

ALUMNI

2016 • Issue 3



O Canada

“Engaging” “Enlightening” “Educational”

— Whistler attendees



MAYO CLINIC ALUMNI CONTENTS

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ABOUT THE COVER | The Mayo Clinic Alumni Association International Meeting in Whistler, British Columbia, Canada, included a gala dinner at the Squamish Lil’wat Culture Centre with hoop dancing by Alex Wells from the Lil’wat Nation.

Letter from the president

You'll read about the recent International Meeting in Whistler, British Columbia, Canada, in this issue. From all accounts, it was outstanding. By the time you receive the next issue, we'll know the location for the 2018 International Meeting. I hope you'll plan to attend.

Consider attending the 2017 Alumni Association Biennial Meeting in Jacksonville and Ponte Vedra Beach, Florida. If you trained in Minnesota or Arizona, the meeting is an opportunity to see the Florida campus. If you trained in Florida, it's a homecoming opportunity. Wherever you trained or whatever your connection to Mayo Clinic, it's a rich opportunity to connect with mentors and colleagues. Read the comments from alumni who attended the Whistler meeting. Couldn't an immersion in all things Mayo Clinic benefit you, your practice and your family?

Attendees at these meetings always say, "I wish there were more people in my specialty at the meeting." That doesn't happen by magic. You can help to make that happen. Tell a few people in your specialty — a former trainee, a former colleague or friend, someone you trained with, a mentor — that you plan to be in Jacksonville. Reach out, and plan to attend together.

This issue of the magazine is robust, with stories about Mayo's involvement in fascinating national initiatives — the Precision Medicine Initiative (PMI) Cohort Program biobank and National Microbiome Initiative. On the lighter side, this year is the 25th anniversary of "Mayo Clinic Radio." If you haven't



Susheela Bala, M.D.

- President, Mayo Clinic Alumni Association
- Private Practice, Adult and Pediatric Allergy, Asthma and Immunology, San Bernardino, California
- Chief of Allergy, J.L. Pettis VA Medical Center Loma Linda, California

heard this popular program, check to see if it airs in your market, or listen to it whenever you want via podcasts. And tell your patients about it.

Drs. Will and Charlie were big proponents of sharing medical knowledge, which is still an important value at Mayo Clinic. We hope you'll consider attending an alumni meeting, share "Mayo Clinic Radio" with your patients or explore using a Mayo Clinic biobank for a research endeavor.

A handwritten signature in black ink, appearing to read "Susheela Bala".



Attendees at these meetings always say, 'I wish there were more people in my specialty at the meeting.' That doesn't happen by magic. You can help to make that happen.

– Susheela Bala, M.D.





CANADA

Alumni Association International Meeting

In June 136 alumni and 50 of their family members gathered in Whistler, British Columbia, Canada, for the Mayo Clinic Alumni Association International Meeting. The meeting included a welcome reception, CME program and gala dinner.



Deborah Lightner, M.D. (U '95), Department of Urology and course co-director of the meeting, said it was the best of the four international meetings she's attended. "We had more alumni, more family members and fabulous talks. My co-director, Dr. (John) Wilkinson, recommended the

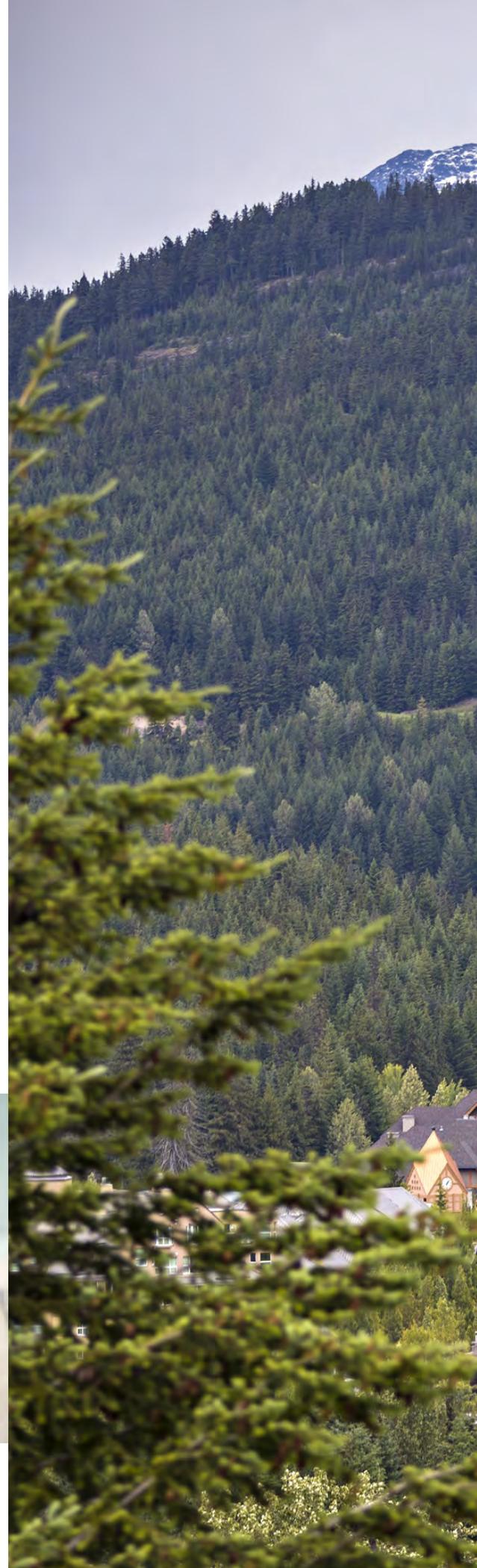
speakers — great presenters who appealed to a broad audience. The audience engagement was tremendous. As soon as each speaker finished, hands shot up to ask questions. It was an embarrassment of riches."

Dr. Wilkinson (MED '78, FM '81), Department of Family Medicine, concurs. "There was something for everyone. We rightly expected the speakers to be great — we have incredible bench strength at Mayo Clinic. There's an expert for every topic."



Welcome reception

The welcome reception **1** took place at the Woodland Terrace at the Fairmont Chateau Whistler and featured a presentation by Matt Dacy **2**, director of Mayo Clinic's Heritage Hall. His talk, "Science Knows No Country," was a look at Mayo Clinic's international reach from the earliest days. Reception guests were entertained by Canadian guitarist Dave Martone **3**.





“ I was curious about the Alumni Association — this was my first alumni meeting of any kind. We wanted to see Whistler. The meeting reminded me of my experiences at Mayo and was more interesting and educational than I thought it would be. We brought our 4-year-old son, and my wife attended some of the presentations and really enjoyed the one on pediatric concussions.

“I enjoyed meeting people from Mayo and different parts of the country and learning about their specialties. My interest in being more connected is piqued now, and I’ll be more inclined to go to alumni meetings. If Mayo is planning it, I know everything will be taken care of for us.”

– **Gregory Christiansen, M.D.**
(TY '01, OPH '04),
Clarus Vision Clinic,
Salt Lake City, Utah

CME program — speaker highlights



Steven Krotzer, M.D.

Steven Krotzer, M.D.

(I '01) Division of Consultative Medicine
Mayo Clinic Arizona

“Medical Aspects of Travel”

Dr. Krotzer reviewed the morbidity and mortality associated with international travel and emphasized prevention to reduce risks. Despite the risks, travel can be one of the most rewarding human experiences, he said. Dr. Krotzer encouraged attendees to travel — “Don’t postpone it. The world changes, and you lose opportunities forever.”

The majority of travel-related mortality among Americans is from medical and especially cardiac events, with trauma a close second. The most important issue, then, is cardiopulmonary fitness for travel. “Talk to your primary care provider, and ask if it’s safe for you to travel to your destination from a medical standpoint. Pretravel evaluations such as cardiac stress testing or pulmonary function tests may be lifesaving. If you’re a medically complicated patient, consider a consultation with a travel medicine specialist.”

Travel medicine consultations also are recommended when you plan travel to an area with risk of malaria or yellow fever exposure; consult the Centers for Disease Control and Prevention website. You may need anti-malaria medication or a yellow fever vaccination. The vaccine is effective but has age-dependent risk of an adverse reaction including death, so it’s important to weigh the risks and benefits with a travel medicine expert.

Other travel-related tips from Dr. Krotzer:

- **Avoid contact with animals overseas.** “We’re fortunate in our country in that we have virtually no rabies in our dogs. Outside our borders, the situation is very different.” Published studies usually indicate 5 percent of feral dogs are rabid in, for example, downtown Bangkok. Ninety percent of rabies in humans comes from dogs. Keep away from loose dogs especially, as well as monkeys and bats. If you get bitten, seek medical care immediately. Rabies is universally fatal untreated but preventable by avoiding contact with animals.
- **Use vector precautions for mosquitoes,** which can transmit dengue fever, chikungunya, Zika and many other diseases. Sparingly use repellent such as 50 percent DEET on exposed skin first thing in the morning, at noon and at sunset. Cover exposed skin with clothing as much as is practical. Spray permethrin on your clothing, or buy clothing already treated with it. Use bed nets. “Repellents form a protective cloud around you, are very effective and have strong safety records with sensible use.”
- **Be careful with food and water.** Wash your hands as often as you can, and use hand sanitizer. Avoid uncooked salads, unpasteurized milk products, unpeeled fruits and vegetables, buffets and street fair food. Drink bottled beverages. In some countries, you may be served a beverage in a bottle that has been recycled. You can tell if it has no effervescence when opened. Before your trip, ask your primary care provider for an antibiotic for traveler’s diarrhea just in case. The vast majority of cases are resolved with an antidiarrheal medication and one dose of an antibiotic.

Rochelle Torgerson, M.D., Ph.D.

(MDPHD '00, MBIO '00, I-1 '01, DERM '04, DERMI '05)

Department of Dermatology

Mayo Clinic Rochester

“It’s Not Rocket Surgery: Dermatology Pearls for When Cortisone Isn’t the Answer”

Dr. Torgerson relayed helpful dermatologic advice about baths and showers, dry skin, sunscreen and bug spray.

- **Baths and showers** — If you don’t have dry skin or another skin issue, you probably don’t need to make any changes — these tips apply to people with dry or sensitive skin.

When you shower, use water that’s warm enough to be comfortable but not so hot that the shower is steamy. Stay in only as long as needed to clean yourself; don’t linger. Use a mild, unscented soap. She recommends an “airplane bath” — lathering up with soap under “the wings and tail” — the underarms and genitals, in other words. You don’t need to use soap on the rest of the body as long as it’s in the shower.

Canada notes

Did you know?

- When Henry Plummer, M.D., established the unified dossier medical record at Mayo Clinic in 1907, patient number one was from Canada. So was patient number 1 million, who registered in 1938.
- Among the many Mayo residents, fellows and other alumni who have hailed from Canada are:
 - Donald Balfour, M.D. (S 1909), an early leader in Mayo’s education program who married Carrie Mayo, the daughter of William J. Mayo, M.D.
 - Hugh Smith, M.D. (PHYS '71, CV '73), Division of Cardiovascular Diseases, who served as chief executive of the Rochester campus
 - John Noseworthy, M.D. (N '90), Department of Neurology and current president and CEO of Mayo Clinic



Rochelle Torgerson, M.D., Ph.D.

If you enjoy soaking in a tub, don’t add anything to the water except an oatmeal bath product. Don’t soap up and shampoo in the bath. Get up and use the shower when you use soap and shampoo.

