

Department of Medicine  
750 East Adams Street  
Syracuse, NY 13210  
www.upstate.edu



## **RHEUMATOLOGY FELLOWSHIP CURRICULUM**

**State University of New York Upstate Medical University**

**750 East Adams Street**

**Syracuse, New York 13210**

Revised: June 2016

### **FACULTY**

Andras Perl, M.D., Ph.D., Chief of Rheumatology, Professor of Medicine

Paul E. Phillips, M.D., F.A.C.P., F.A.C.R., Professor Emeritus, Division Chief 1981-2001

Lorne Runge, M.D., Professor Emeritus

Fatme Allam, M.D., Associate Professor of Medicine

Hom Neupane M.D., Associate Professor of Medicine

Hiroshi Kato, M.D., Assistant Professor of Medicine

Julie Yu, M.D., Assistant Professor of Medicine

Eduardo Bonilla, M.D., Clinical Assistant Professor

William Hannan, M.D., Associate Professor of Pediatrics

## MISSION

The mission of the SUNY HSC Syracuse Rheumatology Fellowship Training Program is to train physicians to:

- 1) Be clinically competent in Rheumatology and related fields of interests.
- 2) Be capable of working in a variety of ways, including as an expert consultant, clinician, teacher, and, with additional training, as a clinical or a basic science investigator.
- 3) Develop and maintain habits of lifelong learning to further enhance their knowledge, skills and professionalism.

## SPECIFIC GOALS

**CLINICAL COMPETENCY** is essential for all physicians. By graduation the training rheumatologist must be competent in the following 6 Core Competencies:

### Patient Care

PC1 : Gather and synthesize essential and accurate information to define each patient's clinical problems.

- Be able to take a complete history, perform a physical examination (particularly of the joints and musculoskeletal structures) and use laboratory and imaging studies
- Demonstrate expertise in the performance and interpretation of the musculoskeletal examination

PC2: Develop and achieve a comprehensive management plans for each patient.

- Possess the ability and to analyze critically the clinical and laboratory data, integrate this with their basic foundation of medical knowledge, and formulate appropriate differential diagnoses and therapeutic plans.
- Prescribe and manage immunomodulatory therapy
- Provide patient care that is compassionate, appropriate, and effective for the treatment of health problems and the promotion of health.

PC3: Manage patients with progressive responsibility and independence

- Manage the care of patients with acute and chronic, common and complex rheumatologic diseases across multiple care settings

PC4a/b: Demonstrate skills in performing and interpreting invasive & non-invasive procedures

- Perform procedures including arthrocentesis and injections, compensated polarized microscopy, and interpretation of synovial fluid analysis

PC5: Requests and provides consultative care

- Provide consultation services for patients with very complex clinical problems requiring extensive risk assessment.
- Models management of discordant recommendations from multiple consultants
- Ability to perform as a rheumatology consultant or health care team leader for patients with primary rheumatologic diagnoses.

## **Medical Knowledge**

MK1: Possess Clinical Knowledge

- Possess a basic core of knowledge of the clinical features and presentations, pathophysiology, laboratory and imaging manifestations and comprehensive management of rheumatologic and musculoskeletal diseases. This includes arthritis in all its forms, both acute and chronic, as well as metabolic diseases of bone, osteoporosis and musculoskeletal pain syndrome and systemic diseases with rheumatic manifestations, particularly including the connective tissue diseases.
- Possess a knowledge base that includes an appropriate content of anatomy, genetics, biochemistry, immunology, genetic basis, cell biology, physiology, pharmacology, epidemiology, statistics, ethics, and human/social behavior as needed for the Clinical practice of Rheumatology and evidence-based decision making
- Possess a core knowledge of treatment for both common and uncommon diseases found in Rheumatology. This includes understanding the principles, indications and contraindications, risks, complications (including adverse events interactions), techniques and interpretation of results of diagnostics, screening test/procedures, pharmacokinetics, metabolism, cost and utility of the various treatments. It also includes recognition of the need for appropriate consultation, and of reasonable expectations from such a consultant.

MK2: Knowledge of diagnostic testing and procedures

- Demonstrate expertise in the performance and/or interpretation of diagnostic, imaging studies and therapeutic procedures common to the practice of Rheumatology, particularly arthrocentesis and relevant to the evaluation of patients with suspected or established rheumatic and musculoskeletal disease. This includes understanding the principles, indications and contraindications, risks, cost, and utility of the procedures.

MK3: Scholarship

- Possess a level of skill and expertise in clinical and/or basic research defined as competence in understanding the quality of experimental and clinical trial design, implementation, data analysis and interpretation of research studies. This includes research methodology, critical interpretation of data and of published research, and responsible use of informed consent.

## **Systems Based Practice**

SBP 1: Works effectively within an interprofessional team

SBP 2: Recognize system error and advocates for system improvement

- Demonstrate competence in the practice of health promotion, disease prevention, diagnosis, care, and treatment of patients of each gender, from adolescence to old age, during health and all stages

of illness including their cost effectiveness

- Demonstrate an awareness of the larger content and system on health care delivery and the ability to effectively call on system resources to provide safe and quality care.

SBP 3: Identifies the forces that impact the cost of health care, and advocates for and practices cost-effective care

- Show increasing appreciation and understanding of cost effectiveness in patient care and resource utilization.
- Demonstrate an understanding of managed care, federal versus private insurers and the social consequences of the uninsured.

SBP 4: Transitions patients effectively within and across health delivery systems

### **Practice – Based Learning and Improvement Objectives**

PBLI 1: Monitors practice with a goal for improvement

- Systematically analyzes their practice using quality improvement methods, and implement changes with the goals for improvement
- Initiate their own self review in the quality of the work that they do, including evaluating patient care experiences as well as the progressive acquisition of specialty knowledge.

