The Cleveland Clinic Alumni Association's Board of Directors routinely invites colleagues from across the institution to brief them on important and interesting developments in their fields. The following is a summary of the presentations made before the Board's seasonal meeting in March.



"I Have These Postcards"

Randy Geise

Sr. Healthcare Facility Planner, Historical Presentation

For a long time, Randy Geise has been awed not only by the majesty but also the utility of buildings, particularly those of Cleveland Clinic's main campus. He's made this pursuit his private project.

Some years ago, based perhaps as much on nostalgia as interest, he began collecting postcards and blueprints of the main campus structures.

"It's amazing what you can find on eBay," he told Alumni Board members. And soon, he was producing from his coat pocket early shots of the first buildings Cleveland Clinic ever



constructed. It didn't take long for Board members to join in the reminiscences.

"Hey, that's the garage where I used to park," one Board member said. "I never knew the operating rooms were located there," said another. It was apparent that Mr. Geise was enjoying sharing those memories with others, as he often does. Because, as he sees it, in order to appreciate how far Cleveland Clinic has come, it's good to see how it all began.



Legal Complexities of Cleveland Clinic's Growth

David W. Rowan, Esq. Chief Legal Officer Chief Governance Officer and Secretary

With Cleveland Clinic's continuing expansion, both nationally and internationally, the legal aspects of its operation also have expanded and become increasingly complex. Dealing with those issues, from healthcare regulatory law to many other kinds of challenges facing a large, multinational employer, is the job of David Rowan and his team of 40 lawyers, 32 paralegals and 25 assistants.

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"With our international expansion, we address the regulatory challenges of doing business in the UAE and England," Mr. Rowan said. "We must deal with questions concerning structure, intellectual property, employment and immigration, insurance, regulatory compliance and tax law. Our job is to assist in protecting the reputation of Cleveland Clinic and its commitment to doing the right thing."

The Law Department is organized by practice areas, including Litigation, Corporate, Transactions, International, IT, Nonprofit and Reimbursement, Real Estate, Commercialization, HR, Hospital Ops, Regulatory and Compliance, and Research. Its attorney liaison program corresponds to clinical institutes and business areas. The department also serves Cleveland Clinic Florida, the regional hospitals and Akron General, with a General Counsel for each location. The Law Department is headed by Mr. Rowan, who is assisted by four Deputy Chief Legal Officers.

The Changing Dynamics of Healthcare

Adam L. Myers, MD (Staff'18) Chief, Population Health Director, Cleveland Clinic Community Care

Today's healthcare picture is one of chaos seeking definition, said Adam L. Myers, MD. "Nearly every regulatory change, payment change, or credentialing requirement is a response to suboptimal results in one area or another. We have finite resources and infinite perceived needs. The picture is clearly unsustainable. We have peered over the cliff for years while bending our cost curve and struggling with quality outcomes measurement. But have we achieved the clinical outcomes

"I say we should deliver the care that is needed, desired, justified and prioritized. And it must be delivered safely, reliably and affordably." expected?"

He said that he believes success is built on relationships, collaboration and nimbleness. "We already know we need to enhance the patient experience, improve population health, reduce cost and improve the work life of providers. But how?

I say we should deliver the care that is needed, desired, justified and prioritized. And it must be delivered safely, reliably and affordably." Patients want to be heard and understood, he added, as well as share in decision-making and be cared for by a team that communicates well with one another.

"Caregivers want meaningful work and the authority they need to accomplish it," he said. "I believe this can best be accomplished through enlarged, effective teams, all working together to address people's needs. We are redesigning both the care team and the care model to deliver high-value care to the greatest number of people feasible. Toward these ends, we need to focus on improving clinical quality and safety, health and wellbeing, the patient and caregiver experience, and delivering better outcomes at a lower cost while increasing access to Cleveland Clinic."

Transgender Program

- Housed in the Center for LGBT+ Care at the Lakewood Family Health Center
- Center opened in spring 2016
- We currently have 992 transgender patients (each year we have doubled our numbers)
 - Marketing strategies, presence in the community
 - Absorption of the MetroHealth PRIDE Clinic
 - National and international recognition

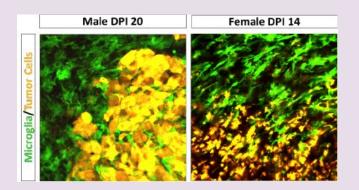
Cleveland Clinic

The Growth of Transgender Surgery, Medicine

Cecile Ferrando (Unger), MD (UG/PS'15) Associate Program Director, Female Pelvic Medicine and Reconstructive Surgery Fellowship Director, Cleveland Clinic's Transgender Surgery and Medicine Program

It is hard for Cecile Ferrando, MD, to realize how far both she and Cleveland Clinic have come in the past two years toward establishing the organization's Transgender Surgery and Medicine Program, part of its Center for LGBT Care. From humble beginnings just over two years ago, the center has seen increasing demand, with the number of patients doubling each year. Currently, it treats 992 transgender patients.

