MICHIGAN MEDICINE
UNIVERSITY OF MICHIGAN

Division of Infectious Disease

Fellowship Training Program

Please consider the environment before printing this PowerPoint

Main Campus and North Campus Research Center

Michigan Medicine

- Large integrated health care system
  - 26,000 faculty, staff, students, trainees
  - All faculty are U of M employed
  - 3 hospitals (1000 beds)

- Multiple Outpatient Facilities throughout the Region
  - 40 outpatient locations
  - 2.1 million visits yearly

Michigan Medicine 11th Nationally (USNWR) and 15th Globally (5th Nationally) Newsweek

U.S. News 2019-20 Best Hospitals Honor Roll

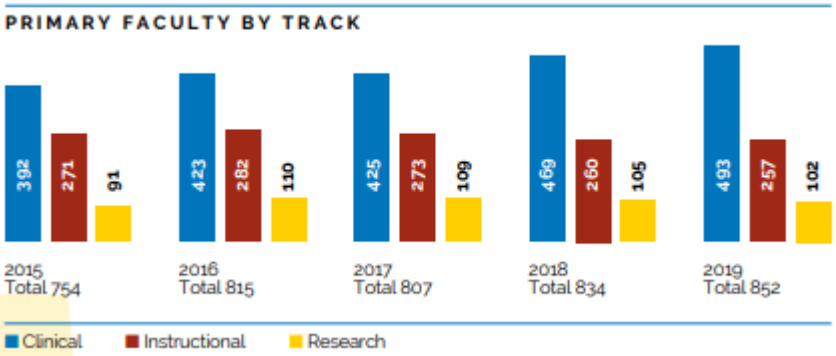
1. Mayo Clinic, Rochester, Minnesota
2. Massachusetts General Hospital, Boston
3. Johns Hopkins Hospital, Baltimore
4. Cleveland Clinic
5. New York-Presbyterian Hospital-Columbia and Cornell, New York
6. UCLA Medical Center, Los Angeles
7. UCSF Medical Center, San Francisco
8. Cedars-Sinai Medical Center, Los Angeles
9. NYU Langone Hospitals, New York
10. Northwestern Memorial Hospital, Chicago
11. University of Michigan Hospitals-Michigan Medicine, Ann Arbor
12. Stanford Health Care-Stanford Hospital, Stanford, California
13. Brigham and Women's Hospital, Boston
14. Mount Sinai Hospital, New York
15. UPMC Presbyterian Shadyside, Pittsburgh
16. Keck Hospital of USC, Los Angeles
17. University of Wisconsin Hospitals, Madison
18. (tie) Hospitals of the University of Pennsylvania-Penn Presbyterian, Philadelphia
18. (tie) Mayo Clinic-Phoenix
20. (tie) Houston Methodist Hospital
20. (tie) Yale New Haven Hospital, Connecticut