PBLI 2: Learns and Improves via performance audit

- Understand the limits of their knowledge and experience and asks for help when needed. Self improvement comes from: regular assessments of all competencies; setting learning and improvement goals; identifying and performing appropriate learning activities; and receiving balanced and honest feedback from the fellowship program.

PBLI 3: Learns and improves via feedback

- Continues to improve in their ability to receive feedback in identifying strengths and deficiencies. They use this knowledge to translate into better patient care

PBLI 4: Learns and improves at the point of care

- Demonstrate competence in information technology and the ability to find answers to clinical questions that are asked. As fellow progresses through their training, there should be increasing evidence that the scientific literature is being used to guide clinical decision-making.
- Participate in the education of patients, families, students, fellows and other health professionals.

### **Interpersonal Communication Skills**

ICS 1: Communicates effectively with patients and caregivers

- Development of excellent oral, written, and electronic communication skills with patients, peers and paramedical personnel across a broad range of socioeconomic and cultural backgrounds.
- Obtain procedure specific informed consent by competently educating patients about rationale, technique and complications of procedures.

ICS 2: Communicates effectively in interprofessional teams

- Consistently and actively engages in collaborative communications with all team members and leaders

ICS 3: Appropriate utilization and completion of health records

- Maintains comprehensive, timely and legible medical records and communicates clinical reasoning

### **Professionalism**

Prof 1: Has professional and respectful interactions with patients, caregivers, and members of interprofessional team

- Develop qualities of professionalism and humanistic skills, including integrity, compassion and respect for patients, peers and paramedical personnel.

Prof 2: Accepts responsibility and follows thru on tasks

- Are responsive to patient needs that supersedes self-interest, respect patient privacy and autonomy, accountable to patients, society and the profession.

Prof 3: Responds to each patient's unique characteristics and needs

- Sensitive and responsive to diverse patient populations, including but not limited to diversity in gender, age, culture, race, religion, disabilities and sexual orientation

Prof 4: Exhibits integrity and ethical behavior in professional conduct

Fellows will develop the **ability to work in a VARIETY OF SETTINGS:**

- As a primary health care provider for acutely ill in-patients, including in the Emergency Department and Intensive Care Unit, and ambulatory out-patients.
- As a rheumatology consultant to other internists and other physicians in these settings.
- As the leader of a multi-disciplinary health care team, including other medical and surgical specialists, rehabilitation therapists, home health care providers, etc.
- As a teacher of their clinical skills, professionalism and humanistic skills to trainees at more junior levels, so as to serve as a model for trainees.

**LIFE-LONG LEARNING** : The program enables the trainee with the skill set to acquire, critically analyze, synthesize and reassess their knowledge, skills and professionalism. This is achieved through the development of independent study habits for acquiring clinical and research knowledge and skills; and attendance, presentation and participation in the organization of local, regional and national educational and scientific conferences.

## **TEACHING METHODS**

The following experiences have been established to achieve the education goals for trainees at the SUNY Upstate Medical University Rheumatology Fellowship Program:

The inpatient and outpatient experience is the main training ground of the fellowship program. All trainees acquire experience in treating a wide range of rheumatologic problems because our 3 hospitals (UH, VA, and Crouse) have different types of patients, which together encompass the whole range of rheumatologic diseases.

Overall, each fellow receives approximately 80 hours per month of faculty supervision and teaching in the outpatient setting, and approximately 30 hours per month for inpatients. The combination of both patient settings provides an environment and resources for the fellow to gain in-depth experience in the diagnosis and treatment of patients with a mix of diseases such as: systemic connective tissue diseases( including rheumatoid arthritis, systemic lupus erythematosus, scleroderma, polymyositis); various vasculitis syndromes with/without spondyloarthropathies; crystal-induced synovitis, osteoarthritis; non-articular rheumatic diseases (including fibromyalgia, nonsurgical exercise-related (sports) injuries); other systemic diseases with rheumatic manifestations; metabolic bone disease (including osteoporosis, infection of joints, joint surgery, and rheumatologic problems requiring rehabilitation therapy).

In-depth experience is provided in the specific examination of all joints structures and functions, both axial and peripheral, as well as periarticular structures and muscles. Fellows become very skillful in constructing differential diagnoses for complex symptoms and signs related to rheumatologic diseases, also in the diagnostic aspiration and analysis by light and polarized light microscopy of synovial fluid, and in the therapeutic injection of diarthrodial joints, bursa, tenosynovial structures and entheses. The fellows also acquire in-depth experience and skill in the use of non-steroidal anti-inflammatory and disease-modifying drugs, also biologic response modifiers, glucocorticoids, cytotoxic and hypouricemic drugs, and antibiotic therapy for septic joints.

### **The inpatient rheumatology experience:**

The fellow assigned to Consult Service will be responsible for organizing its activities. This primarily includes the supervised evaluation of inpatient consults and patients admitted to Rheumatology attending as well as the continued follow-up of these patients for as long as indicated during their hospitalization. Fellows will perform inpatient consultation on the Internal Medicine service, other specialty services, special care units and the Emergency Room. The consult service provides coverage for **THREE** hospitals including; SUNY Upstate Medical University, Crouse Irving Memorial Hospital, and the Veterans Administration Hospital.

Each fellow will be responsible for the Consult Service for a total of 26 weeks during their two years of fellowship training, and will personally see approximately 300 patients. On average, the fellow will have direct patient care responsibility for 2 cases and serve as a consultant on 8 at any given time. The fellow responsible for running the Consult Service will distribute patients to any rotating Medicine residents and medical students.

Regarding patient assignment, inpatients admitted for primary rheumatologic diseases are assigned to Rheumatology attendings. In patients with secondary rheumatology problems are assigned to other attendings and their services, and so will be seen primarily by Medicine residents on that service, with Rheumatology consulting. Most patients will follow-up as outpatients after discharge in the Rheumatology ambulatory care facility providing further continuity in learning.