- **Dry skin** — Your arms and legs may be less dry once you stop using soap on them in the shower. You may still need moisturizing lotion. Unless your skin is especially sensitive, it usually doesn’t matter what lotion you use as long as you use it. If your skin is particularly dry, you may need to moisturize twice a day. You get the biggest bang for your buck when you moisturize right out of the shower — pat yourself dry with a towel and then apply lotion.
- **Sunscreen** — Dr. Torgerson recommends using a broad-spectrum sunscreen with an SPF of 30 or higher. It must be applied to all exposed skin. “Most people don’t apply it thickly enough, early enough or often enough (every two hours).” Broad spectrum indicates UVA coverage in addition to the UVB coverage indicated by SPF.

If you’re in the water, use a water-resistant sunscreen. No sunscreens are completely waterproof. Reapply every 40 to 80 minutes per the product’s instructions and again once you’ve finished in the water.

Dr. Torgerson pointed out that there are two different types of sunscreen — chemical and physical — and that the best ones have both features. Some people may be sensitive to chemical sunscreens and should instead use a product with a physical blocker. The active ingredient in these products is micronized zinc oxide or micronized titanium dioxide; they contain tiny micronized pieces of metal that reflect light off of the skin.

- **Insect repellent** — Dr. Torgerson followed up on Dr. Krotzer’s talk with the recommendation that children should use a DEET concentration of 30 percent or less. Another newer choice for the active ingredient in insect repellent is picaridin, which is popular in Europe and Australia. >>



Fred Kusumoto, M.D.



Juna Misiri, M.D.

Fred Kusumoto, M.D.

(CV '04) Department of Cardiovascular Diseases
Mayo Clinic Florida

Juna Misiri, M.D.

(CV '12, CV-EP '14) Cardiologist
Brandon, Florida

“Arrhythmias in Women”

Drs. Kusumoto and Misiri discussed how differences in underlying cardiac physiology between men and women translate into clinical differences such as risk of death and stroke in the presence of atrial fibrillation and risk of side effects from medications.

Their words of wisdom included:

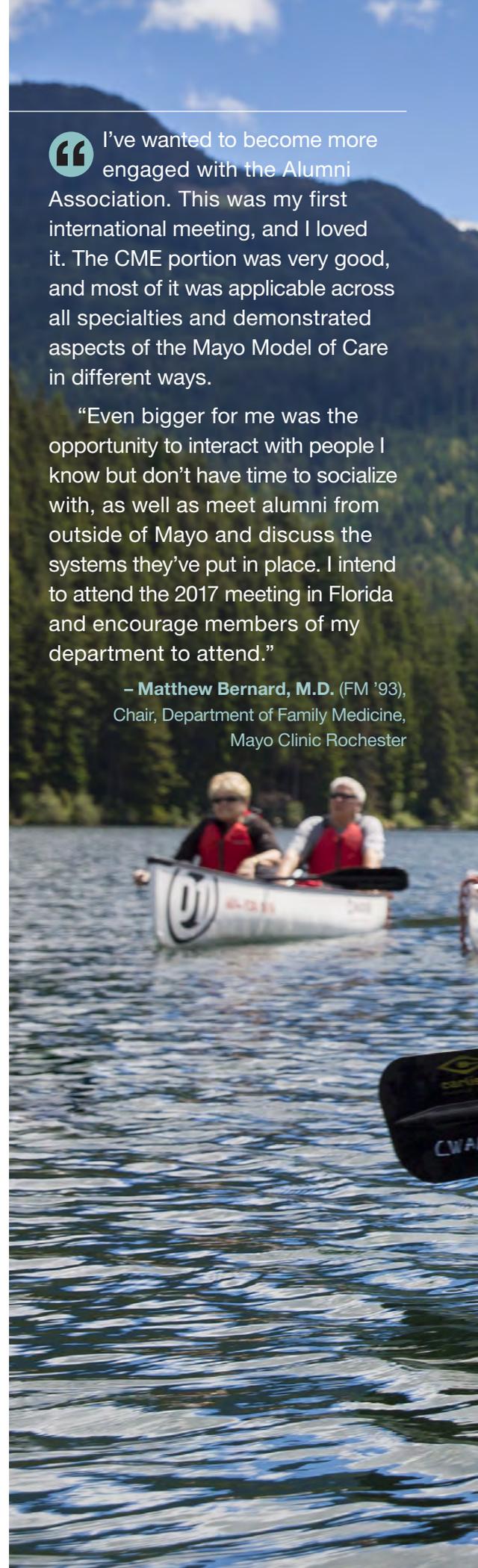
- Cardiovascular disease is a leading cause of death in women. Even though it's more common in men, don't forget to check and treat women for it.
- Atrial fibrillation in women is less common than in men but more symptomatic and can lead to more significant clinical consequences including stroke. All women with atrial fibrillation who are older than 65 or have a risk factor for stroke should be treated with anticoagulants.
- Some medications have greater risks when prescribed to women. Recommend EKGs and other tests to make sure you're not putting women patients at risk from significant medication side effects.
- Women are more sensitive to drugs that prolong the QT interval, including some antiarrhythmic drugs, methadone, haloperidol, droperidol, thioridazine, pentamidine and erythromycin. >>



I've wanted to become more engaged with the Alumni Association. This was my first international meeting, and I loved it. The CME portion was very good, and most of it was applicable across all specialties and demonstrated aspects of the Mayo Model of Care in different ways.

“Even bigger for me was the opportunity to interact with people I know but don't have time to socialize with, as well as meet alumni from outside of Mayo and discuss the systems they've put in place. I intend to attend the 2017 meeting in Florida and encourage members of my department to attend.”

– **Matthew Bernard, M.D.** (FM '93),
Chair, Department of Family Medicine,
Mayo Clinic Rochester





Bart Demaerschalk, M.D.
(N '01), Department of
Neurology at Mayo Clinic in
Arizona, canoed with his son,
Nicholas, at the International
Meeting in Whistler.

Joseph Mikhael, M.D.

(HEMO '08) Division of Hematology
and Medical Oncology
Mayo Clinic Arizona

“Multiple Moves in Myeloma — a Mayo Memoir”

Dr. Mikhael informed attendees that Mayo Clinic has built the largest multiple myeloma and related disorders practice in the world. Due in part to this expertise and interest, the average survival rate has tripled in the last decade — from two to 10 years. “Very few cancers have had this kind of improvement in survival, and we are grateful that Mayo Clinic has been a huge part of that evolution. Multiple myeloma isn’t yet curable. Our first step is to make it a chronic condition rather than a deadly one. Today our patients have much more hope than they had before.”

He cited the efforts of Robert Kyle, M.D. (I '59), Division of Hematology at Mayo Clinic in Rochester.

“Dr. Kyle is an extraordinary pioneer who defined multiple myeloma-related diseases. Beginning his work in 1959, he established a database and serum biobank, defined how common the monoclonal protein (the abnormal protein that signifies possible myeloma) was in blood and what percent of people with the protein go on to develop multiple myeloma. For almost 15 years, it was largely a one-man myeloma program until a series of outstanding physicians were added. Due to the massive program Dr. Kyle built, we now have clear definitions for all myeloma-related diseases, drugs that

are the standard of care and international leadership on this condition. Our three-site practice has a simple vision — to advance individualized care, have a global impact, and cure myeloma and related disorders. We’ve made incredible progress and believe we have the team in place to realize this vision. The setting of Mayo Clinic has allowed this to happen.”

Mayo’s multiple myeloma practice brings together more than 30 clinicians and researchers to focus on one rare cancer, which represents just 1 percent of all malignancies:

- Hematologists
 - 20 in Rochester
 - 6 in Arizona
 - 4 in Florida
 - 14 at the professor level
- 7 specialists in divisions other than Hematology/Oncology across three sites
- Complete integration across the three sites
- Myeloma SPORE grant

Their takeaway — course co-directors



Deborah Lightner, M.D.

“The International Meetings are an opportunity to communicate with colleagues who are actively in practice and

an exchange to broaden our collegiality. It was a mixture of talking to colleagues from all Mayo sites I hadn’t seen for a while and people I hadn’t seen since training. It’s a good time to connect.”



John Wilkinson, M.D.

“I reconnected with colleagues, many of whom I see at the clinic on a regular basis but don’t have time for relaxed conversations.

Everybody should consider attending an Alumni Association International Meeting.”



Joseph Mikhael, M.D.



Ernest "Tasso" Bouras, M.D.

Ernest "Tasso" Bouras, M.D.

(GI '96) Division of Gastroenterology and Hepatology
Mayo Clinic Florida

"Gut Microbiome"

Interest in the human microbiome has increased recently, with more than 90 percent of articles on the topic published in the last five years. Mayo Clinic is a leader in this emerging area. This year the White House announced a National Microbiome Initiative, and Mayo announced the formation of a Microbiome Clinic (page 20).

Dr. Bouras described the human gut microbiome as a largely unexplored ecosystem. "We have trillions of microbial cells in our bodies, with more than one hundredfold the number of genes than the human genome. A better understanding of this system is crucial to our health and well-being. To that end, newer molecular techniques are enhancing our understanding of the microbial milieu. The intestinal microbiota could be considered a postnatal-acquired organ that performs different functions for the host. Abnormalities in the balance of the bacterial milieu have been associated with certain disease states."

The most obvious of these disorders is *Clostridium difficile* infection, which can be treated with fecal microbiota transplant to restore healthy gut bacteria. Researchers also are looking at conditions including glucose digestive diseases, metabolic disorders, obesity, neuropsychiatric disorders and cardiovascular disease. "Can we transfer healthy gut bacteria to those with disease states to improve their health?"

"We have more than 1,000 bacterial species in the gut, with different equilibria among people, adding to our individuality. Ultimately, we have to identify what's there, which abnormalities or imbalances may be associated with specific disorders and whether therapeutic manipulation may be possible. What can we accomplish with targeted functional foods, probiotics, ecobiotics and fecal transplant?"

Dr. Bouras mentioned case reports of beneficial fecal transplant effects involving patients with disorders including multiple sclerosis and Parkinson's disease. "We're just at the beginning stages of figuring out which diseases may be affected by alterations of the bacterial milieu.

"One could postulate a form of highly individualized medicine wherein you get both your personal human and microbial genome analyzed — what in your genome predisposes you to certain illnesses and what interactive role does your microbiome play? What are the treatments of the future that may help establish a healthier microbial balance?"

Dr. Bouras shared the answer to the question he's asked the most about this topic as well as a tip:

- **The question:** should you take probiotics? The use of probiotics has been proposed for numerous disorders as well as health maintenance. Although some studies show beneficial effects of probiotics, many have important methodologic limitations, and it can be difficult to assess significance or applicability. Further, the numerous available probiotic preparations are different in composition, dose and biologic activity; and research suggests strain-specific outcomes. One size does not fit all. So although there may be a rationale in certain conditions (such as antibiotic-associated diarrhea), restraint needs to be exercised before widely recommending them.
- **The tip:** "I try to avoid the use of antibiotics in my patients and my own family. Antibiotics significantly impact the microbial milieu, and studies suggest that frequent use of antibiotics in children can negatively impact their long-term health, including obesity rates." >>



David Soma, M.D.



Cara Prideaux, M.D.

David Soma, M.D.