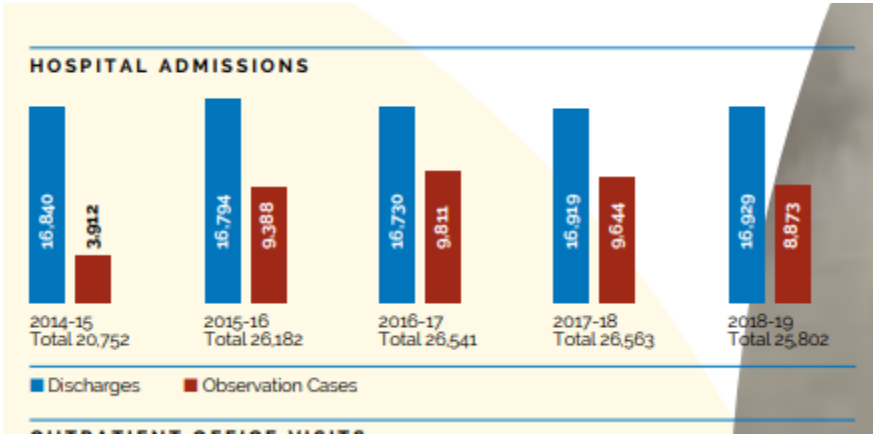
Rank	Hospital	Country	City	Hospital Beds
1	Mayo Clinic - Rochester	USA	Rochester, MN	1,265
2	Cleveland Clinic	USA	Cleveland, OH	1,285
3	Massachusetts General Hospital	USA	Boston, MA	1,011
4	Toronto General (University Health Network)	Canada	Toronto	727
5	Charité - Universitätsmedizin Berlin	Germany	Berlin	3,011
6	The Johns Hopkins Hospital	USA	Baltimore, MD	1,007
7	Universitätsspital Zürich	Switzerland	Zurich	953
8	Singapore General Hospital (SGH)	Singapore	Singapore	1,400
9	Sheba Medical Center	Israel	Ramat Gan	1,990
10	Karolinska Universitetssjukhuset	Sweden	Solna	1,340
11	Aarhus Universitetshospital	Denmark	Aarhus	1,150
12	Hôpital Universitaire Pitié Salpêtrière	France	Paris	1,717
13	Centre Hospitalier Universitaire Vaudois	Switzerland	Lausanne	929
14	Universitätsklinikum Heidelberg	Germany	Heidelberg	1,988
15	University of Michigan Hospitals - Michigan Medicine	USA	Ann Arbor, MI	1,006
16	St. Luke's International Hospital	Japan	Tokyo	520
17	Brigham And Women's Hospital	USA	Boston, MA	804

VA Ann Arbor Medical Center

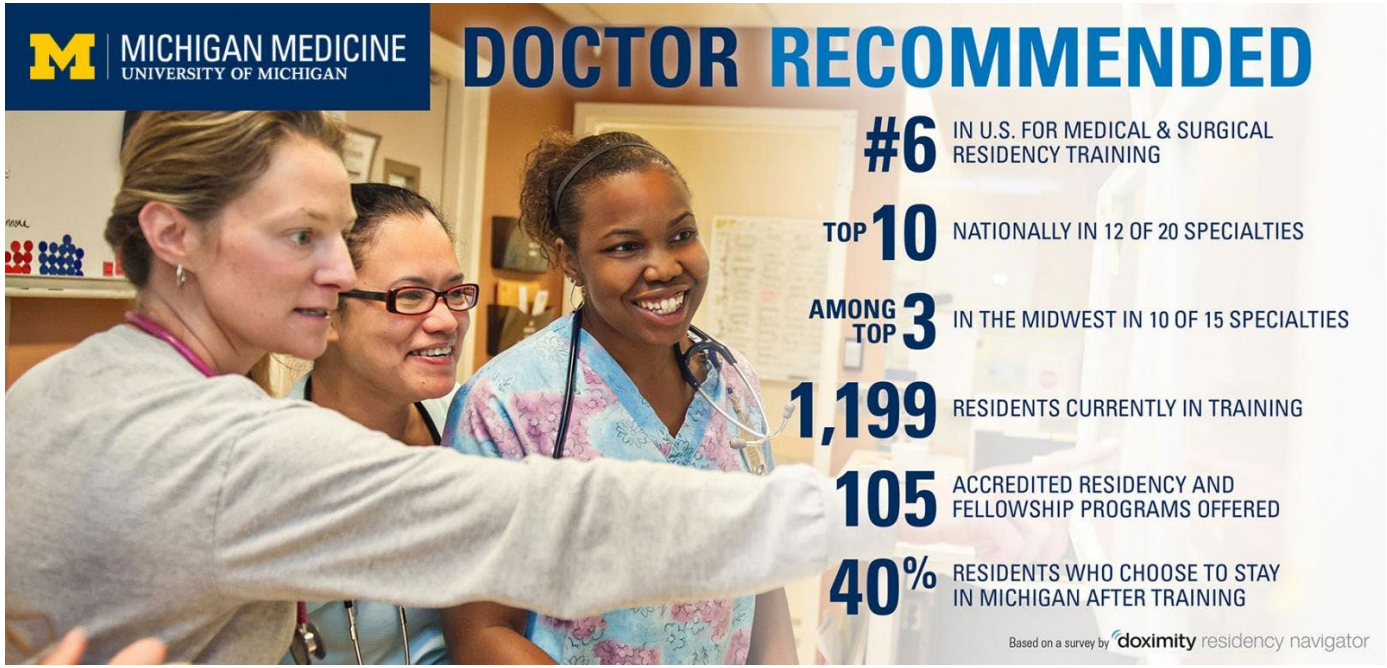
- 180,000 square foot clinical addition:1999
- New ambulatory clinic facilities and ICU's
- Comprehensive renovation of original building: 2002
- On-line order entry
- Computerized medical record system
- Electronic radiology system