Under the supervision of the Consult Attending, the fellow will develop and refine their clinical evaluation skills of patients with rheumatic diseases, including appropriate differential diagnosis, diagnostic evaluation, treatment, and the need for continued hospitalization. Their exposure on the inpatient service will hone their understanding of indications and contraindications, techniques and possible complications of arthrocentesis and interpretation of results. Fellows will acquire skills in performing synovial fluid crystal analysis by polarized light microscopy as well as other non-invasive and invasive procedures.

The fellows will develop and refine their skills in providing credible consultation services, including communicating with referring physicians and house staff, and organizing appropriate follow-up for continuing outpatient care. They will also educate patients and obtain informed consent for procedures. They are highly encouraged to perform literature searches when needed for evaluation or management, and participate actively in teaching more junior trainees on the consultation team. The fellow will have close faculty supervision for all activities with a strong emphasis on developing logical analysis and independent decision-making skills.

All patients are seen and discussed with an attending. The fellow's writes the report into EPIC and it is read-over and signed by the attending. Technical procedures are initially demonstrated by an attending, and subsequently supervised by them. Work Rounds are generally conducted by the fellows, medical residents, and medical students separately from attendings. Teaching Rounds are conducted with the attending present throughout. Teaching sessions are very frequent ensuring a meaningful and continuous teaching relationship between the attending and the fellow. As the fellow's clinical judgment improves, they require less teaching or correction regarding management decisions, and so become more independent.

Formal Rounds are on Monday Wednesday and Friday. Rounds start at 9 am, so the fellows are expected to pre-round before that. Rounding on Tuesday and Thursday is attending dependent based on attending preferences and patient needs. The fellow should contact the attending 8:30 – 8:45 to discuss where to start rounds.

The fellows on in-patient also cover the answering service for UHCC after hours, the service will page the fellow when patients call. They are also expected to take over the baskets for attending and fellows that are on vacation.

The On-Call Schedule is generally divided on a weekly basis between the four fellows. Call hours are adjusted accordingly in order to comply with ACGME Duty Hour Requirements. The Fellow will always have one 24-hour period "off-call" per every 7 days.

Fellows cover Monday through Sunday. For fellows whom are **NOT** on call on Saturdays and Sundays, they are entirely free from hospital duties. Call is taken from home via beepers and telephone.

**While on In-patient consult service, fellows are excused from all their clinic duties except for their continuity clinic.**

# SAMPLE CALL SCHEDULE

22 11:38 2016

## Call Schedule, 7/1 to 7/31, 2016

	Sun	Mon	Tue	Wed	Thu	Fri	Sat
						<b>1 July 2016</b>	<b>2</b>
					<i>Consult</i>	Kato	Kato
					<i>Day Consult</i>	Rayancha	Rayancha
					<i>Night Consult</i>	Rayancha	Rayancha
					<i>Weekend Consult</i>		
	<b>3 July 2016</b>	<b>4 July 4th</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>
<i>Consult</i>	Kato	Kato	Kato	Kato	Kato	Kato	Kato
<i>Day Consult</i>	—	Rayancha	Rayancha	Rayancha	Rayancha	Rayancha	Rayancha
<i>Night Consult</i>	—	Rayancha	Rayancha	Rayancha	Rayancha	Rayancha	Rayancha
<i>Weekend Consult</i>	—	—	—	—	—	—	—
	<b>10</b>	<b>11</b>	<b>12</b>	<b>13</b>	<b>14</b>	<b>15</b>	<b>16</b>
<i>Consult</i>	Kato	Perl	Perl	Perl	Perl	Perl	Perl
<i>Day Consult</i>	—Rayancha	Shahnawaz	Shahnawaz	Shahnawaz	Shahnawaz	Shahnawaz	Shahnawaz
<i>Night Consult</i>	—Rayancha	Shahnawaz	Shahnawaz	Shahnawaz	Shahnawaz	Shahnawaz	Shahnawaz
<i>Weekend Consult</i>	—	—	—	—	—	—	—
	<b>17</b>	<b>18</b>	<b>19</b>	<b>20</b>	<b>21</b>	<b>22</b>	<b>23</b>
<i>Consult</i>	Perl	Perl	Perl	Perl	Perl	Perl	Perl
<i>Day Consult</i>	—Shahnawaz	Jaffari	Jaffari	Jaffari	Jaffari	Jaffari	Jaffari
<i>Night Consult</i>	—Shahnawaz	Jaffari	Jaffari	Jaffari	Jaffari	Jaffari	Jaffari
<i>Weekend Consult</i>	—	—	—	—	—	—	—
	<b>24</b>	<b>25</b>	<b>26</b>	<b>27</b>	<b>28</b>	<b>29</b>	<b>30</b>
<i>Consult</i>	Perl	Bonilla	Bonilla	Bonilla	Bonilla	Bonilla	Bonilla
<i>Day Consult</i>	—Jaffari	Pasinicuc	Pasinicuc	Pasinicuc	Pasinicuc	Pasinicuc	Pasinicuc
<i>Night Consult</i>	—Jaffari	Pasinicuc	Pasinicuc	Pasinicuc	Pasinicuc	Pasinicuc	Pasinicuc
<i>Weekend Consult</i>	—	—	—	—	—	—	—
	<b>31</b>						
<i>Consult</i>	Bonilla						
<i>Day Consult</i>	—Pasinicuc						
<i>Night Consult</i>	—Pasinicuc						
<i>Weekend Consult</i>	—						

### The outpatient rheumatology experience:

Fellows will attend approximately 450 half-day outpatient sessions during their two-year fellowship training. On average, the fellow will see 1.5 new and 5 follow-up patients per session, a total of more than 600 new and 2,000 follow-up patients during their two-year fellowship. Continuity of follow-up with the same fellow is emphasized. Fellows have their own continuum of care half-day clinics per week that is precepted by an attending and participate in 3 other half-day clinics per week that can vary in location from our **FIVE** outpatient clinic settings: Adult - University Health Care Center (UHCC), Adult - Veterans Administration arthritis clinic (VA), Adult - The Hill Medical Center, Pediatric Rheumatology Outpatient Center – Physicians Office Building, Upstate Rheumatology (Homer).