(PD '11, PDCMR '12) Division of Community Pediatric and Adolescent Medicine
Mayo Clinic Rochester

Cara Prideaux, M.D.

(PMR '11) Department of Physical Medicine and Rehabilitation
Mayo Clinic Rochester

“Pediatric Concussions: What You Need to Know for Your Kids and Grandkids”

Dr. Soma said parents and guardians have three choices related to allowing children to participate in sports: allow full participation due to the value placed on the benefits and perceived minimal risks; allow participation in select sports with lower risk of injury; and avoid sports participation due to the perceived risks or lack of benefit in sports.

He shared that organized sports have been proven in multiple studies to provide benefits that cannot be gained with physical exercise alone. Among these are improved self-esteem, lower depression rates, improved teamwork and higher graduation rates.

Dr. Soma said that concussion risk exists in many sports, and one study from college athletes revealed that the sports with the highest rates of concussion are wrestling and ice hockey, followed by football and soccer. Women have higher concussion rates when they play similar sports as men, possibly due to factors such as higher and differences in neck strength and hormones.

On the topic of banning football or other contact sports, he said, “If we were to remove contact sports, we would be removing more than half of all high school sports participation. Sports create certain risks, but these risks exist in many activities outside of football.

“Sports provide value, and I encourage all parents to have their children participate in some organized sport or activity. We need to make participation decisions that best fit the individual child. We can work to improve

the safety of sports to minimize risk. As we let children enjoy the benefits of sports, we need to be mindful that concussions can occur, and if one is suspected, take appropriate action.”

Dr. Prideaux shared recommendations for appropriate action when concussion is suspected:

- Remove the person from play to allow for brain healing. The physical, cognitive emotional and behavioral symptoms of concussion typically improve within seven to 10 days in 80 to 90 percent of people. Factors that may prolong recovery are a younger age or history of concussion, depression or other mood disorder, learning disorder, attention deficit hyperactivity disorder or chronic headaches.
- Encourage relative physical and cognitive rest, with gradual reintroduction of activities.
- Once it is deemed that recovery has occurred, follow a protocol of gradual return-to-play.

She offered that rules changes may be helpful for the future, such as youth soccer recently disallowing athletes 10 years and younger from heading the ball. “Mayo Clinic sports medicine researchers have studied Fair Play (fairplayinternational.org) in youth hockey, and it has been found to reduce the number of injuries, including head injuries. Researchers are looking to expand this concept to other high-risk sports.”

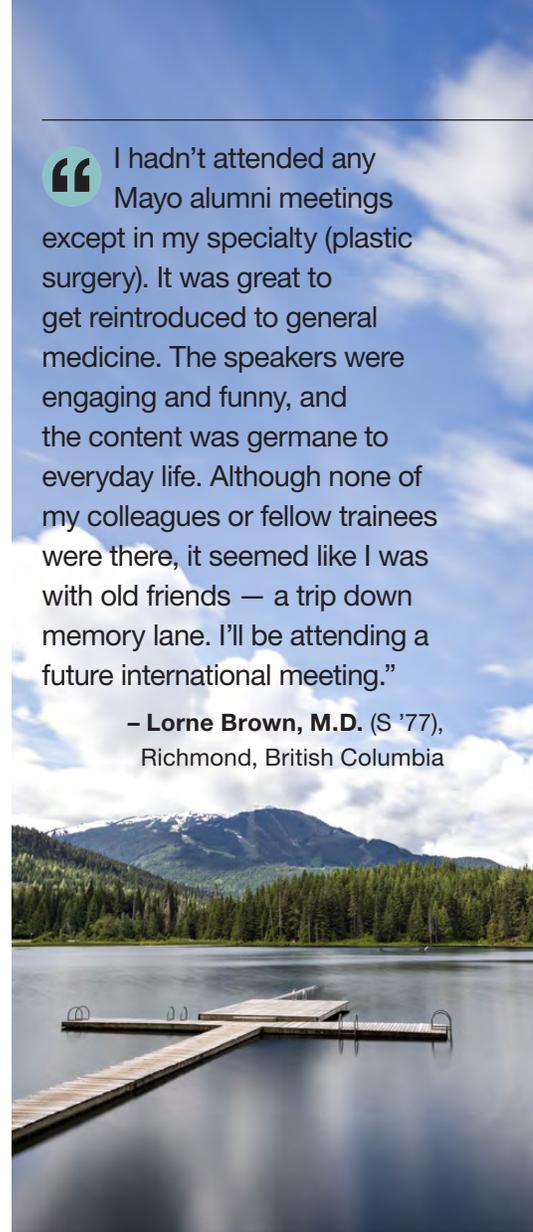
Dr. Prideaux also explained chronic traumatic encephalopathy (CTE), a much-discussed topic in sports. CTE is uncommon, thought to be caused by repeated head trauma and possibly even subconcussive hits, and involves progressive degeneration of the brain. Symptoms may include memory loss, impaired judgment, impulsive or erratic behavior, aggression, depression and progressive dementia. Diagnosis is based on postmortem autopsy.

“There is an assumption through the media that everyone who experiences multiple concussions will develop CTE, but we have much to learn about this condition,” she said. “We don’t know how common the pathologic changes in the brain are in those who have played contact sports, who is at risk or the clinical significance of these changes. It is likely some changes occur in those who suffer repeated blows to the head, but multiple other factors probably influence the actual development of clinical symptomatology from the pathologic changes.” >>



“ I hadn’t attended any Mayo alumni meetings except in my specialty (plastic surgery). It was great to get reintroduced to general medicine. The speakers were engaging and funny, and the content was germane to everyday life. Although none of my colleagues or fellow trainees were there, it seemed like I was with old friends — a trip down memory lane. I’ll be attending a future international meeting.”

– Lorne Brown, M.D. (S ’77),
Richmond, British Columbia



Gala dinner

Squamish Lil'wat Cultural Centre

The Squamish Lil'wat Cultural Centre was established in Whistler, British Columbia, to preserve and share the cultures of the Squamish and Lil'wat nations, which have long coexisted respectfully as neighbors and cultures grounded in rich, ancient traditions.

Guests were greeted by First Nation drummers in traditional regalia **1**, who also led the group to dinner with a traditional feast song. First Nations people are descendants of the original inhabitants of Canada. Entertainment was provided by the Musos Strings trio **2**, a section of the Vancouver Symphony Orchestra, and a performance by Alex Wells **3**, an international hoop dance champion from the Lil'wat Nation. ♦



Meeting primer

The Alumni Association hosts a major CME activity each year.

In odd-numbered years (in blue) that meeting is the Biennial Meeting of the Alumni Association, hosted at a Mayo Clinic location in the U.S. A primary goal is to reacquaint or familiarize alumni with Mayo Clinic's locations and activities in the U.S. The meeting also provides an opportunity for fellowship and reunion with former colleagues and mentors. The program has been compressed in recent years from a multiday, multitrack event to a single-day plenary program with surrounding social activities.

In even-numbered years the meeting is the Alumni Association International Program and tour, hosted at a location outside of the U.S. The focus is on current topics in medicine and science. The meeting retains the Mayo brothers' tradition of travel, with focused learning in the morning, and leisure with like-minded colleagues and mentors in the afternoon in nontraditional settings to foster innovative thinking.

2012 **International Meeting,**
Jerusalem, Israel,
Dan Jerusalem Hotel

2013 **Biennial Meeting,**
[Mayo Clinic Rochester](#)

2014 **International Meeting,**
Dublin, Ireland,
Four Seasons Hotel;
Edinburgh, Scotland,
Sheraton Grand Hotel and Spa

2015 **Biennial Meeting,**
[Mayo Clinic Arizona,](#)
[Westin Kierland Resort & Spa,](#)
[Scottsdale](#)

2016 **International Meeting,**
Whistler, British Columbia,
Canada, Fairmont Chateau
Whistler

2017 **Biennial Meeting,** [Mayo Clinic](#)
[Jacksonville, Ponte Vedra Inn](#)
[and Club, Ponte Vedra Beach](#)

2018 **International Meeting,**
location to be announced
this fall

2019 **Biennial Meeting,**
[Mayo Clinic Rochester](#)

Plan ahead — mark your calendar
for upcoming meetings.



“ I have attended several general surgery (Priestley Society) Mayo alumni meetings over the years but hadn't been to an all-specialty meeting until now. The perspective my medical colleagues added to issues presented was especially enlightening — and Whistler was spectacular!”

– **Gregory Vitas, M.D. (S '89),**
Specialists in General Surgery,
Maple Grove, Minnesota

MAYO CLINIC LANDS NATIONAL BIOBANK

The National Institutes of Health (NIH) awarded Mayo Clinic \$142 million during the next five years to serve as the home for the national Precision Medicine Initiative (PMI) Cohort Program biobank — one of the most ambitious research projects in history. The new biobank will be the largest in the world.

“Our existing 50,000-participant Mayo Clinic Biobank is similar in study design, biospecimen collection, processing and storage,” says Mine Cicek, Ph.D. (HSR '06), Department of Laboratory Medicine and Pathology at Mayo Clinic in Rochester, director of the Mayo Clinic Biospecimen Accessioning and Processing Core Laboratory and co-principal investigator of the PMI Biobank award. “The only difference is 50,000 versus 1 million participants.”

Dr. Cicek will administer the NIH award along with Stephen Thibodeau, Ph.D. (CLCH '81), Department of Laboratory Medicine and Pathology at Mayo Clinic in Rochester, the David F. and Margaret T. Grohne Director of the Mayo Clinic Biorepositories Program in the Center for Individualized Medicine, the William H. Donner Professor and co-principal investigator of the PMI biobank award.

Mayo Clinic showcased its biobank experience in applying for the grant.

“We knew we had the infrastructure and expertise to take on this project, but these grants are extremely competitive,” says Dr. Cicek. “We’re excited to have this tremendous opportunity to be involved in the development of an unprecedented national resource for researchers working to understand the factors that influence health and disease, and tailor prevention and treatment of illness.”

The NIH also awarded funding for these components of the PMI project:

- **Data and Research Support Center:** Vanderbilt University Medical Center (Nashville, Tennessee), working with the Broad Institute (Cambridge, Massachusetts) and Verily Life Sciences (Mountain View, California). This role involves acquiring, organizing and providing secure access to the database for research, supporting the data and analysis tools, helping to build a vibrant community of researchers and including citizen scientists.
- **Health Provider Organizations (HPOs):** Regional medical centers Columbia University Medical Center (New York City), Northwestern University (Chicago, Illinois), University of Arizona (Tucson) and University of Pittsburgh (Pennsylvania).
- **A network of regional and national medical centers, community health centers and medical centers operated by the Department of Veterans Affairs** will ensure participants represent the country’s diversity. The HPOs will engage their patients in the PMI Cohort Program, help build research protocols and plans, enroll interested individuals, and collect health data and biological specimens.
- **Participant Technologies Center:** Scripps Research Institute (San Diego, California) and Vibrent Health (Fairfax, Virginia). This role supports direct enrollment of participants and develops, tests, maintains and upgrades the project’s mobile applications to enroll, consent, collect data from and communicate with participants.



Stephen Thibodeau, Ph.D., and Mine Cicek, Ph.D., are co-principal investigators of the “unprecedented national resource for researchers.”