Internal Medicine Statistics





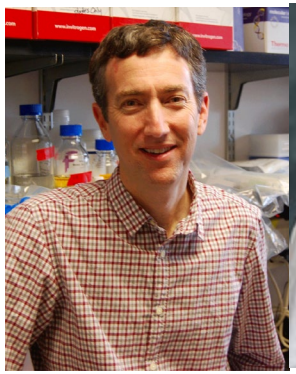
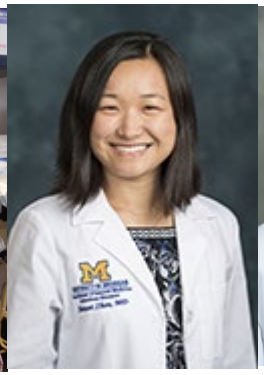
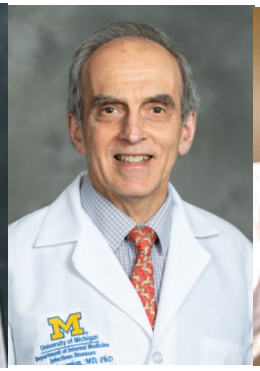
Post-Graduate Education



- 4th largest post-graduate program in the U.S.
- Ranked in all 20 USNWR specialties
- 2/3 of incoming trainees from out of state

Division of Infectious Disease Faculty

- All full-time faculty
- **40** faculty members (research and clinical)
- Antimicrobial Stewardship program
- Hospital Epidemiology/Infection Prevention
- Transplant Infectious Disease Service
- Ryan White Funded HIV/AIDS program
- Multiple recently hired clinical faculty

Transplant Infectious Disease

University of Michigan
Transplant Center

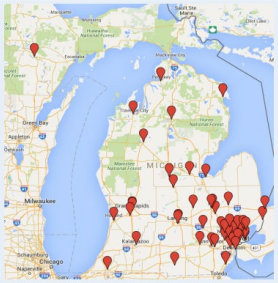
- 100 liver transplants
- 200 – 300 kidney transplants
- 25-30 heart transplants
- 30-35 lung transplants
- 200-250 hematopoietic stem cell transplants

- Dedicated transplant ID service
- Currently 4 faculty
- Clinical research opportunities available
- All fellows spend a minimum of 2 months rotating on this service

Antimicrobial Stewardship Program

HMS Hospitals

- 43 hospitals
- Diverse types / settings
  - Large AMCs-Small rural hospitals
- Hospital Participants
  - Physician Champion-hospitalist
  - Quality Lead
  - Data Abstractor
- Improving Care
  - Data / best practice sharing / facilitated implementation



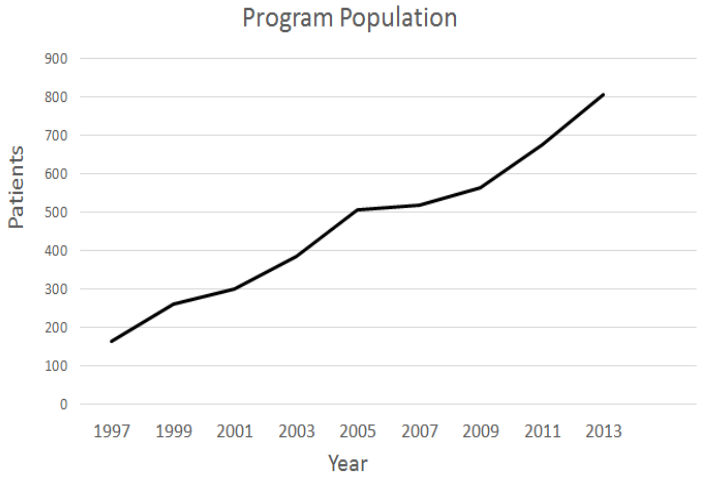
JAMA Internal Medicine | Original Investigation | LESS IS MORE