Fellows perform outpatient consultations with the attending present and work with the attending to develop an independent clinical assessment and care plan for each patient. As the fellow develops their skills they are progressively given increased responsibility with appropriate supervision by the faculty. The end-goal is to have the fellow ready for unsupervised practice by becoming expert in the evaluation and management of outpatient rheumatic disease problems while understanding of patient's natural history over several years. Additional experience with arthrocentesis, as well as steroid injections for bursitis and tendinitis, occurs in the outpatient setting.



## Pediatric Rheumatology

The pediatric rheumatology experience is integral in the fellow's learning. Each fellow attends approximately 50 half-day pediatric outpatient sessions during the course of their 2 years training. Pediatric inpatient consults are also seen when the fellow is on consult service. This experience enables each fellow to become expert in the diagnosis and management of pediatric rheumatic diseases.

## SAMPLE OUTPATIENT SCHEDULE

Rheumatology Clinic Schedule										
Fellow	Mon AM	Mon PM	Tue AM	TuePM	Wed AM	Wed PM	Thurs AM	Thurs PM	Fri AM	Fri PM
Senior Fellow		UHCC (Perl)	VA Clinic (Phillips/Neupane)			UHCC (Neupane) Continuity Clinic			Infusion Elective (Dr. Allam) VA	
Junior Fellow 1		UHCC (PERL) Continuity Clinic	VA clinic (Allam)	VA QI Elective Dr. Mitchell/QI officer						VA Clinic (Allam) /Peds Clinic (alternate 6 months)
Junior Fellow 2		UHCC (Perl)		VA Telemedicine Elective Allam		UHCC (YU) Continuity Clinic				VA Clinic (Allam) /Peds Clinic (alternate 6 months)
Junior Fellow 3		UHCC (PERL)		VA Clinic (Phillips/Neupane) Gout Elective					Telemedicine Elective (Dr. Allam)	VA (Allam) Continuity Clinic

## Note Writing/Monthly Case Study

Note writing is essential in the comprehension and the development of critical thinking skills for the fellows. Their notes will be monitored closely by the attending and encouraged to use note writer in practice and or develop their own style of which does not include copy and pasting. All fellows will be required to sign an attestation stating that they have read and understood the institution's policy on copy and pasting EMR notes.

Each fellow will perform a **MONTHLY** clinical case study. The fellows can choose the topic and patient for the study and the attending that they will present to. The presentation will occur either at the Friday Didactic sessions or independently with the attending and the fellow can use write it in EPIC. The clinical case study will include differential diagnosis, diagnostics, and clinical research. The fellows will be required to track their cases and/or report them to the fellowship coordinator.

## Interdisciplinary interactions:

### Electives

The fellowship program includes a required elective experience with other disciplines. The goal of the elective experiences is for the fellow to learn, under the direction of experienced faculty from the related discipline, approaches to diagnoses and management used for patients with rheumatic diseases. It is preferred that the elective requirements are frontloaded in the first year as to give more time for research during the second year.

RHEUMATOLOGY FELLOW ELECTIVE GRID

TOPIC	FACULTY, PHONE & SITE	LEARNING OBJECTIVES OR KEY COMPETENCES
EMG/NCS	<b>Dr. Deborah Bradshaw, Neurology 464-4243/464-2480</b> Best Contact is via email or call EMG department with dates approx. 2 weeks notice UH(Ground Floor) If you page Dr. Bradshaw try to do it during lunchtime	Know how to order and interpret reports for entrapment neuropathy, radialopathy and myopathy
Physical Medicine and Rehabilitation	<b>Dr. Margaret Turk , 464-5820</b> <b>Dr. Hamam, Dr. Ko, Dr. Ward</b> Best contact via email and cc Mary baker (prog coord) send dates at least 2-3 months before. Tell them what the fellows wants to learning during the rotation, inpt consults, acute rehab, prosthesis, VA inpatient, rehab clinic in UH or fly road	How to prescribe physical therapy
Radiology	<b>Dr. Hal Cohen, 464-7439 Fly Road AM Clinics</b> Fly Road and 500 Harrison. Contact the Dept of Radiology	Learn about reading basic musculoskeletal radiology films
PT/OT	<b>Lynn Wiegand, PT and/or Tim Stayer, PT/Karen Kemmiss, PT</b> 464-6312 Contact via email with possible dates, can be Fly rd, IHP or UH	What and how therapy is done
Orthopedics – Upper extremity	<b>Dr. Jon Loftus 472-2015, Fly Road</b> Call number and ask for his schedule, then just go and tell him you are a rheum fellow and want to start a rotation	Non traumatic disease (rotator cuff, epicondylitis, ganglions, trigger finger, Dupuytren's)
Orthopedics – Lower extremity	<b>Dr. Timothy Damron, 464-8604, Fly Road</b> call and ask for his schedule from his assistant. You can also email him and he will reply back with his schedule	Internal derangement of the knee, observe arthroscopy, post-replacement follow-up
Orthopedics – Sports Medicine	<b>Dr. Cannizzaro, Dr. Scuderi 464-4472 6620 Fly Road</b> Best by contacting the administrator for either Dr's	Strains, sprains, knee injury
Orthopedics – Foot/Podiatry	<b>Dr. Alan Zonno, , 464-4472 6620 Fly Road</b> Best Contact via email Sarah Bianco	Ankle tendonitis, metatarsalgia, heel pain; learn how to prescribe orthotics, splints
Metabolic Bone Disease	<b>Dr. Jennifer Kelly, 464-8668, Best way to reach via email at Joslin Diabetes Center</b> <b>Dr. Arnold Moses, 464-9001, Institute for Human Performance</b> (sometimes is available)	Osteoporosis, Paget
Immunopathology	<b>Immunopathology Lab ,464-4463, 4<sup>th</sup> floor UH</b> Best Contact via email Slyva Bem and Theresa Haven, supervisor, with the dates about 1-2 weeks prior. She will let you know the schedule and with whom you will be working with	Learn how ANA, ANCA, C3, C4, anti ENA are done. Pitfalls of techniques. Interpretation of immunofluorescence studies or biopsies. RF and ESR done in core lab