Overall, the PMI project will be responsible for enrolling 1 million or more U.S. adult and pediatric participations by 2020. The project will:

- Reflect the diversity of the U.S. population by including participants from diverse social, racial/ethnic and ancestral populations living in various geographies, social environments and economic circumstances and from all age groups and health statuses
- Contain information from lifestyle and health questionnaires, medication history, electronic health records, physical exams, environmental exposures and real-time physiology
- Contribute to better understanding of individual differences that contribute to health and disease
- Advance precision medicine

The biobank at Mayo Clinic will:

- Provide the infrastructure to store and curate more than 35 million biospecimens for a longitudinal research program
- Store the majority of the samples at Mayo Clinic in Rochester, with 20 to 25 percent stored at Mayo Clinic in Florida to protect the collection from a localized national disaster

The Precision Medicine Initiative was launched by President Barack Obama in 2015 “to bring us closer to curing diseases like cancer and diabetes, and to give all of us access to the personalized information we need to keep ourselves and our families healthier.” The PMI biobank is expected to be a major force in advancing precision medicine and contributing to research and improved health care.

Data from biological samples combined with information from digital technologies will help researchers examine individual differences in health and disease. Typically data are spread out among facilities and databases. Collecting and standardizing the information can slow down the research process. A coordinated biobank that safely and privately holds the information and samples facilitates timely research. >>





This is an extraordinary opportunity for Mayo to participate in and share our expertise with an important national research initiative.”

– Stephen Thibodeau, Ph.D.

Mayo components

Mayo Clinic will increase the size of its current Minnesota biobank by 25,000 square feet and its Florida biobank by 5,000 square feet, including advanced automation technology, state-of-the-art robotic freezers and additional personnel. Construction began in the summer and is anticipated to be complete by March 2017 in Minnesota and December 2016 in Florida.

Mayo Medical Laboratories (MML) also will participate in the PMI Cohort Program biobank. The national MML network covers all 50 states with more than 300 couriers and longstanding relationships with major logistics providers that ensure the shortest transit time possible for specimens. Today MML receives 35,000 to 40,000 specimens per day and performs 23 million tests per year.

“This is an extraordinary opportunity for Mayo to participate in and share our expertise with an important national research initiative,” says Dr. Thibodeau. “Our facilities are built to serve as a vital resource for storing and analyzing all biospecimens under the highest-level quality possible and to minimize loss, damage and contamination, with the ability to retrieve biospecimens effectively for research use.” ♦

What is precision medicine?

Precision medicine is a groundbreaking approach to disease prevention and treatment based on people’s individual differences in environment, genes and lifestyle. The Precision Medicine Initiative Cohort Program will lay the foundation for using this approach in clinical practice.

What are the goals?

The goal is to engage a group of 1 million or more U.S. research participants who will share biological samples, genetic data and diet/lifestyle information, all linked to their electronic health records. This data will allow researchers to develop more precise treatments for many diseases and conditions.

Pioneer a new model of research that emphasizes engaged research participants, responsible data sharing and privacy protection.

Why now?



We have a greater understanding of human genes.



People are more engaged in health care and research.



We have the tools to track health information and use large databases.



Research technologies have improved.

Adapted from a Precision Medicine Initiative Cohort Program infographic:
<https://www.nih.gov/precision-medicine-initiative-cohort-program/infographics>

Mayo Clinic's current biobanks

- The current Mayo Clinic Biobank in Rochester, established in 2009, contains 50,000 samples from healthy adult participants who have Mayo Clinic patient numbers. Samples include DNA, serum, plasma and aliquot of frozen white blood cells. Data on participants include elements from the electronic health record and patient-provided health and lifestyle information.
- Mayo Clinic in Florida also has a biobank, established in 2012.
- Mayo Clinic in Arizona's biobank was established in 2013 and is a collaboration with Arizona State University and Mountain Park Health Center in Phoenix. The Arizona biobank is made up of samples from the Latino population, which is underrepresented in research.

These biobanks assist internal and external investigators in obtaining normal samples to serve as controls for their patient populations.

➤ www.mayo.edu/research/centers-programs/mayo-clinic-biobank-for-researchers

Disease-specific biobanks

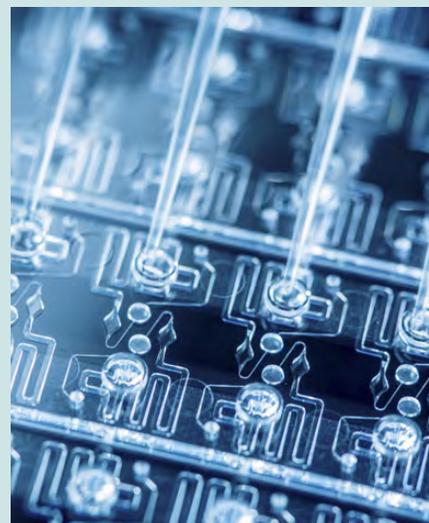
Mayo Clinic has a long history of biobanking. Many clinical subspecialties have collected biologic samples along with clinical information to study different diseases. Examples include almost all of the common cancers (breast, colon, lung, prostate, pancreatic, brain, leukemias and lymphomas), neurologic diseases (Alzheimer's, Parkinson's) and some cardiovascular disorders (cardiomyopathies, familial hyperlipidemias). Currently the Biospecimen Accessioning and Processing (BAP) Core Laboratory works with hundreds of investigators and manages more than 5 million samples on their behalf.

Mayo Clinic also is involved with other biobanks, which are processed and stored in the BAP lab. These biobanks belong to specific investigators and study teams.

- **Lymphoma Epidemiology of Outcomes (LEO) Cohort** — Involves eight U.S. centers including Mayo Clinic, University of Iowa (Iowa City), Emory University (Atlanta, Georgia),

University of Rochester (New York), University of Miami (Florida), MD Anderson Cancer Center (Houston, Texas), Weill Cornell Medicine (New York City) and Washington University in St. Louis (Missouri). The goal of the LEO Cohort is to uniformly identify, recruit and collect data and samples from 8,700 patients within six months of lymphoma diagnosis. Mayo Clinic is the data and sample coordinating center for the LEO Cohort.

- **Mayo Clinic Study of Aging** — The largest longitudinal, community-based epidemiologic study of mild cognitive impairment and Alzheimer's disease in the world. Since 2004 the Mayo Clinic Study of Aging has collected samples from 8,023 patients and banked more than 481,000 biospecimen aliquots (DNA, RNA, plasma, serum, buffy coat, platelet-poor plasma, blood mononuclear cells and cerebrospinal fluid). The BAP laboratory has been and continues to be responsible for all of the sample processing, storage and management needs of this project.



The background of the page is a deep purple color. It features several circular genomic maps, also known as Circos plots, arranged in a circular pattern. Each plot consists of multiple concentric rings. The outermost ring of each plot is a solid blue line. Inside this, there are several rings containing colorful data points and lines in shades of red, yellow, green, and blue. These points represent various genomic features or variations. The plots are slightly offset from each other, creating a sense of depth and complexity. The overall aesthetic is scientific and data-driven.

MAYO COMMITS TO NATIONAL MICROBIOME INITIATIVE

In May the White House Office of Science and Technology Policy, in collaboration with more than 100 institutions, announced a new National Microbiome Initiative to foster the integrated study of microbiomes across different ecosystems. Federal agencies involved in the initiative include the Department of Energy, NASA, National Institutes of Health, National Science Foundation and Department of Agriculture. External institutions include the Bill & Melinda Gates Foundation, the Juvenile Diabetes Research Foundation and many universities. And Mayo Clinic.

The Mayo Clinic Center for Individualized Medicine joined the National Microbiome Initiative by committing to open a \$1.4 million Microbiome Clinic.

Mayo's new clinic, planned for 2017, will focus on improving the care of the individual patient through knowledge of the human microbiome. The clinic will provide:

- Clinical services including Mayo's already-established fecal microbiota transplant program and new therapies emerging from clinical trials to treat and *Clostridium difficile*-related disorders and noninfectious diarrhea. New therapies include fecal transplant substitutes (pill forms with mixtures of bacteria) and preventive strategies for patients at higher risk of developing infections.
- Diagnostics including whole-genome sequencing, antibiotic-resistance profiling, metagenomic profiling, targeted environmental testing and 16S rRNA gene-based tests to individualize treatment of undiagnosed infections and conditions. These will help identify culprit bacteria in previously unidentified infections, determine appropriate antibiotic susceptibility in patients not responding to treatment, and

identify sources of community outbreaks and food-borne infections.

- Patient education including help navigating the complex options that promote health and wellness — diet, nutritional supplements and probiotic foods. Initially education will focus on diet, which has a significant influence on shaping the microbiome.

During the last decade Mayo Clinic has studied the role of the microbiome in conditions including *Clostridium difficile* infection, irritable bowel syndrome, inflammatory bowel disease, colorectal cancer and rheumatoid arthritis.

"The new clinic will allow us to use clinical-grade diagnostic tests and new therapies we've developed to transform patient care and improve outcomes," says Heidi Nelson, M.D. (CRS '88, S '89), director of Mayo's Microbiome Clinic, chair of the Department of Surgery, and the Fred C. Andersen Professor. "The Microbiome Clinic is an example of our commitment to translate research from our microbiome program into meaningful practice improving patient care."

The Microbiome Clinic team will include gastroenterologists and infectious disease specialists, a physician assistant, a dietitian and microbiome genetic counselors. ♦

Riddles of the microbiome

Mayo's Microbiome Clinic may answer questions about the relationship among the microbiome and health and disease including:

- *Can microbial communities in the colon be the cause for gluten sensitivity and irritable bowel syndrome?*
- *How do the colon organisms affect other parts of the body, such as joints?*
- *Can colon microbial metabolites be the reason that diet influences colon cancer development?*
- *Can genomic sequencing techniques help us identify organisms that cause vaginosis and reproductive health problems?*



Mayo Clinic Radio

25 years of on-air expertise

Sharing medical knowledge is part of the Mayo Clinic tradition dating back to Drs. Will and Charlie Mayo. But with thousands of experts spread across three campuses and the increasing complexity of lifesaving science, disseminating accurate information to the public hasn't become any simpler.

Enter Thomas Shives, M.D. (OR '79). A busy orthopedic surgeon by day, Dr. Shives has tirelessly pursued a secondary vocation for more than two decades as the host of Mayo's radio program, now called "Mayo Clinic Radio."

Dr. Shives' broadcasting experience at Mayo Clinic started in 1991 with "Healthline," which was sponsored by the Zumbro Valley Medical Society. The live call-in show featured Mayo Clinic physicians and aired every Saturday morning on KROC, a local Rochester station. The formula was solid enough to outlast name and location changes: interview a Mayo Clinic expert on a topic of interest and provide listeners with expert information straight from the source in easily understood language. After two decades "Healthline" became "Medical Edge Weekend" and now "Mayo Clinic Radio," bringing those same valuable fonts of knowledge into the digital age. The program is the longest-running weekly radio program in the history of Rochester radio.

"Mayo Clinic Radio" has been syndicated since 2015 and is now broadcast on 89 stations in 39 states. The hour-long program airs live in Rochester at 9 a.m. on Saturdays and can be downloaded as podcasts (<http://newsnetwork.mayoclinic.org/blogtag/podcast/>) — whole episodes or shorter segments catalogued by topic.

Change of venue

Mayo Clinic has constructed a studio in the Plummer Building, and the broadcast moved there this summer as it celebrated 25 years of being on the air.