Risk Factors and Outcomes Associated With Treatment of Asymptomatic Bacteriuria in Hospitalized Patients

Lindsay A. Petty, MD; Valerie M. Vaughn, MD, MSc; Scott A. Flanders, MD; Anurag N. Malani, MD; Anna Conlon, PhD; Keith S. Kaye, MD, MPH; Rama Thyagarajan, MD; Danielle Osterholzer, MD; Daniel Nielsen, MS; Gregory A. Eschenauer, PharmD; Sarah Bloemers, MPH; Elizabeth McLaughlin, BSN, MS; Tejal N. Gandhi, MD

HIV/AIDS Treatment Program

- Ryan White Funded since 1997
- 900 active patients
  - 100 to 120 new patients each year
- 1 full time RN, 8 full time Social Workers
- 2 medical assistants
- Additional 150 HIV patients at VA



Antimicrobial Stewardship and HEIC

ANTIMICROBIAL STEWARDSHIP	
CORE	
All fellows completing the training program will have foundational training in AS allowing participation in all elements of interdisciplinary AS programs after graduation.	
Elements of the curriculum	
IDSA Core Curriculum for Antimicrobial Stewardship	• Fellows complete between month 7-18 • Combine with didactic series lecture with AST faculty after reviewing
Attend at least once either • *VA quarterly Antimicrobial Stewardship Meeting* • *UH weekly Antimicrobial Stewardship Meeting*	• Date and time of VA meeting • Monday 9:30 - 11 AM F4175
Attend at least one Antimicrobial Subcommittee Meeting	• Tuesday Noon, second Tuesday of the month, F4175
Microbiology *Micro Rounds*	• 2-week rotation • Time to be determined https://bluejeans.com/679099145 • OR Log into the bluejeans app and enter meeting code 679099145
Review AST pharmacist feedback from evening restricted antimicrobial phone calls	• Feedback within 72 hours from AST pharmacists
Didactic curriculum (2 year curriculum)	• Antimicrobial Resistance (gram +) • Antimicrobial Resistance (gram -) • Antimicrobial Resistance (yeast) • Overview of Stewardship • Disease Based Stewardship • Outpatient Stewardship • Board Review (AST)
ADVANCED	
Fellows with an interest pursuing a career focused on AS will have additional training to prepare for a leadership role and scholarly work in AS, interested and qualified fellows may benefit from a third year of training.	
AST Project	• Mentor from AST faculty*
IDSA Advanced curriculum	• Discuss with mentor from AST faculty
SPH Summer Session on Epidemiology	• Biostatistics and/or Epidemiology course • More advanced course work available for those with pre-requisites