Pain Medicine	Dr. Sebastian Thomas, 464-4259, Fly Road Dr. Brian McGinn Best to email Jo Yancey with the dates and she will email you back with confirmation	Principles of prescribing narcotic analgesics, epidural/nerve blocks
Infusions Center	Dr. Hom Neupane, Hill Medical Center Dr. Jianghong Yu, Upstate Rheumatology- Homer Dr. Fatme Allam VA (Part of VA elective schedule)	Learn about infusion techniques.
Research – Basic and Clinical	Dr. Andras Perl, 464-4194	Required in the 2 <sup>nd</sup> year
Neuromuscular disease clinic	Dr. Deborah Bradshaw (best way to contact: e-mail) Asst. as of 1/1/14: Amanda Coss, 464-5302, UH This clinic only happens on Mon and Fridays, but pts with real diagnoses are there on Friday's all day	Learn about hereditary and metabolic muscle disease
Ultrasound	Assistant Melissa Neary 464-7439, 550 Harrison Dr. Jianghong Yu, Upstate Rheumatology - Homer Contact about 2 months before your start	
Dermatology	Dr. Ramsey Farah/Dr. Joyce Farah Contact assistant Karen Falise 4-3843 Clinics Mon/Thurs AM	
Telemedicine	Dr. Fatme Allam VA – Part of VA elective schedule	
Quality Improvement	Dr. Fatme Allam, Dr. Joni Mitchell and The QI chief Resident – Part of the VA elective schedule	Work on QI projects including Osteoporosis prevention with long-term steroid treatment, antibiotic prophylaxis in immunosuppressed patients and other projects
Renal Pathology	Dr. Paul Shanley Contact Admin Karen Kelly 4-7117 to schedule a time	*Tentative Waiting for Approval
* Some of the electives can be combined (i.e.: PT & PMR, Ortho-foot & Podiatry, EMG and Neuromuscular clinic)		
* Fellow must notify the “elective” attending of the date which he/she plans to start the rotation		

## Conferences

The regularly scheduled conferences are complemented by the clinical teaching program, and provide the fellow with an appropriate understanding in the following content areas:

- Anatomy, genetics, immunology, biochemistry and physiology of connective tissue, bone, muscle and joints, including purine metabolism;
- pathologic aspects of rheumatic disease and metabolic bone disease including osteoporosis;
- Non-articular manifestations of rheumatic disease;
- Emotional factors that influence or result from rheumatic disease;
- The scientific basis, methodology, indications and interpretation of laboratory tests and imaging procedures used in diagnosis and follow-up of patients with rheumatic disease;
- Indications for an interpretation of electromyogram, nerve conduction studies and nerve/muscle biopsy;
- Pharmacology, pharmacokinetics, drug metabolism, side effects and interactions, and costs of agents used in treatment of rheumatic disease;
- Principles of rehabilitation, including physical and occupational therapy, for patients with rheumatic disease and exercise-related (sports) illnesses;
- Indications for surgical and orthopedic consultation in acute and chronic rheumatic disease; basic principles of decision analysis regarding diagnostic tests to define illness and recommended treatments;
- Principles of clinical epidemiology and health services research, including biostatistics, medical information systems, information science, critical literature review, administration of controlled clinical trials, and experimental protocol research design;
- Rheumatic problems in the geriatric population;
- Ethical and socio-economic issues relating to the practice of rheumatology.

Fellows learn about the above topics by their attendance and participation in didactics, Lab conferences/Journal club, Rheumatology Grand Rounds, Department of Medicine Grand Rounds, Noon Conference, and Other Departmental conferences. They also participate in clinical research projects, attend graduate Immunology course as auditors, read rheumatological textbooks, and test their medical decision-making and comparing that to their attending in the clinical setting.

### **Rheumatology Grand Rounds**

Conferences are held on a regularly scheduled basis, and are attended by fellows as well as faculty, other trainees, residents, practicing rheumatologists and other interested individuals. The weekly Rheumatology Grand Rounds includes a once monthly session with a specialized musculoskeletal radiology attending, and a once a month session with an anatomic pathology and clinical immunology attending. The fellows are assigned to work with faculty members in arranging cases for these presentations. The balance of the sessions are devoted to clinical patient based, bedside teaching, discussion of pathophysiology and research topics in diagnostic and therapeutic decisions. Presentations are prepared by the fellows, rheumatology faculty members, and by speakers from other related disciplines located in different departments and institutions. We have visiting rheumatologists from outside the institution present for the rheumatology grand round conference twice a year. As a part of their learning experience, fellows are expected to present 3 times/year (every two months) at the rheumatology grand rounds.

### **Department of Medicine Grand Rounds and Noon Conference**

Fellows are also expected to attend the weekly Department of Medicine Grand Rounds, where clinical and

research topics in internal medicine are presented. Fellows are encouraged to attend the weekly Noon Medicine Resident Conference that lectures on a wide variety of internal medicine topics.

### **Department of Rheumatology Scientific Lab Conference/Journal Club**

Fellows are required to attend and present at the weekly Scientific Lab Conference Sessions/Journal Clubs, where the focus is on current rheumatic disease research both internally and externally.