"It's much easier for guests to run over to the Plummer Building during regular hours than to show up at the radio station on Saturday morning," Dr. Shives says of the new location. "We try to tape the show around the lunch hour to accommodate our experts' free time. The radio stations that broadcast the program can play it anytime they want."

From the topical to the perennial

Dr. Shives tries to keep the show topical — he recently interviewed Mayo experts about opioid addiction and the Zika virus — but has found many subjects of interest to listeners are perennial. Besides heart disease and high blood pressure, "Some of the topics people are most interested in are constipation, incontinence and

erectile dysfunction," he says.

"Older people are more interested in their health."

Dr. Shives estimates the majority of the show's listenership is older but strives to present topics of interest to young people, such as birth control, pregnancy and vaccination.

I think we're providing a valuable public service by sharing Mayo's expertise around North America, and Mayo has been gracious to allow me the time to do this."

— Thomas Shives, M.D.





Listeners can suggest topics and pose questions via email and Twitter.

Generous expertise

Dr. Shives says that Mayo Clinic physicians have been exceedingly generous with their time and expertise over the years, and he applauds their ability to interpret medical expertise for a lay audience: “Our doctors and other experts do a fabulous job because it’s what they talk to patients about every day. I try to put myself in the listeners’ shoes and keep it conversational and in layperson language. I think that’s a big reason the program has been successful for so long.”

Early fascination with radio

Radio and public speaking piqued Dr. Shives’ interest at a young age. “I’ve always had a love for and interest in radio,” he says. “My brother and I each had a crystal radio with an earpiece, and we used to listen to WHO Radio in Des Moines at night when we were going to sleep. Where I grew up in Newton, Iowa, we had a great speech and debate program. In high school I did a lot of original oratory and debate, and my brother was a national radio speaking champion.” >>



Thomas Shives, M.D., is joined by radio veteran Tracy McCray **1**, co-host of “Mayo Clinic Radio.” Jess (Dhaliwal) Prischmann, M.D. **2** (ENT 2010), was the co-host from 2007–2008 during her residency. She was a journalist during college and medical school. Today she’s a facial plastic and reconstructive surgeon in Edina, Minnesota.

Want to know if “Mayo Clinic Radio”
airs in your market?

Contact

mayoclinicradio@mayo.edu

Dr. Shives’ first foray into broadcasting, however, didn’t come until he was trying to find an outlet while convalescing from his own medical problem.

“In 1987 I had a cervical disc operated on and was unable to practice for three months,” he says. “Patience is not one of my virtues, so I had to find something to do. The owner of KROC is a friend of mine, so I went to his office and asked if I could give the news. It just so happened that they were shorthanded in the news department at the time, so I got the job. The program director and news director tutored me. I read the news for two months under an assumed name — T. Carter Steele. It probably helped that I didn’t want to be paid. While I was at KROC, several people said, ‘Why doesn’t Mayo have a radio program on health?’

“Then a few years later, the Zumbro Valley Medical Society approached me about hosting a medical talk show on the radio. I went to KROC, and they said, ‘When can you start?’ That first program evolved into the current ‘Mayo Clinic Radio.’”

Satisfaction in helping others

Dr. Shives says he gets satisfaction from hearing he’s made a difference in a listener’s life. “There are a lot of women with incontinence who didn’t realize they could

be helped and went to see an expert because of the show, people who recognized the symptoms

of a stroke in a loved one and were able to get them to the hospital, people who survived heart attacks because they knew what to do when the symptoms struck, people who had their cataracts removed when they learned how easy and successful the surgery is. My wife diagnosed her father’s coronary artery disease because of a segment on the show! I think we’re providing a valuable public service by sharing Mayo’s expertise around North America, and Mayo has been gracious to allow me the time to do this.” ♦

Award-winning host

Thomas Shives, M.D., has received awards for his broadcasting work including:



- Community Service Award, Zumbro Valley Medical Society, Minnesota Medical Association, 2008, 2005
- Public Service Award for longstanding and continuing service on behalf of the public and the Zumbro Valley Medical Society, Minnesota Medical Association, 2004
- Excellence in Women’s Health Research Journalism Award, Society of Women’s Health Research, 2004
- Physician Communicator of the Year Award for contributing to a better public understanding of medicine and health in the state of Minnesota, Minnesota Medical Association, 2002, 1993
- Champions of Health Award in recognition of outstanding efforts to improve community health, Blue Cross and Blue Shield of Minnesota, 2000
- Media Award, American Society of Anesthesiologists, 2000
- National Media Award, American College of Allergy, Asthma and Immunology, 1993



Co-hosts Thomas Shives, M.D. (left), and Tracy McCray interview Mayo’s Joseph Murray, M.D., Division of Gastroenterology and Hepatology.



On the shoulders of giants

'What would Dr. Woods do?'

Patricia Yugueros, M.D. (PLS '97, HAND '00, PRES '02), came to Mayo Clinic from balmy Cali, Colombia, for an elective rotation in 1993 during her last year of general surgery residency. She was assigned to John Woods, M.D., Ph.D. (S '66, PLS '68), a consultant in the Division of Plastic and Reconstructive Surgery. The three months they spent together formed the basis of a strong professional relationship and treasured friendship.

First to arrive, last to leave

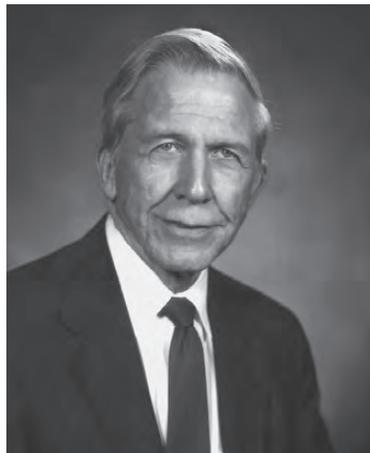
Although Dr. Woods told his plastic surgery residents and fellows to arrive at the hospital by 7 a.m., he arrived by 6:30. "I asked him why he came early, and he said he wanted to visit with his first patient before surgery. So I started coming in early, too. At the end of the day I stayed until he talked to the last patient's family. Spending that time gave me the chance to observe his bedside manner and see how he treats patients with compassion."

Halfway through the rotation, Dr. Yugueros' relentless questioning after rounds led Dr. Woods to offer to share his lecture notes with her.

"I'd read his many publications and wanted to learn as much as I could," she says. "He offered to meet with me on Saturday mornings and share his talks. For weeks we met and discussed parotid tumors, melanoma, hemangiomas and much more. I was his shadow for three months."

Hometown visit

At the end of the rotation, Dr. Yugueros asked if she could train at Mayo Clinic. Dr. Woods told her there wasn't a position available for an international trainee,



John Woods, M.D., Ph.D., in 1993.



Patricia Yugueros, M.D., in 1995.

but he offered a letter of recommendation. First he needed to observe her operating skills ... in Colombia. He offered a similar letter for her husband, Juan Sarmiento, M.D. (SR '96, PRES '98, S '00, S-GI '02), who'd completed an elective rotation in colorectal surgery at Mayo Clinic at the same time.

Several months later Dr. Woods spent two weeks in Colombia with the pair, collaborating on difficult cases. "We did reconstructive cases no one else in Cali was capable of doing," says Dr. Yugueros.

Generous support

She continued to pursue opportunities at Mayo Clinic and, when nothing else materialized, she offered to work in plastic surgery basic research without pay. She did that for a year while completing a master's degree in physiology at Mayo Clinic and publishing papers with Dr. Woods and others.

"I was trying to learn, publish and improve my C.V.," she says. "The opportunity to participate in conferences, write clinical papers, do research and have the privilege

of learning from plastic surgeons like Dr. Woods, Dr. P. G. Arnold (PLS '76) and Dr. Uldis Bite (S '90) at such a prestigious institution was the chance of a lifetime. Money has never been a priority for my husband and me. Getting the best possible training and becoming the best clinicians and surgeons we could was our lifelong ambition."

Her husband also did research that first year, without pay. "Before we left Colombia, we sold everything — our car, our wedding presents — to have money for that year," says Dr. Yugueros. "When we arrived in Minnesota, Dr. Wood helped us find an apartment and car and brought us cleaning supplies and a week's worth of food. He invited us out to dinner with him and his wife at least once a month and took us and our parents to dinner when they visited."

A year later Dr. Yugueros applied for a clinical fellowship at Mayo Clinic and received it, but it didn't start for another 18 months. Dr. Sarmiento — who'd completed his residency in Colombia — took a position as a preliminary intern at Mayo Clinic to generate income while his wife continued to conduct research without pay. During that time Dr. Woods retired.

"He continued to support us in every aspect of our lives. He was like a father to us," says Dr. Yugueros. "We consulted him about every decision we made."



Big influence

The couple continued at Mayo Clinic, completing fellowships and achieving board certification. They also battled infertility and conceived children with Mayo Clinic's in vitro fertilization assistance.

In 2003 the couple took positions at Emory University in Atlanta, Georgia. Today Dr. Yugueros is chief of plastic surgery at Emory Johns Creek Hospital and founder and CEO of Luna Plastic Surgery, both in Johns Creek, Georgia. Dr. Sarmiento is the W. Dean Warren Distinguished Chair of Surgery at Emory University School of Medicine and chief of Emory University Hospital's hepatopancreatic biliary surgery program. He also is the immediate past-president of the Mayo Clinic Alumni Association.

"I don't think we could have done anything we have without Dr. Woods being there for us," she says. "I see his influence in every single thing I do. He had huge compassion for his patients. He is smart and kind and loving."

During her second year of training at Mayo Clinic, Dr. Yugueros received the Mayo Brothers Distinguished Fellowship Award, and in her third year at Emory she received the Teacher of the Year award in the Division of Plastic Surgery. She says, "I owe those awards to Dr. Woods. I applied what I learned from him. The way he taught me, I passed that on to my students. The way he treated me, I treated them that way. He showed me the path to follow."

More than two decades after arriving at Mayo Clinic and shadowing this giant in plastic and reconstructive surgery, Dr. Yugueros is still guided by Dr. Woods.

"Every day when I face a difficult situation, I think, 'What would Dr. Woods do? What would he say to this patient or do in this case?' I spent so much time talking to him and learning from him as a physician, plastic surgeon and person that imagining his reaction helps to make things clear to me.

"Two young, naive physicians from a third-world country arrived in Rochester in the dead of winter and were helped by a caring mentor, teacher and friend. We had the willingness to listen and learn from him. We are what he made of us." ♦

Patricia Yugueros, M.D., and her husband Juan Sarmiento, M.D., with mentor and friend John Woods, M.D., Ph.D., and his wife, Janet.





WHERE ARE THEY Now?

A man among beasts Charles Thoen, D.V.M., Ph.D.

During his half-century-long career in veterinary medicine, Charles Thoen, D.V.M., Ph.D. (M '71), has worked with food-producing animals, companion animals, nonhuman primates, elk, buffalo and even elephants. Early in his career he was a veterinary medical epidemiologist for the United States Department of Agriculture (USDA). He later chaired the department of Veterinary Microbiology and Preventive Medicine at Iowa State University, International Union Against Tuberculosis and Lung Disease Scientific Committee on Tuberculosis in Animals, and World

Health Organization Committee on Animal Tuberculosis.

He's been a consultant to the Smithsonian Institution, National Institutes of Health, Centers for Disease Control and Prevention, Pan American Health Organization, National Aquarium in Baltimore, International Elephant Foundation, and agricultural departments in the United States and countries including Egypt, New Zealand, South Africa, Colombia and Serbia.