* would like result in attendance at AST or antimicrobial subcommittee meetings

HOSPITAL EPIDEMIOLOGY/INFECTION PREVENTION	
CORE	
Purpose: Fellows completing the training program will have foundational training in Hospital Epidemiology and Infection Prevention allowing participation in these programs after graduation.	
Elements of the curriculum	
Annual Fellows' Course in Healthcare Epidemiology, Infection Prevention & Antimicrobial Stewardship (preferred) *Or* *SHEA online Infection Control Course*	• In person attendance preferred (rotating sites, 2018 Brown University) • On-line course • (http://www.fellowscourse.shea-online.org/Default.aspx)
Attend at least once the following: • *Infection Prevention Workgroup* • *Topic specific Meeting* ○ *CAUTI and/or CLASBI* • *Infection Control Committee (Hospital wide)*	 • Thursday 10-11:30 AM NIB (weekly) • Varies (monthly) • Cafeteria conference rooms (Mon 12 - 1:30 PM)
Didactic curriculum (2 year curriculum)	• Respiratory viruses in Hospitalized Patients • Prevention of Ventilator-Associated Pneumonia • Control of Antimicrobial-Resistant Organisms • Outbreak Investigation • Prevention of Surgical Site Infections • Prevention of Central Line-Associated Infections • Management of Communicable Diseases • Prevention of Catheter-Associated Urinary Tract Infections • Gastrointestinal Infections in Hospitalized Patients • Occupational Health for the ID Physician • Infection Control Board Review
ADVANCED	
Fellows with an interest pursuing a career focused on HEIC will have additional training to prepare for a leadership role and scholarly work in HEIC, interested and qualified fellows may benefit from a third year of training.	
HEIC Project	• Mentor from HEIC faculty
SHEA spring conference	• HEIC track
SPH Summer Session on Epidemiology	• Biostatistics and/or Epidemiology course • More advanced course work available for those with pre-requisites

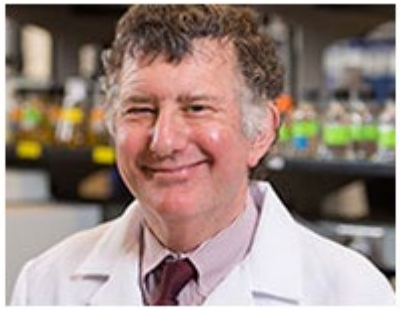
HIV and Transplant ID

HIV/AIDS	
CORE	
Purpose: Fellows completing the training program will be able to competently care for HIV positive patients.	
Elements of the curriculum	
HIV on-line course	• https://www.hiv.uw.edu/
Patient experience: • *Care for at least 10 HIV infected patients new the University HATP beginning month 7-18 of fellowship* • *VA ID clinic*	• One weekly NP HIV slot beginning month 7 of fellowship
Didactic curriculum (1 year curriculum)	• Antiretroviral Therapy • Opportunistic Infections • Adverse Reactions to HAART • Malignancy and Other Complication • **Women's Health** • **Primary Care of the HIV Infected Patient** • **HIV and STDs** • HIV Board Review
Structure HIV Care in the US- Ryan White Program	• Amy Jacobs
ADVANCED	
Fellows with an interest pursuing a career focused on HIV/AIDS will have additional training to prepare for a leadership role and scholarly work in HIV/AIDS	
Additional HATP clinic	• Thursday morning
HIV/AIDS research project	• various
Conferences	• attend CROI

TRANSPLANT INFECTIOUS DISEASE	
CORE	
Purpose: Fellows completing the training program will be able to recognize and treat complications of HSCT and SOT and understand strategies to prevent post-transplant infections.	
Elements of the curriculum	
Transplant in 10	• https://ast.digitellinc.com/ast/conferences/6/view ○ How to screen and manage BK ○ My donor is infected: Safe to accept? ○ Vaccination in SOT patients ○ Drug-drug interactions and immunosuppression ○ PTLD ○ Opportunistic Transplant Infections (free but registration required)
Attend at least once the following: • *Weekly transplant ID clinical meeting* •	• Monday 12:30-1:00 PM F4133 •
Didactic curriculum (2 year curriculum)	• Donor Derived Infection, vaccination, pretranpslant evaluation, safe living after transplantation • CMV infection • Non-CMV viral infections • Infections associated with LVADs • Fungal infections after HSCT and SOT (epi and diagnosis) • Fungal infections after HSCT and SOT (treatment and drug monitoring) • Prevention of infection in cancer patients • Infection risk associated with various forms of immunosuppression • Respiratory viral infection after transplantation • PTLD • Transplant ID board review
ADVANCED	
Fellows with an interest pursuing a career focused on Transplant ID will have additional training to prepare for a leadership role and scholarly work in Transplant ID, interested and qualified fellows may benefit from a third year of training.	
AST Comprehensive Trainee Curriculum	• https://ast.digitellinc.com/ast/courses • (program will cover cost, appendix sequences topics relevant to ID)
Monday transplant meeting	• Regular attendance
Conferences	• ATC