### **Didactic Sessions**

Fellows are **REQUIRED** to attend and present at weekly didactic conferences focusing on the scientific basis of Rheumatic Diseases. The schedule of sessions will follow along the topics listed for the In-Training exam. For each Rheumatologic disease there will be a presentation and discussion on its pathophysiology, manifestations, treatments, and updates. The attending on call will assign the topic on Monday for the Friday presentation. The consult attending can also change the topic according to their discretion based on their cases on consult and outpatient services.

### **Other Conferences**

Fellows are also encouraged to attend the many other didactic teaching exercises available at SUNY UMU, such as the weekly Orthopedic Surgery Grand Rounds on a wide variety of orthopedic topics, Department of Microbiology and Immunology Research Conferences, etc.

The combination of interdisciplinary interactions and didactic conferences, along with extensive inpatient and outpatient clinical experience, provides each fellow with a high level of skill in the indications and interpretation of biopsies of tissues relevant to diagnosis of rheumatic disease; of bone and joint imaging techniques including bone density measurement and of electromyogram; nerve conduction studies; and in the indications for orthopedic procedures and arthroscopy.

### **Reading**

There are several rheumatology textbooks that the fellow can learn from. Traditionally, we recommended “Koopman’s: Arthritis and Allied Conditions”.

The Rheumatology Department library (WSK 8310B) carries the 15<sup>th</sup> Edition (2005) of the above textbook and the 8<sup>th</sup> Edition of “Kelley’s Textbook of Rheumatology” (2009).

The textbooks can serve as a starting point, however the fellows are encouraged to, consult peer-reviewed journals (such as Arthritis and Rheumatism, The Journal of Rheumatology, Clinical and Experimental Rheumatology, Lupus etc) for original articles. For literature searches the fellows can use medline, UMU library and the New York State Library

### **Reading List and ACR Resources**

The American College of Rheumatology (ACR) compiled a list of updated publications and news on their website. <http://www.rheumatology.org/Learning-Center/Publications-News>

#### **Up-to-Date**

An educational program from the ACR, is an evidence-based, peer-reviewed medical information resource designed to provide clinic decision support from your computer, Smartphone or tablet

#### **Rheum2Learn**

Web-based educational module for Self-study

#### **CARE (ACR)**

Preparatory question bank for the Rheumatology Boards

#### **High Impact Rheumatology**

Educate Primary care physicians about Rheumatology Basics

## Procedures

Procedural skills and diagnoses, as show below, are monitored through a procedure log maintained by the MedHub system. The fellow will log-in their procedures and have the supervising physician verify it. After the numbers of requirements are met, the program director will certify the procedure. Please note the term “procedure” is used to describe both a physical performance of procedures and can also be case-based experiences with Rheumatologic diseases.

Title	Number of Requirements
Crystal Identification	3
Joint Aspiration	3
Soft Tissue/Tendon/Bursa Injection	3
Systemic Lupus Erythematosus	3
Infection of Joints and Soft Tissues	3
Joint Injection	3
Metabolic Diseases of Bones	3
Nonarticular Rheumatic Diseases, Including Fibromyalgia	3
Nonsurgical, Exercise-Related (Sports) Injury	3
Osteoarthritis	3
Osteoporosis	3
Juvenile Inflammatory Arthritis	3
Polymyositis	3
Regional Musculoskeletal Pain Syndromes, Acute and Chronic Musculoskeletal Pain Syndromes, and Exercise-Related Syndromes	3
Rheumatoid Arthritis	3
Scleroderma/Systemic Sclerosis	3
Sjögren's Syndrome	3
Spondyloarthropathies	3
Vasculitis	3
Psoriatic Arthritis	3
Gout	3
Pseudogout	3
Dermatomyositis	3

## **Research experience/Scholarly Activities:**

An active research component is included in the program with appropriate protected time, particularly during the second year. An optional third year of fellowship is available for those who wish to pursue their research interests intensively. All fellows participate in clinical or basic research, and specific projects can be tailored to their interests. Typically, the fellow are exposed to divisional research programs early in the first year, from there they decide from current projects what they are interested in participating in for several months or longer during their second year. During their first year, fellows participate in acquiring and entering patients in various studies, and may elect to spend up to a month on a specific project. Fellows also research interesting cases, and are encouraged to present and publish these. The immediate goal of this research experience is for the fellow to learn sound methodology in designing and performing research studies, and the correct interpretation and synthesis of research data and applied to patient care. Fellows work closely under their chosen faculty research mentor.

Fellows are expected to prepare their research activities for presentation and publication. They are also expected to publish at least one scientific paper, book chapter, abstract, case reports in a peer-reviewed journal, peer-reviewed performance improvement and/or present peer-reviewed funding, peer-reviewed abstract presented at regional, state, or a national specialty meeting during the course of their fellowship

Fellows also acquire knowledge of the design and interpretation of research studies, the responsible use of informed consent, and of research methodology and the interpretation of data by their involvement in actual projects with frequent supervision and discussion with the responsible faculty member. During their first year, they receive CITI research of ethics and Conflict of interest training for human research subjects. They also acquire knowledge of these aspects of research studies by their participation in both clinical and research journal clubs, as well as in the other conferences. Fellows also are required to complete the IHI online course which is arranged by the Department of Medicine.

A third year of fellowship training is offered for intensive research, particularly if the fellow is interested in an academic career. A specific project will be tailored to the fellow's interest, usually depending upon their experience and progress with a related or the same project during their first two years. They select from projects and mentor within the institution, but are encouraged to do a project within the section if possible. Eighty-five percent time is protected for research; 15% time is devoted to clinical duties, including a continuity ambulatory care experience of ½-day clinic per week, one month of inpatient consult year, and attendance at the Laboratory Conference/Journal clubs and weekly Rheumatology Conference. Application for outside funding of the third year of fellowship to organizations such as the Arthritis Foundation, is encouraged.