Dr. Thoen has served as president of the American Veterinary Epidemiology Society and was invited by the World Health Organization to provide content for its educational portal

on tuberculosis (TB) in animals and humans. In 2014 he received the Distinguished Research Alumnus award from the University of Minnesota College of Veterinary Medicine for his accomplishments on TB and clinically significant pathogenic mycobacteria. He's been an editor of seven textbooks on infectious disease that are used by scientists worldwide.

He credits his training at Mayo Clinic for providing him with research skills, and a childhood pet for sparking his lifelong interest in infectious diseases in animals and humans.

Dr. Thoen grew up on a farm in Harmony-Lanesboro, Minnesota. When his dog, Trixie, contracted an infectious disease and died, the 10-year-old boy wanted to learn more about what killed his pet. He talked to the local veterinarian and "was hooked," he says.

Dr. Thoen recently edited the third edition of *Zoonotic Tuberculosis: Mycobacterium bovis and Other Pathogenic Mycobacteria*,

He credits his training at Mayo Clinic for providing him with research skills, and a childhood pet for sparking his lifelong interest in infectious diseases in animals and humans.

a comprehensive review of the state-of-the-art control and elimination of infections caused by *Mycobacterium tuberculosis* complex in animals and humans.

Intermingling of the species

“Infectious diseases can be transmitted from animals to humans, and from humans back to animals,” says Dr. Thoen. TB in particular causes disease in humans, elephants and several nonhuman primates. He says this information is especially important because TB is a re-emerging disease in both humans and animals worldwide and is a risk when they intermingle.

“Advanced TB is highly contagious and a significant concern

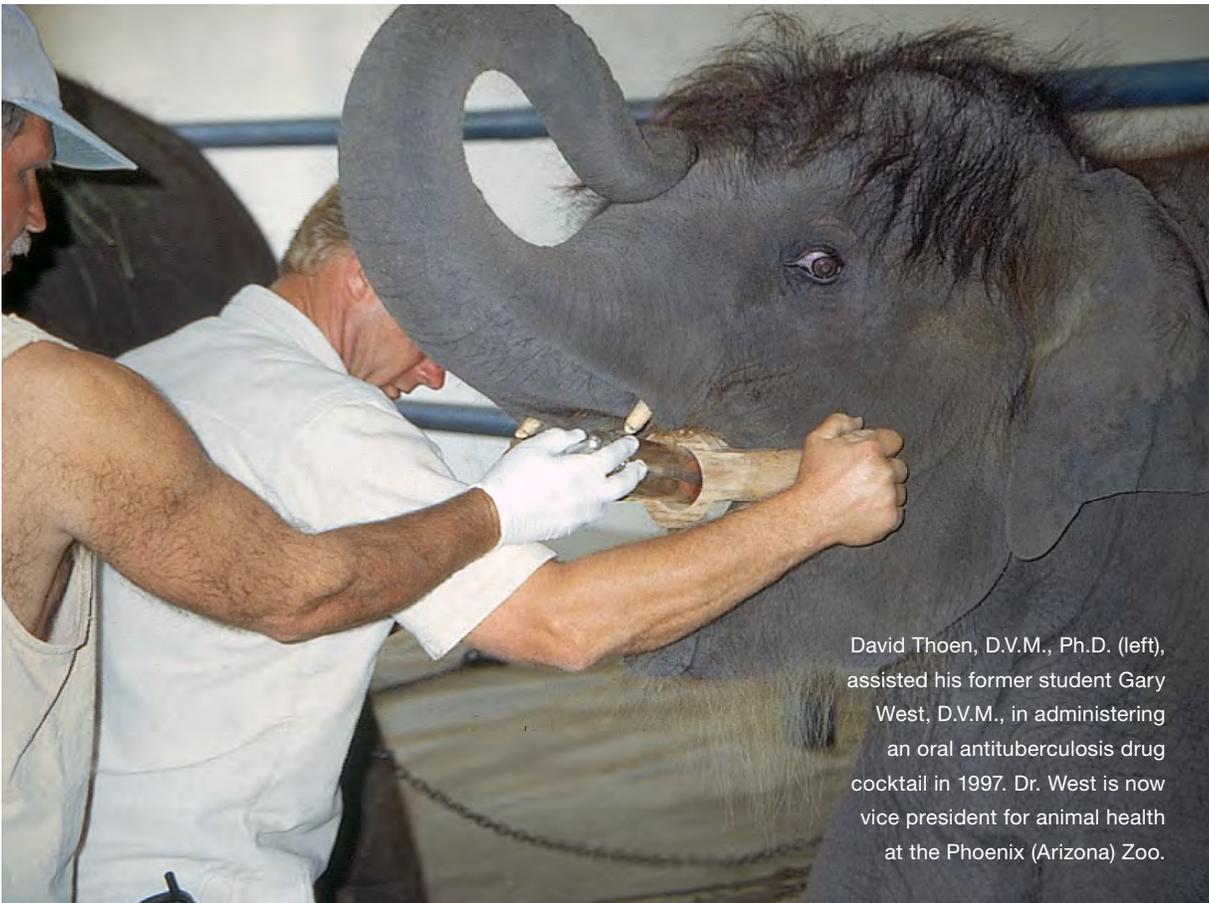
to public health officials,” says Dr. Thoen. “Molecular techniques can trace outbreaks, including genotyping the TB organisms to identify strains and determine if isolates from human patients are similar to those of animals they were exposed to — or vice versa. If the isolates are the same, we can suspect transmission from one species to another, which helps identify the source of infection.”

Employees at animal parks and animal training centers have contracted the disease from elephants and primates. TB isn’t common among U.S. cattle but does occur in cattle imported from Mexico, exposing domestic cattle to the disease.

“Suspected animals are tested, but they only shed the organism in advanced stages of disease, so tests have limitations,” he says. “Public health officials are very concerned about animal-to-human transmission. People who come in contact with elephants may be at risk of contracting TB. Infected animals that expel air in proximity to people can infect them. Some studies show that 13 percent of captive elephants are infected with TB.”

Elephant man

When TB was first diagnosed in captive elephants in 1996, Dr. Thoen worked with a national group of elephant owners and the USDA to set up guidelines for testing,



David Thoen, D.V.M., Ph.D. (left), assisted his former student Gary West, D.V.M., in administering an oral antituberculosis drug cocktail in 1997. Dr. West is now vice president for animal health at the Phoenix (Arizona) Zoo.



Tuberculosis doesn't know if it's in an animal or a human and doesn't care who it infects next. We need better diagnostic tests and procedures."

— Charles Thoen, D.V.M., Ph.D.



treatment and monitoring the disease. It was the start of 20 years of working with elephants. Some of his trainees became pioneers in the process of collecting samples for testing from the inside of the animals' trunks — similar to a sputum sample. His team also determined the drug treatment protocols for elephants infected with TB.

"Initially the drug is given orally in grape juice, but elephants quickly lose interest in it," he says. "We developed a suppository pack, which is now the standard treatment for uncooperative elephants."

Costly treatment — in dollars and death

Some strains of TB in both humans and animals are resistant to two or more first-line drugs, and others are resistant to multiple drugs. The cost of treating TB is considerable. According to Dr. Thoen, in humans it's \$20,000 for a normal strain of TB and \$135,000 to \$400,000 for drug-resistant strains, with no guarantee — drug-resistant cases are often fatal. Treating infected animals is just as costly — \$100,000 over 18 months for an elephant and as

much as \$400,000 if it is extensively drug-resistant.

"When an outbreak occurs in other animal populations, we don't treat the disease," says Dr. Thoen. "Instead, we remove the animals from the population and do follow-up tests for three and five or more years in those who were exposed."

Dr. Thoen points out that when TB occurs in developing countries, it's often not treated in humans, let alone animals, due to the high cost, which contributes to the spread of the disease. Some experts fear TB in animals could lead to the extinction of endangered species.

Dr. Thoen is an advocate for the One Health initiative and has authored content on its educational portal. One Health recognizes that human health, animal health and the environment are inextricably linked and encourages worldwide interdisciplinary collaboration in health care for humans, animals and the environment to defend the health and well-being of all species.

"Tuberculosis doesn't know if it's in an animal or a human and doesn't care who it infects next," he says. "We need better diagnostic tests and procedures." ♦

Charles Thoen, D.V.M., Ph.D. (M '71)

Professor, Veterinary
Microbiology and
Preventive Medicine
College of Veterinary Medicine
Iowa State University
Ames, Iowa

- Fellowship: Microbiology Research, Mayo Graduate School
- Graduate: Ph.D., Mayo Graduate School; D.V.M., University of Minnesota, St. Paul
- Undergraduate: University of Minnesota, Minneapolis
- Native of: Harmony—Lanesboro area, Minnesota

Mayo Clinic Center for Tuberculosis

Mayo Clinic experts provide consultation on complex tuberculosis (TB) cases to medical and public health professionals in an 11-state region to make sure cases are treated and managed properly to keep the disease from spreading.

In 2013 Mayo was designated a Regional Tuberculosis Training and Medical Consultation Center by the Centers for Disease Control and Prevention — one of five regional centers in the United States. Since then the Mayo Clinic Center for Tuberculosis has completed more than 1,000 consultations, serving Minnesota, Wisconsin, North and South Dakota, Ohio, Michigan, Indiana, Iowa, Illinois, Montana and Wyoming.

“We implement the Mayo Model of Care — integrated multispecialty care — and involve whichever of our experts are needed to provide the local physician or public health representative with the expertise necessary to treat the patient,” says Zelalem Temesgen, M.D. (INFD '95), executive director of the Mayo Clinic Center for Tuberculosis.

John Wilson, M.D. (I '97, INFD '00), Division of Infectious Diseases and program director of medical consultation for the TB center, says TB isn't as common as it used to be, so there's less medical and public health expertise throughout the country. “When TB does occur, the cases are often more complicated, including antibiotic resistance.”

Typical regional TB consultations might include:

- An outbreak of drug-resistant TB occurs in South Dakota, and the state's public health staff calls Mayo Clinic.
- A physician in Illinois wants advice on treating a patient who has TB along with hepatitis C.
- A TB patient in Michigan is having difficulty completing treatment due to the side effects of the medication, and his physician calls Mayo Clinic for advice about an alternate treatment plan.
- A provider in Montana has never seen a case of TB in medical training or practice, and calls Mayo Clinic for help diagnosing it.

A key component of Mayo's Regional Tuberculosis Center role is providing the region's TB professionals with training and educational tools. Mayo develops and



(From left) John Wilson, M.D., Zelalem Temesgen, M.D., and Stacey Rizza, M.D., lead the Mayo Clinic Center for Tuberculosis.

offers conferences, workshops, lectures, webinars, point-of-care apps and other tools for health care practitioners.

Some of Mayo's TB educational tools are shared nationally, including apps for treating patients with both TB and HIV, and treating drug-resistant TB. Mayo's team also created an online TB resource, Mayo Clinic Center for Tuberculosis Knowledge Base — a web-based platform with curated TB information for health care practitioners.

Stacey Rizza, M.D. (MED '95, I '98, INFD '01), associate executive director of the Mayo Clinic Center for Tuberculosis, says TB has dropped off the radar of most providers due to a decrease in cases in recent decades. “But more than 10,000 new cases were reported in the U.S. in 2011 and, globally, TB is the leading cause of death from infectious disease. We need to be aware of TB and treat and diagnose it quickly so we can rid our country of this disease.”

