osteoporosis  
• Distinguish optimal therapy duration for treatment with osteoporosis medications  
• Recognize potential risks and adverse effects of medications used in the treatment of osteoporosis  
• Consider the options for resumption of therapy after a drug holiday | Dr. Marcy Bolster                       | Massachusetts General Hospital           |
|            | 10:30 AM | Osteoarthritis                  | **Learning Objectives:**  
• Recall the epidemiology and pathophysiology of osteoarthritis  
• Identify the clinical and imaging features of osteoarthritis  
• Develop an approach to the diagnosis and management of a patient with osteoarthritis | Dr. Marc Hochberg                       | University of Maryland                   |

**References:**

Narrative review article based on literature search from January 2014 through January 2019.

Evidence-based guideline for the comprehensive management of OA.

<table>
<thead>
<tr>
<th>Date</th>
<th>Time (CST)</th>
<th>Topic</th>
<th>Learning Objectives</th>
<th>Speaker</th>
<th>Pre-Reading Materials</th>
</tr>
</thead>
</table>
| Monday          | 9:30 AM    | Infectious Arthritis          | **Learning Objectives:**  
• Recognize rheumatic manifestations of key viral infections including epidemiology,  
  pathophysiology, pertinent clinical and laboratory findings and principles of treatment  
  in the setting of infection caused by: Alphaviruses; Hepatitis B and C; Human  
  immunodeficiency virus; and Parvovirus B19  | Dr. Cassie Calabrese  
Cleveland Clinic |                       |
| 10:30 AM        |            | Medications - Non-DMARDs      | **Learning Objectives:**  
• Understand and be able to contrast the mechanisms of biologic and targeted synthetic  
  DMARDs with those of conventional DMARDs  
• Become familiar with the types of toxicities seen with biologics and targeted synthetic  
  DMARDs  
• Understand the data and the principles behind choice of biologic and targeted synthetic  
  DMARDs in rheumatic diseases  | Dr. Eric Ruderman  
Northwestern University |                       |
| Thursday        | 9:30 AM    | Innate Immunity               | **Learning Objectives:**  
• Describe the pattern recognition systems through which human organisms recognize  
  foreign organisms and molecules, along with internal threats that they have never  
  previously encountered  
• Describe the mechanisms of inflammation and the cells that respond to inflammatory  
  circumstances, including the innate mechanisms by which human organisms attack  
  and kill foreign invaders  
• Exploit an understanding of inflammation and innate immunity to treat patients  
  suffering from inflammatory syndromes using anti-inflammatory strategies  | Dr. Michael Pillinger  
New York University |                       |
| 10:30 AM        |            | Acquired Immunity             | **Learning Objectives:**  
• Describe the molecular basis for Macfarlane Burnet's "clonal selection theory" and  
  how this explains immunologic memory  
• Discuss HLA association of disease and why diseases with seropositive inflammatory  
  arthritis are associated with MHC II while those with seronegative inflammatory  
  arthritis are associated with MHC I  
• Discuss problems with central tolerance including why patients with rheumatoid  
  arthritis and the HLA-DR alleles containing the “shared epitope” develop antibodies  
  against citrullinated peptides  
• Describe why autoantibodies against antigens associated with DNA or RNA are so  
  common in rheumatic diseases  
• Describe the major CD4 effector populations and why TH2 cells might be protective  
  in erosive arthritis  
• Discuss the multiple effectors of humoral immunity and which immunoglobulin  
  isotypes are most likely to be associated with neonatal lupus  
• Discuss lymphocyte differentiation and how tissue resident and/or bystander T cells  
  might play a role in tissue inflammation  
• Discuss the challenge of long-lived plasma cells  | Dr. John Looney  
University of Rochester | Learning goals |
<table>
<thead>
<tr>
<th>Date</th>
<th>Time (CST)</th>
<th>Topic</th>
<th>Speaker</th>
<th>Pre-Reading Materials</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monday</td>
<td>9:30 AM</td>
<td>Anti-phospholipid Syndrome</td>
<td>Dr. Medha Barbhaiya</td>
<td>Hospital for Special Surgery</td>
</tr>
<tr>
<td>August 24</td>
<td></td>
<td><em>Learning Objectives:</em></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• To review the spectrum of clinical manifestations associated with antiphospholipid antibodies</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• To discuss the multi-factorial nature of thrombosis associated with antiphospholipid antibodies, with acquired and inherited risk factors</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• To discuss diagnosis and management of antiphospholipid syndrome</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10:30 AM</td>
<td>Pregnancy &amp; Rheumatic Diseases</td>
<td>Dr. Bonnie Bermas</td>
<td>University of Texas Southwestern</td>
<td></td>
</tr>
<tr>
<td></td>
<td><em>Learning Objectives:</em></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Understand how pregnancy can impact rheumatic diseases</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Understand risks of pregnancy in women with rheumatic diseases</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Understand safety of medications during pregnancy and lactation</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Thursday</td>
<td>9:30 AM</td>
<td>MSK Ultrasound</td>
<td>Dr. Eugene Kissin</td>
<td>Boston University</td>
</tr>
<tr>
<td>August 27</td>
<td></td>
<td><em>Learning Objectives:</em></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Describe how principles of physics relate to basic ultrasound machine settings and ultrasound artifacts</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Differentiate ultrasound findings of gout from those in healthy and CPPD affected joints</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Apply ultrasound imaging to the diagnosis of polymyalgia rheumatica</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10:30 AM</td>
<td>Fibromyalgia &amp; Chronic MSK Pain</td>
<td>Dr. Leslie Crofford</td>
<td>Vanderbilt University</td>
<td></td>
</tr>
<tr>
<td></td>
<td><em>Learning Objectives:</em></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Review basic mechanisms of pain processing</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Know the differences between acute and chronic pain</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Learn how to understand and manage fibromyalgia</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Topics and Speakers Subject to Change**