### **Publications from Former Fellows**

Mukhopadhyay, S., **Mousa, S.**, George, B.R. and Perl, A. (2004) Palpable purpura, polyarthritis, and abdominal pain. **Med. J. Aust.** 180:121-122.

**Quintero M, Mirza N,** Chang H, Perl A. (2006) Antiphospholipid antibody syndrome associated with primary angiitis of the central nervous system: report of two biopsy-proven cases. **Ann. Rheum. Dis.** 65 :408-9

Fernandez, D., **Bonilla, E.**, Mirza, N, Niland, B. and Perl, A. (2006) Rapamycin reduces disease activity and normalizes T-cell activation-induced calcium fluxing in patients with systemic lupus erythematosus. **Arth. Rheum.** 54: 2983-2988.

- Fernandez, D., **Bonilla, E.**, Phillips, P.E. and Perl, A. (2006) Signaling abnormalities in systemic lupus erythematosus as potential drug targets. **Endocrin, Metabolic & Immune Disorders - Drug Targets.** 6:305-311
- Bonilla, E., Francis, L.**, Allam, F., Ogrinc, M., Neupane, H., Phillips, P.E., and Perl, A. (2007) Immunofluorescence microscopy is superior to fluorescent beads for detection of antinuclear antibody reactivity in systemic lupus erythematosus patients. **Clin. Immunol.** 124:18-21
- Bonilla, E.**, Lee, Y.Y., Phillips, P.E., and Perl, A. (2007) Hypoglycaemia after initiation of etanercept treatment in a patient with type 2 diabetes mellitus. **Ann. Rheum. Dis.** 66:1688.
- Pullmann, R. Jr., **Bonilla, E.**, Phillips, P.E., Middleton, F.A. and Perl, A. (2008) Haplotypes of the HRES-1 endogenous retrovirus are associated with development and disease manifestations of systemic lupus erythematosus. **Arth. Rheum.** 58: 532-540.
- Francis L, Bonilla E, Soforo E**, Neupane H, Nakhla H, Fuller C, and Perl A. (2008) Fatal toxic myopathy attributed to propofol, methylprednisolone, and cyclosporine after prior exposure to colchicine and simvastatin. **Clin. Rheumatol.** 27:129-31.
- Perl, A., Nagy, G., Koncz, A., Gergely, P., Fernandez, D., Doherty, E., Telarico, T., **Bonilla, E.** and Phillips, P.E. (2008) Molecular mimicry and immunomodulation by the HRES-1 endogenous retrovirus in SLE. **Autoimmunity**, 41:287-297.
- Vyshkina, T., Sylvester, A., Sadiq, S., **Bonilla, E.**, Canter, J., Perl, A. and Kalman, B.(2008) Association of Common Mitochondrial DNA Variants with Multiple Sclerosis and Systemic Lupus Erythematosus. **Clin. Immunol.** 129:31-35.
- Vyshkina, T., Sylvester, A., Sadiq, S., **Bonilla, E.**, Perl, A. and Kalman, B.(2008) CCL genes in multiple sclerosis and systemic lupus erythematosus. **J. Neuroimmunol.** 200:145-152.
- Fernandez, D.R. Telarico, T., **Bonilla, E.**, Li, Q., Banerjee, S., Middleton, F.A., Phillips, P.E., Crow, M.K., Oess, S., Muller-Esterl, W., and Perl, A. (2009) Activation of mTOR controls the loss of TCR $\zeta$  in lupus T cells through HRES-1/Rab4-regulated lysosomal degradation. **J. Immunol.** 182: 2063-2073.
- Francis, L.** and Perl. A. (2009) Pharmacotherapy of SLE. **Expert. Opin. Pharmacother.** 10: 1481-1494.
- Perl, A., Fernandez, D., Telarico, T., **Francis, L.** and Phillips, P.E. (2009) T- and B-cell signaling biomarkers and treatment targets in lupus. **Curr. Opin. Rheumatol.** 21: 454-464.
- Tily, HI** and Perl, A. (2009) Lymphedema: a paradoxical effect of tumor necrosis factor inhibitors – case report and review of literature. **BMJ Case Reports** [doi:10.1136/bcr.07.2008.0520]
- Soforo, E.**, Baumgartner, M., **Francis, L.**, Allam, F., Phillips, P.E., and Perl, A. (2010) Induction of systemic lupus erythematosus with TNF blockers. **J. Rheumatol.** 37:204-205.
- Francis, L.** and Perl. A. (2010) Infection in systemic lupus erythematosus: friend or foe? **Int. J. Clin. Rheumatol.** 5:59-74.



**Tily, H.**, Banki, K., Hoffman, G.S. and Perl, A. (2010) Detection of lupus anti-coagulant and successful anti-coagulation in familial Sneddon syndrome. **Ann. Rheum. Dis.** 69: 775-776.

Lai, Z-W, Hanczko, R., Bonilla, E, Caza, T.N., Clair, B., Bartos, A., Miklossy, G, Jimah, J., Doherty, E, Tily, H., **Francis, L, Garcia, R., Dawood, M., Yu, J.**, Ramos, I., Coman, I., Faraone, S.V., Phillips, P.E. and Perl, A. (2012). N-acetylcysteine reduces disease activity by blocking mTOR in T cells of lupus patients. **Arth. Rheum.** 64: 2937-2946. PMID:22549432

**Garcia, R.J., Francis, L., Dawood, M,** Lai, Z-W., Faraone, S.V., and Perl, A. (2013) Attention Deficit and Hyperactivity Disorder Scores are Elevated and Respond to NAC treatment in patients with SLE. **Arth. Rheum.** 65: 1313-1318. PMID: 23400548

Lai, Z-W, Borsuk, R., **Shadakshari, A., Yu, J., Dawood, M., Garcia, R., Francis, F.**, Tily, H., Bartos, A., Faraone, S.V., Phillips, P.E. and Perl, A. (2013). mTOR activation triggers IL-4 production and necrotic death of double-negative T cells in patients with systemic lupus erythematosus. **J. Immunol.** 191: 2236-2246. doi: 10.4049/jimmunol.1301005

Liu Y, **Yu J,** Oaks Z, **Marchena-Mendez I, Francis L, Bonilla E,** Aleksiejuk P, Patel J, Banki K, Landas SK, **Perl A** (2015). Liver injury correlates with biomarkers of autoimmunity and disease activity and represents an organ system involvement in patients with Systemic Lupus Erythematosus. **Clinical Immunology.** 160(2):319-27. PMID:26160213

Lai ZW, **Marchena-Mendez I,** Perl A (2015). Oxidative stress and Treg depletion in Lupus patients with anti-phospholipid syndrome. **Clinical Immunology.** 158(2):148-52. PMID:25862984.