Mayo Clinic's history in tuberculosis research dates back to the first half of the 20th century, when Mayo physicians and scientists conducted the first clinical trials (animal studies) on the first successful TB drug. The first human to be prescribed the drug, streptomycin, also was at Mayo Clinic. ♦



TB has dropped off the radar of most providers due to a decrease in cases in recent decades.”

– Stacey Rizza, M.D.



Know your Board

Mayo Clinic Alumni Association Board of Directors

Provides leadership | Makes policy decisions | Decides strategic direction and vision



David Agerter, M.D.

(MED '79, FM '82)

Board Member, Executive Committee

- Department of Family Medicine, Mayo Clinic in Rochester, Mayo Clinic Health System in Austin
- Associate Professor of Family Medicine
- Residency: Family Medicine, Mayo School of Graduate Medical Education
- Medical School: Mayo Medical School, Rochester, Minnesota

- Undergraduate: Gustavus Adolphus College, St. Peter, Minnesota
- Native of: West Concord, Minnesota

Why did you decide to pursue medicine?

Growing up on a farm in rural southeastern Minnesota, I aspired to follow in my father's footsteps and become a farmer. My parents were adamant that I receive the college education they never had. Perhaps largely due to a childhood connected to nature and many hours spent outdoors with animals, I found my collegiate science courses particularly interesting. My desire to give back coupled with mentorship from my own family medicine physician led me toward a career in medicine.

Why did you train at Mayo Clinic?

I was always familiar with Mayo Clinic because when family members needed specialty care,

they went to Rochester. I have a strong connection to the area where I grew up. The opportunity to train at a world-class medical facility and stay connected to the place I consider home seemed like a natural fit.

What was your initial impression of Mayo Clinic?

As a medical student in rotations, I commonly saw the attending physician contact colleagues with questions or concerns about patients. The team approach was always emphasized, and they modeled the concept that no single person has all the answers. Mayo Clinic has a wealth of resources, and it was always strongly encouraged to use those resources and colleagues.

How does Mayo Clinic influence your practice?

I look at Mayo as a values-based organization. Every day I come to work wanting to do the best for every patient. This is what draws people here and keeps them here even though they have opportunities to go elsewhere.

Mayo pays attention to details, including the little things that make a difference — how you greet a patient, interact with colleagues and dress to show respect for our patients.



Mayo pays attention to details, including the little things that make a difference — how you greet a patient, interact with colleagues and dress to show respect for our patients.”

– David Agerter, M.D.

What valuable lesson have you learned at Mayo Clinic?

The most important thing is to listen to patients. They've taught me more than I've taught them — about life and facing challenges. Many patients who have end-stage disease put their families before themselves by asking us to focus on their family members to make sure they'll be OK.

What do you contribute to the Mayo Clinic Alumni Association?

I hope to work on projects of value and continue to make new relationships with those who have ties to Mayo Clinic. I enjoy reminiscing with fellow alumni and learning what aspects Mayo external alumni have taken to their organizations.

What do you do in your spare time?

I love spending time with my family and have a passion for sports. Recently much of my time has been spent with my first grandson, who lives in Colorado. My wife and I have four grown children. Traveling keeps us busy.

What would people be surprised to know about you?

I can play the Alpine horn. My father's nationality was Swiss, and I played events and festivals in an Alpine horn quartet from age 10 to my early 30s. I still have my horn, which is about 12 feet long.



Mayo Clinic is a dream destination for any trainee seeking an academic career. Its section of cardiovascular surgery, with its well-known and accomplished faculty, was a magnet for me.”

– Sertaç Çiçek M.D.



Sertaç Çiçek, M.D.

(CS '97)

Board Member

- Director, Center for Heart and Vascular Care, Professor of Cardiovascular Surgery, Anadolu Medical Center, Gebze, Kocaeli, Turkey
- Fellowship: Pediatric Cardiothoracic Surgery and Transplantation, University of Southern California — Children's Hospital Los Angeles; Cardiovascular Surgery and Cardiopulmonary Transplantation, Mayo School of Graduate Medical Education, Rochester, Minnesota; Cardiovascular Surgery, Texas Heart Institute, Houston
- Residency: Cardiovascular Surgery, GATA Gülhane School of Medicine and TYIH (Türkiye Yüksek İhtisas Hastanesi), Ankara, Turkey
- Medical School: Ankara University Faculty of Medicine,

GATA Gülhane Faculty of Medicine, Ankara

- Native of: Ankara, Turkey

Why did you decide to pursue medicine?

My older brother died of fulminant hepatitis. There wasn't much treatment available at the time. That inspired me to want to pursue medicine. My interest in cardiovascular surgery, in particular, started when I was only 6 years old and the first human heart transplant occurred.

Why did you train at Mayo Clinic?

Mayo Clinic is a dream destination for any trainee seeking an academic career. Its section of cardiovascular surgery, with its well-known and accomplished faculty, was a magnet for me.

What was your initial impression of Mayo Clinic?

My first visit was for my interview. Dr. Gordon Danielson (CS '67) was the first consultant I interviewed with. I was very impressed with how much time he spent with a young candidate as well as with the teamwork I observed and how things were organized in advanced.

How does Mayo Clinic influence your practice?

Mayo helped me create my future career in many ways. I learned

how integrative, comprehensive medicine should be practiced and how to be a team player. I learned not only how to be a good surgeon but also how a physician should behave.

As a magnet for the best trainees from all over the world, Mayo provided me with best and long-lasting friends around the globe.

What valuable lesson have you learned at Mayo Clinic?

I learned dedication to excellence, the importance of communication and multidisciplinary practice, and the core value — the needs of the patient come first.

What do you contribute to the Mayo Clinic Alumni Association?

I work to develop stronger ties and increase the awareness for international alumni.

What do you do in your spare time?

I like photography, travel and political history. ♦



John Loftus, M.D.

(MED '89, S '94, VASS '95)

Board Member

- Bay Area Surgical Specialists, Napa, California
- Fellowship: Vascular Surgery, Mayo School of Graduate Medical Education; Endovascular Surgery, Stanford University School of Medicine, Stanford, California
- Residency: General Surgery, Mayo School of Graduate Medical Education
- Medical School: Mayo Medical School, Rochester, Minnesota
- Undergraduate: University of California, Los Angeles (UCLA)
- Native of: Iowa City, Iowa



Patients recognize the institution with its worldwide reputation as a premier medical center. They seem to appreciate that I trained there. I strive to employ Mayo Clinic ideals in my practice.”

– John Loftus, M.D.

Why did you decide to pursue medicine?

During college I worked as an athletic trainer. That experience sparked my interest in medical school.

Why did you train at Mayo Clinic?

I grew up in California and was unsure what to expect of Minnesota and Rochester during the medical school interview process. I was extremely impressed with Mayo Clinic and the people I interacted with. The small class size and small town also influenced my decision.

A world-class medical training opportunity in a small-town setting felt like a good fit for me.

How does Mayo Clinic influence your practice?

Patients recognize the institution with its worldwide reputation as a premier medical center. They seem to appreciate that I trained there. I strive to employ Mayo Clinic ideals in my practice.

What do you contribute to the Mayo Clinic Alumni Association?

I bring the perspective of a West Coast private practice surgeon to complement those who continue in academic or large practice environments.

What do you do in your spare time?

I enjoy golf and other outdoor activities.

What would people be surprised to know about you?

I finished my first Napa Valley Marathon the day before my 52nd birthday. ♦

Mayo Update

Discovery Square bioresearch campus in Rochester takes shape

Mayo Clinic has begun the process of creating Discovery Square, a bioresearch campus in downtown Rochester that will bring together physicians, researchers, scientists and entrepreneurs to address unmet patient needs with scientific innovation. Discovery Square will include Mayo and other private businesses. This project is a milestone of Destination Medical Center (dmc.mn), the largest public-private partnership in Minnesota history and one of the largest economic development initiatives in the U.S.

In September Mayo selected the real estate development firm M.A. Mortenson of Minneapolis to expand its Rochester, Minnesota, campus. More than 2 million square feet for research, commercial and product development space will be added during the next 20 years on Mayo Clinic-owned land. This is in addition to Mayo's current research footprint in Rochester of 1.3 million square feet.

"There is no better way to stimulate innovation than through collaboration, which has been part of the Mayo culture for 150 years," says John Noseworthy, M.D. (N '90), Mayo Clinic president and CEO. "We look forward to welcoming businesses, medical innovators and researchers from around the world to Discovery Square to work together and accelerate advances in bioscience, research, education and technology for health and wellness."

Construction is planned to begin in 2017, with the first of several Discovery Square buildings on a six-block area anticipated for completion within two years.

Mayo provides cancer care at St. Vincent's HealthCare in Florida

Mayo Clinic in Florida is collaborating with St. Vincent's HealthCare to bring Mayo's cancer services directly to St. Vincent's patients. Mayo physicians will staff a new 11,500-square-foot medical suite on St. Vincent's Riverside campus in Jacksonville, which was built with Mayo Clinic's design input. St. Vincent's provides the remaining clinical and administrative responsibilities.

The cancer services include medical oncology, infusion for chemotherapy and multidisciplinary disease-specialized care.

The facility, which opens in late October 2016 and is about 20 miles from Mayo's Jacksonville campus:

- Improves access for cancer patients who may not be able to go to Mayo Clinic in Florida due to distance or insurance
- Brings the Mayo Model of Care to St. Vincent's patients in the Riverside community
- Allows seamless care for patients with complex needs who may require more advanced care at Mayo Clinic
- Brings new clinical trials and medications to the community setting

"This agreement enables us to bring the highest-quality cancer care to even more patients in our area," says Gianrico Farrugia, M.D. (I' 91, GI '94), vice president of Mayo Clinic and CEO of Mayo Clinic in Florida. "Both institutions are important parts of the fabric of this community. By joining forces, we will strengthen the delivery and quality of cancer care in this region."

American Hospital Dubai joins Mayo Clinic Care Network

The Mayo Clinic Care Network has grown with the addition of the American Hospital Dubai — the first health care organization in the Middle East to join the group. The Mayo Clinic Care Network is a network of health care providers committed to better serving patients and their families through collaboration.

The agreement between the two organizations gives American Hospital Dubai access to the latest Mayo Clinic knowledge and promotes collaboration among physicians to benefit patients. Services and products available to network members include eConsults, AskMayoExpert database for point-of-care reference, health care consulting and eTumor Board conferences. Through shared resources, more patients can get answers to complex medical questions while staying close to home.

American Hospital Dubai's mission is to provide U.S. standards of health care in Dubai, the United Arab Emirates and surrounding Gulf states. The 240-bed hospital was the first private institution in the Middle East to be accredited by The Joint Commission International. Physicians at the hospital are North American board-certified or from equivalent Western training programs.

The Mayo Clinic Care Network has more than 35 independent member organizations in the U.S., Mexico, Puerto Rico, Singapore and Dubai.