Infectious Disease Division Research

- Full spectrum of basic and clinical research opportunities available
- Collaboration with School of Public Health and other members of the University community
- Particular strength in antibiotic resistance intersection with antimicrobial stewardship



Divisional Research Committee

Date	Time	Attendees	Purpose
Year 1: July	Wednesday 9 AM	Committee First year fellows	Explain structure and requirements of research rotation
Year 1: July-August	Thursday 8 AM	Tom Schmidt First year fellows	Lecture focused on content of scientific proposal (one page)
Year 1: Oct-Nov	Thursday 8 AM	Committee First year fellows	Review proposed mentor and project (topic area); **fellows will provide one-page written plan at least one week in advance**
Year 1: Jan-Feb	Thursday 8 AM	Committee Mentor First year fellows	Review detailed proposed project; discuss GR presentation
Year 2: July-August	Thursday 8 AM	Committee First year fellows Mentor	Review progress

ID Consult Service Structure

General Rotation Template (flexible)

Year 1: July-December	UH ID General Consult Service (2 months) AAVA ID Consult Service (2 months) MDRO or Transplant ID Consult Service (2 months) Weekly Continuity clinic (UH)
Year 1&Year 2: January-December	Research Rotation Weekly Continuity (AAVA) Weekly Continuity clinic (UH)
Year 2: January -June	ID General Consult Service (2 months) AAVA ID Consult Service (2 months) MDRO or Transplant ID Consult Service (2 months) Weekly Continuity clinic (UH)

UH= University Hospital; AAVA=Ann Arbor VA; MDRO=multidrug resistant organism

Outpatient Clinic

6 months	12 months	6 months
Tues AM (U)	Tues AM (U)* Fri AM (VA)	Tues AM (U)

- * may “atrophy” if primary research career is goal

Elective Rotations

- Microbiology
- Additional transplant ID
  - BMT service
  - Renal or liver transplant
- Hepatitis C
- Additional HIV
- School of Public Health courses

- SHEA hospital epidemiology course
- Travel medicine
- International rotations/research
- IDSA practice course

Summer Session in Epidemiology

2020 Program Schedule

Morning Classes (8:30 am–12:00 pm, Monday–Friday)	
EPID 701	**Fundamentals of Biostatistics** (3-week course)
EPID 703	**NEW! Applied Infectious Disease Modeling**
EPID 712	**Oral Diseases and their Important Roles in General Health**
EPID 717	**Design and Conduct of Clinical Trials**
EPID 718	**Analysis of Clinical Trials**
EPID 720	**Applied Mediation Analysis**
EPID 730	**NEW! Simulation Modeling of Tobacco Use, Health Effects and Policy Impacts** (full-day course)
EPID 747	**Successful Scientific Writing**
EPID 766	**Analysis of Longitudinal Data**
EPID 780	**Applied Epidemiologic Analysis for Causal Inference**
EPID 787	**Introduction to Multilevel Analysis in Public Health**
EPID 793	**Introduction to Complex Systems Modeling for Public Health Research** (full-day course)
Afternoon Classes (1:30–5:00 pm, Monday–Friday)	
EPID 709	**Fundamentals of Epidemiology** (3-week course)
EPID 708	**Machine Learning for Epidemiologic Analysis in the Era of Big Data**
EPID 716	**Clinical Epidemiology and Evidenced-Based Research**
EPID 719	**Methods in Genetic and Epigenetic Epidemiology**
EPID 721	**Applied Sensitivity Analyses in Epidemiology**
EPID 724	**Leadership and Strategic Planning for Public Health**
EPID 730	**NEW! Simulation Modeling of Tobacco Use, Health Effects and Policy Impacts** (full-day course)
EPID 742	**Introduction to Linear, Logistic and Poisson Regression**
EPID 757	**Systematic Reviews and Meta-Analysis**
EPID 761	**Social Determinants of Population Health**
EPID 777	**Geographic Information Systems for Epidemiology**
EPID 778	**Spatial Statistics for Epidemiologic Data**
EPID 784	**Survival Analysis Applied to Epidemiologic and Medical Data**
EPID 793	**Introduction to Complex Systems Modeling for Public Health Research** (full-day course)
Distance Learning	
EPID 701D	**Fundamentals of Biostatistics** (3-week course, 8:30 am–12:00 pm)
EPID 709D	**Fundamentals of Epidemiology** (3-week course, 1:30–5:00 pm)
EPID 717D	**NEW! Design and Conduct of Clinical Trials**
EPID 720D	**NEW! Applied Mediation Analysis**