#### **Continuing medical education and society memberships:**

Fellows are strongly encouraged to become members of the American College of Rheumatology and the American College of Physicians. Their participation in the CME activities of these organizations is important to promote their standards of professionalism and the process of life-long learning. The department of medicine will pay for one membership in a major subspecialty society per fellow.

#### **Experience in developing teaching skills:**

The program provides an environment for promoting active teaching of medical students, residents, and other allied health personnel, as well as education of patients by the fellows. Fellows receive instruction and feedback in counseling and communication techniques. This includes cultural, social, behavioral, and economic issues such as confidentiality of information and indications for life-support systems. Fellows learn about cultural, social, and other issues by their clinical inpatient and outpatient experience under the close supervision and teaching of the Attending. These topics are also discussed during clinical management of the patients by the Attending and in conferences.

Fellows are responsible for teaching and supervising medical students and internal and PM&R residents while on the Inpatient Consult Rotation, in conjunction with the attending. They have a lesser role in outpatient teaching, as this is handled almost exclusively by the attending. The fellows have a major role in teaching and supervising the other trainees to prepare topics for the various conferences, particularly the weekly Rheumatology Grand Rounds. Fellows are strongly encouraged by the attending to develop effective teaching and communication skills.

# EVALUATION METHODS

The fellowship program is evaluated by both the faculty and fellows through the MedHub program.

As of July 1, 2014 we have adapted the ACGME required Next Accreditation System (NAS) and reporting milestones to evaluate the progress of our fellows semi-annually by the Clinical Competency Committee.

## **Evaluation of fellows:**

The evaluations provide an objective assessment of the 6 core competences (patient care, medical knowledge, practice-based learning and improvement, interpersonal and communication skills, professionalism, and system-based practice skills).

The NAS from the ACGME measures the fellows progress thru 23 Internal Medicine Subspecialty Reporting Milestones. The milestones are a measurement of the fellow's progress in the 6 core competencies. This is determined by various forms of evaluations including: faculty MedHub evaluations, elective MedHub evaluations, patient evaluations, direct observations, procedural logs, conference presentations and attendance, in-training exam scores, QI participation, research participation, mandatory compliance participation, etc. The various forms of evaluations are then compiled for the Clinical Competency Committee's semi-annually where the fellow's progress in each of the 23 Internal Medicine Subspecialty Reporting Milestones is determined by the committee. This provides the basis for promoting or graduating the fellows. The Clinical Competency Committee is composed of rheumatology faculty members and other staff.

The results of the Clinical Competency Committee are communicated and discussed fully to each fellow by the Program Director. The IM Subspecialty Reporting Milestones are communicated to the ACGME, Departmental Chairman and the Core Program Director.

One of the core components of measuring the fellow's progression is the direct observation, daily training, and correction as needed that occurs in the clinical setting under the close supervision of, and interaction with the attending that is characteristic of this program. This ongoing daily training and corrective process is important in achieving the goals for graduation.

The daily ongoing training and evaluation process encourages a free two-way communication between faculty and fellows so that areas for improvement can be identified quickly and corrective action taken. Fellows are encouraged to discuss any disagreement directly with the faculty involved, and then if necessary, the program director, the core program director, and the department chairman, in that order. If this process does not result in resolution of the fellow's grievance, the grievance can be further addressed according to established institutional guidelines.

In addition, annual formal evaluations are completed by the program director for each fellow for the GME, ABIM, and other organizations

### **Evaluation of faculty and program:**

Fellows evaluate faculty on a semi-annual basis using MedHub. Evaluations are collected in a fashion to assure the anonymity of the fellow as much as possible thru MedHub. Faculty and program concerns are addressed and discussed in the fellowship quarterly meetings with the Program Director, and at the monthly faculty section meeting, and on an as needed basis.

The ACGME and the GME require an end of year evaluation of the program. The results of these evaluations, formal faculty, and fellowship and program evaluations are discussed by the Program Evaluation Committee (PEC). The PEC committee is composed of both Rheumatology faculty and fellows. The PEC works on planning, developing, implementing and evaluating educational activities of the program; addressing areas of non-compliance with ACGME standards and reviewing and making recommendations for revision of competency based curriculum goals and objectives. The PEC then prepares a written plan of action to improve performance. This plan is documented for the GME Annual Program Review of Effectiveness and reviewed by the GME office.

Fellows evaluate the overall fellowship program annually at their year-end sessions, and suggestions regarding changes are solicited. Bulletins and mandated program changes from the ACR, ABIM, RRC, etc., are discussed and implemented in the same way. Fellows are encouraged to maintain a high level of communication with the program director and faculty on an ongoing basis. The information and feedback received during informal and formal meetings, and the semiannual evaluation forms are used to make any needed programmatic changes.

The program director reports to the department chairman on a monthly basis at regularly scheduled Division Chief Meetings, and approximately every month regarding fellowship program development and other issues. Informal evaluation of the program occurs at these meetings. Annual formal summaries of the program, faculty and fellows are provided to the chairman and/or program director.