➔ mayoclinic.org/about-mayo-clinic/care-network/members



Mayo Clinic launches initiative to promote collaboration among Israeli start-ups and Mayo innovators

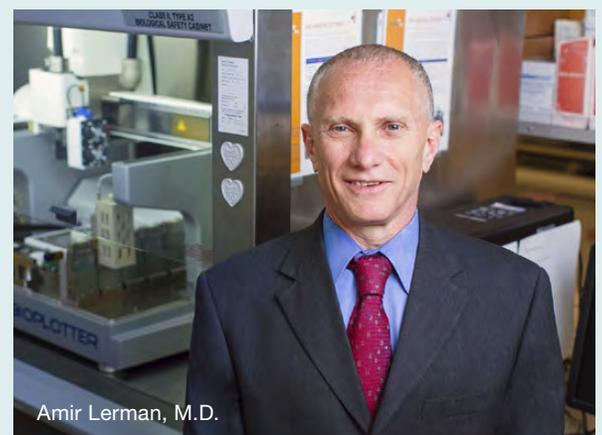
Mayo Clinic has launched the Israeli Startup Initiative to encourage collaboration among Israeli health care start-up companies and Mayo, and to accelerate medical innovations for the benefit of patients everywhere.

The Mayo Clinic Israeli Startup Initiative introduces Israeli health care technology to the U.S. through outreach and collaboration among physicians and scientists. The program is technology- and development-stage agnostic — any health care technology at any development stage could benefit from the initiative.

Amir Lerman, M.D. (I '89, CV '91), Division of Cardiovascular Diseases at Mayo Clinic in Rochester, is medical director of the Mayo Clinic Israeli Startup Initiative. The initiative is managed by Mayo Clinic Ventures, the commercialization office of Mayo Clinic.

According to James Rogers, chair of Mayo Clinic Ventures, Israel has been at the leading edge of life sciences and biomedical technology and represents one of the most vibrant innovation communities in the world.

The initiative will fund sponsored research and codevelopment activities among Mayo Clinic and Israeli start-ups that demonstrate innovation and commercial potential. Health care startup companies with primary business operations are eligible to apply. Initial funding has been provided by Paul and Elisabeth Merage of the Merage Institute, a nonprofit organization dedicated to training Israeli tech entrepreneurs and facilitating their U.S. collaborations.



Amir Lerman, M.D.

Mayo collaborates with Transplant Genomics Inc. on immunosuppression tests

The Mayo Clinic Center for Individualized Medicine is collaborating with Transplant Genomics Inc. (TGI) — a molecular diagnostics company — to develop, validate and commercialize diagnostic tests for enabling personalized immunosuppression for solid organ transplant recipients.

The multiyear collaboration includes:

- Assessment of TGI's TruGraf test for renal transplant monitoring
- Mayo Clinic investment in TGI
- Codevelopment of tests and technologies for additional targets including exploratory studies in heart and liver transplantation

TruGraf's ability to detect early transplant rejection in patients with stable kidney transplant function will offer physicians a tool to help provide the appropriate levels of immunosuppressive therapy.

"Mayo's research in this area is focused on improving long-term kidney graft survival so our patients can lead healthier lives," says Mark Stegall, M.D. (TRANS '98), Division of Transplant Surgery and the James C. Masson Professor of Surgery at Mayo Clinic in Rochester. "Genomic analysis of blood can

reveal early signs of rejection in transplanted kidneys. The potential clinical use is to monitor for rejection more frequently than is possible with surveillance biopsies and to individualize immunosuppression in transplant recipients."



Mark Stegall, M.D.

Physicians and researchers are participating at Mayo Clinic campuses in Arizona, Florida and Rochester. Principal investigators include Dr. Stegall; Raymond Heilman, M.D. (NEPH '85), chair, Division of Nephrology, Mayo Clinic in Arizona; and Martin Mai, M.D. (HYT '01), chair, Division of Transplant Medicine, Mayo Clinic in Florida.

Bim may be key to effectiveness of immunotherapy for metastatic melanoma

A protein called Bim may reveal which patients can be successfully treated for metastatic melanoma with immunotherapy, according to the results of a study led by Haidong Dong, M.D., Ph.D. (IMM '01), Department of Urology, and Roxana Dronca, M.D. (HEMO '10), Department of Oncology — both at Mayo Clinic in Rochester.

Immunotherapy can treat metastatic melanoma by blocking the activity of a molecule called PD-1 that prevents the immune system from attacking cancer cells. But only a fraction of patients can sustain the effect long term. Until now physicians had no way to predict which patients would benefit from the treatment.

Dr. Dronca and her colleagues discovered a correlation between patients for whom immunotherapy was an effective treatment and those who had high levels of Bim in their blood, a downstream signifier of PD-1 interaction. Not only is testing for Bim easier — a simple blood draw — than the repeated invasive tissue biopsies currently used to gauge the treatment's effectiveness, but also patients unlikely to benefit from immunotherapy can be spared time, cost and unnecessary exposure to toxicity.

This potential discovery of a way to predict a patient's immunotherapy response could help inform clinical decision-making. The study was published in *JCI Insight*.

Mayo Clinic team awarded \$7 million for migraine research

A Mayo Clinic research team led by Todd Schwedt, M.D. (HEAD '06), and David Dodick, M.D. (I-1 '91, N '94), Department of Neurology at Mayo Clinic in Arizona, has been approved for \$7 million in funding from the Patient-Centered Outcomes Research Institute to study migraine treatment strategies.

The five-year study, beginning later this year, will compare two commonly used treatment strategies for patients who have chronic migraine with medication overuse in an aim to determine the optimal treatment approach.

According to some researchers, about half of chronic migraine sufferers overuse medication — prescription and over-the-counter — to treat their condition, which can lead to more frequent migraines and migraines that are less responsive to treatment.

Mayo Clinic's study will compare the effects of two approaches:

- Immediate discontinuation of the overused medication (going cold turkey) plus treatment with migraine prophylactic therapy
- Migraine prophylactic therapy without immediate discontinuation of the overused medication

The 1,280 patients in the study will be enrolled from all Mayo campuses and 30 sites across the country.

[mayo.edu/research/clinical-trials](https://www.mayo.edu/research/clinical-trials)

Mayo Clinic first to implant device to treat fecal incontinence

Mayo Clinic in Florida is the first to offer treatment for fecal incontinence with an implanted device. Several patients have been implanted with the Fenix Continence Restoration System, a small band of interlinked magnetic titanium beads on a titanium string. The device mimics the function of the anal sphincter.

The Food and Drug Administration approved the device under a humanitarian device exemption, which requires approval for patient use by a hospital's institutional review board (IRB). Mayo Clinic's IRB was the first and, as yet, only center to approve use of the device.

The operation to implant the device lasts about 45 minutes and requires an overnight hospital stay. When the system is implanted, the string of magnetic titanium beads is placed around the anal canal in the closed position. Increased intra-abdominal pressure opens the beads to allow for stool passage.

Fecal incontinence affects 20 percent of women older than 45. Traditionally, the only option for patients who haven't responded to less invasive treatment has been colostomy.

Thomas Gonwa, M.D., receives Lifetime Achievement Award from American Society of Transplantation

Thomas Gonwa, M.D. (HYT '01), the Jorge and Leslie Bacardi Associate Director, Center for Regenerative Medicine at Mayo Clinic in Florida, received the Lifetime Achievement Award from the American Society of Transplantation (AST). The award recognizes a senior investigator whose work has advanced the field of transplantation.

Dr. Gonwa helped build the transplant program at Mayo Clinic in Florida, which has done more than

5,600 solid organ transplants. He was chair of the Department of Transplantation from 2006 to 2015. Dr. Gonwa is best known for his work on chronic kidney disease in patients having liver transplantation.

Dr. Gonwa is the first Mayo Clinic recipient of the AST award since it was established in 1995.



Mayo adds UV light-emitting disinfectant robot to fight C-diff

Earlier this year Mayo Clinic began using robot disinfecting devices in hospital rooms to reduce hospital-acquired *Clostridium difficile* (C-diff) bacteria infection.

Two years ago Mayo Clinic participated in a quality improvement project with The Joint Commission Center for Transforming Healthcare, the Centers for Disease Control and Prevention, and five health care systems nationwide. In a six-month pilot project, Mayo used robots for supplemental hospital room disinfecting and realized a 30 percent reduction in C-diff infections on units disinfected with the robots compared with the units that did not have extra disinfection.

C-diff spores are resistant to routine hospital disinfectants and require extra disinfecting measures. The robots work by emitting pulses of ultraviolet (UV) light that kill C-diff spores on exposed surfaces.

After the initial project, Mayo Clinic in Rochester acquired 10 robots to supplement normal disinfecting practices. The robots go through three five-minute cycles in different parts of the patient room after the patient is dismissed from the room and housekeeping has cleaned and disinfected the room. Using the robots adds about 25 minutes to the time needed to turn over a room for the next patient. The robots are being used on units with high C-diff rates at the Mayo Clinic Hospital Saint Marys and Methodist campuses. Mayo Clinic in Arizona and Florida and Mayo Clinic Health System sites are investigating using similar technology for C-diff reduction.



In the United States, C-diff is one of the most common infections patients can acquire at a health care facility. The average increased length of stay for a person with C-diff is three days, making the extra cleaning time worthwhile, according to Priya Sampathkumar, M.D. (CCM-I '97, INF'D '99), chair of Mayo Clinic's Infection Control Committee on the Rochester campus.

Obituaries

Maurice Albin, M.D. (ANES '62),
died July 2, 2016.

Joseph Sippe, M.D. (OPH '73),
died June 7, 2016.

[alumniassociation.mayo.edu/
people](http://alumniassociation.mayo.edu/people) for complete obituaries and
alumni news

John Arnold, M.D. (I '59),
died May 25, 2016.

Lewis Woolner, M.D. (PATH '48),
died June 13, 2016.

Robert Rynearson Sr., M.D. (P '62),
died June 24, 2016.



SAVE THE DATE

Mayo Clinic Alumni Association 70th Biennial Meeting Oct. 5–7, 2017

CME program: Mayo Clinic, Jacksonville, Florida
Conference hotel: Ponte Vedra Inn and Club, Ponte Vedra Beach, Florida

Mayo Clinic Alumni magazine is published quarterly and mailed free of charge to physicians, scientists and medical educators who studied and/or trained at Mayo Clinic, and to Mayo consulting staff. The magazine reports on Mayo Clinic alumni, staff and students, and informs readers about newsworthy activities throughout Mayo Clinic.

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Mayo Clinic is committed to creating and sustaining an environment that respects and supports diversity in staff and patient populations.

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Mayo ranked No. 1 by *U.S. News & World Report*

Mayo Clinic was ranked No. 1 in the nation by *U.S. News & World Report* in its recently released 27th annual Best Hospitals issue.

- No. 1 overall and in eight of 12 specialties — more than any other provider
 - Diabetes and endocrinology
 - Gastroenterology and GI surgery
 - Geriatrics
 - Gynecology
 - Nephrology
 - Neurology and neurosurgery
 - Pulmonology
 - Urology
- No. 2 in three specialties
 - Cardiology and heart surgery
 - Ear, nose and throat
 - Orthopedics
- No. 3 in one specialty
 - Cancer care
- No. 1 in Minnesota and Arizona and tied for No. 1 in Florida
- High Performing (the top designation) in all nine procedures and conditions for Mayo Clinic Hospital — Rochester, one of fewer than 70 institutions out of almost 4,500 to achieve that ranking
 - Abdominal aortic aneurysm repair
 - Aortic valve surgery
 - Chronic obstructive pulmonary disease (COPD)
 - Colon cancer surgery
 - Congestive heart failure
 - Heart bypass surgery
 - Hip replacement
 - Knee replacement
 - Lung cancer surgery