ID Core Didactic Curriculum

2019 ID Fellows Summer Conference Schedule
Thursday from 8:00am to 9:00am
Room F4175 UH South

7/4/19	**Cancelled: Holiday**
7/11/19	**Common Adverse Reactions to Antibiotics and how to Manage Them** *Lindsay Petty, M.D.*
7/18/19	**Intravascular Catheter Management** *RoseAnn Dubke, BSN, RN, CCRN (UM Vascular Access Service Team)*
7/25/19	**Quality Improvement Projects** *Rishi Chanderraj, M.D.*
8/1/19	**Fellow Mental Health Awareness** *Dan Kaul, M.D.*
8/8/19	**PK/PD** *Jerod Nagel, PharmD (ID Pharmacy)*
8/15/19	**Vanco-AG Dosing and Monitoring** *Jerod Nagel, PharmD (ID Pharmacy)*
8/22/19	**How to Prepare a Research Proposal** *Marisa Miceli, M.D.*
8/29/19	**Fellow Wellness Check-In (all fellows)** *Lindsay Petty, M.D.*

Updated 5/22/2019 ALE

ID Fellows Conference 2019-2020 Schedule
Thursday from 8:00am to 9:00am
Room F4175 UH South

9/5/2019	**Endemic Fungal Infections** *Carol Kauffman, M.D.*
9/12/2019	**Fellow as Teacher** *Ji Hoon Baang, M.D.*
9/19/2019	**Fellow Journal Club** *Sami El-Dalati, M.D. and Preeti Malani, M.D.*
9/26/2019	**Fellow Journal Club** *Alex Perry, M.D. and Krishna Rao, M.D.*
10/3/2019	**Cancelled: IDSA**
10/10/2019	**Pneumonia in the Hospitalized Patient** *Owen Albin, M.D.*
10/17/2019	**Meningitis/Encephalitis** *Daniel Kaul, M.D.*
10/24/2019	**Antimicrobial Resistance and Optimal Treatment of Gram Negative Infections** *Twisha Patel, Pharm.D., BCPS*
10/31/2019	**Urinary Tract Infections** *Suzanne Bradley, M.D.*
11/7/2019	**Antimicrobial Resistance and Treatment for Gram Positive Infections** *Jerod Nagel, Pharm.D.*
11/14/2019	**Parasitology I** *Powel Kazanjian, M.D., Ph.D.*
11/21/2019	**Parasitology II** *Powel Kazanjian, M.D., Ph.D.*
11/28/2019	**Cancelled: Holiday**
12/5/2019	**How to Organize a Research Talk** *Marisa Miceli, M.D.* *(first year fellows only)*
12/12/2019	**Outpatient Stewardship** *Lindsay Petty, M.D.*
12/19/2019	**AST Board Review** *Lindsay Petty, M.D.*
12/26/2019	**Cancelled: Holiday**
1/2/2020	**HIV Psychosocial Issues** *Amy Jacobs, L.M.S.W.*
1/9/2020	**Antiretroviral Agents: Indications, Agents (first year fellows only)** *Jamie Riddell, M.D.*
1/16/2020	**Antiretroviral Resistance (first year fellows only)** *Tejal Gandhi, M.D.*
1/23/2020	**Opportunistic Infections and Malignancies I** *Jamie Riddell, M.D.*
1/30/2020	**Adverse Reactions to HAART (first year fellows only)**

Preventive Medicine Residency

https://sph.umich.edu/pmr/index.html

SCHOOL OF PUBLIC HEALTH
PREVENTIVE MEDICINE RESIDENCY
UNIVERSITY OF MICHIGAN

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Purpose and Mission

The University of Michigan School of Public Health houses one of the oldest Preventive Medicine Residency programs in the country, dating back to 1969.

1969
Year the U-M SPH Preventive Medicine Residency Program began

The central mission of the School of Public Health's residency in General Preventive Medicine and Public Health is to train highly-qualified physicians for careers in clinical preventive medicine and public health.

The mission is accomplished through the provision of rigorous academic course work resulting in a Master of Public Health degree in one of the following core areas of public health:

- General Epidemiology
- Environmental Health Sciences
- Health Behavior and Health Education
- Health Management and Policy

This mission is also accomplished by the provision of broad practicum experiences with concentrations in applied epidemiology, public health practice, and clinical preventive medicine, which are typically provided for populations with high levels of unmet health care needs.

#1
Public Research University in the U.S.

Post-Fellowship Positions

- **University based faculty**
  - University of Michigan
  - Emory University
  - University of Kentucky
  - Medical College of Wisconsin
  - University of Illinois Chicago
  - Michigan State University
  - OHSU
  - University of Minnesota (TID)
  - University of Arizona
  - University of Pittsburgh
- **Hospital Employed**
  - St. John's Health system
  - St. Joseph's Hospital
  - Queen's Health Care (Honolulu)
  - Cleveland Clinic
  - Oakwood Hospital
  - Henry Ford Health System
- **Private Practice**
  - Pittsburgh, PA
  - Carolinas Hospital (Charlotte NC)
  - Toledo, OH
  - Petosky, MI
  - Duluth, MN
  - Seattle, WA
  - Traverse City, MI
- **Additional training**
  - London School of Tropical Medicine
  - Doctors Without Borders
  - CDC EIS Officer
  - Mayo Clinic Transplant ID fellowship

House Officer Benefits

- Salary Schedule + lump sum HOIV $68,260 + $6,143
- Meal Allowance
- Medical/Dental/Disability Insurance
- On-Line Medical Resources
- Maternity/Paternity leave
- Parking
- Exercise Facility
- Travel Allowance

About Ann Arbor

MAY 8, 2017

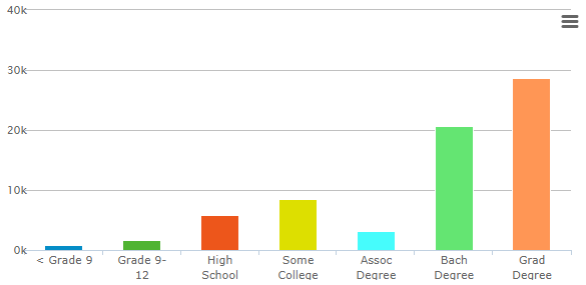
Ann Arbor Named 'Best City to Live' in America

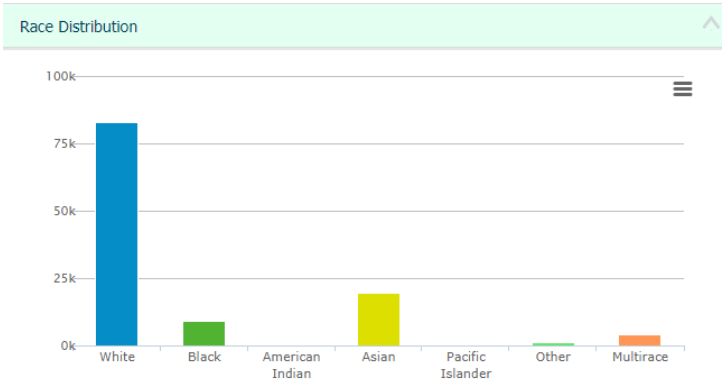
PRINT

SHARE

If you live in Ann Arbor, you already know this city is a great place to call home. But a new list confirms what you may have suspected: Ann Arbor is the best city to live in America.

Population: 115,985





MICHIGAN MEDICINE
UNIVERSITY OF MICHIGAN

Sleeping Bear Dunes

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