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Exploring Malignant Brain Tumors

Justin Durla Lathia (RES/SCB'09) Associate Professor of Molecular Medicine Cleveland Clinic Lerner College of Medicine Vice-Chair, Department of Cardiovascular and Metabolic Sciences

Our main interests are interrogating cellular interactions in the tumor microenvironment and examining communication mechanisms used by cancer stem cells to promote their maintenance. Currently, our work focuses on malignant brain tumors, but our technology and interests can be applied to many other tumor types.

Projects in our laboratory involve revealing the mechanisms though which cancer stem cells interact with the surrounding extracellular matrix, how they directly communicate with one another via intracellular channels, and how they interact with the immune system to create an immune-suppressive microenvironment. These laboratory-based studies conducted in close collaboration with our clinical team make use of patient samples and have resulted in an ongoing Phase 1 clinical trial. Recent work in the lab evaluates these mechanisms in the context of sex differences, with male and female tumors appearing to have different tumor micro-environmental interactions.

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In addition to establishing a presence within the community, the center has earned a national and international reputation for its work. Its Adult Program consists of primary care, psychiatric care, and medical and surgical transition care. Program expansion over the last year has included additional primary care, social work, a bioethicist, spiritual and fertility care, a subspecialist referral team, mental health assistance in the Cleveland community, pelvic floor physical therapy, and a comprehensive pediatric team.

Awka, Nigeria



Population 301, 657 Capital of Anambra State Economy primarily government

and university employees

Taking Laparoscopic Surgery to Nigeria

Charlotte Horne, MD, PGY 5, General Surgery Michener Award Recipient

This year's Michener Award recipient is Charlotte Horne, MD, PGY 5, for her work in Nigeria, the most populous country in Africa. The annual award honors individuals who have made outstanding contributions to leadership development, the medical humanities and the arts.

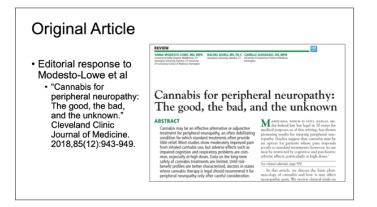
Dr. Horne was part of a sponsored mission team to introduce and assist with laparoscopic surgery in a large city in the medically underserved nation of 188 million people.

"While Nigeria is an emerging economic power, the average life expectancy is still only 52, the infant mortality rate is high, and only 50 percent of the country has access to appropriate sanitation," Dr. Horne said. The mission's goals included supplying a hospital in Awka (population 300,000) with basic laparoscopy equipment, teaching local surgeons how to perform this surgery and training operative personnel on the use of instruments and sterile

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processing. The results of the visit exceeded expectations, Dr. Horne reported. Eleven surgeries were performed in seven days, with zero post-operative complications. All patients were discharged by the time the team left, and the average patient stay was 1.5 days.



Cannabis for Chronic Pain: Panacea, or Pipe Dream?

Xavier F. Jimenez, MD, MA (Staff'13) Medical Director, Chronic Pain Rehab Section, Neurological Institute

Several recent studies seeking to determine the effects of cannabis on neuropathic pain seem to yield some promising results. They found that one in every five or six patients experienced as much as a 30% reduction in pain. But is that conclusive? The findings are not convincing to Xavier F. Jimenez, MD. Aside from taking issue with testing methodologies and parameters, he said that what is needed are tightly regulated, well-controlled, long-term prospective studies involving isolated CBD formulations lacking THC because:

• Chronic pain is complicated and responds to more than analgesia. It requires a consideration of physical functioning, quality of life and control of psychiatric co-morbidities, which cannabis use not only

"What is needed are tightly regulated, wellcontrolled, long-term prospective studies involving isolated CBD formulations lacking THC." might not improve but actually might make worse.

• Cannabis is known to cause cognitive and motivational issues resulting in general treatment noncompliance patterns, working against essential chronic pain treatments including psychotherapy and physical therapies.

• Patients often confuse the term "cannabis" with CBD, THC, marijuana and more, believing that any form has medical applications. However, this is not the case. Patients may resort to obtaining marijuana from unregulated sources, even though that is exactly the type of cannabis that causes problems.

• Cannabis results in serious psychiatric concerns in the population most attracted to it, young, impoverished males with high risk. Evidence already shows that medical marijuana dispensaries attract this population in disproportionate numbers.

Over time, perhaps only formulations approved by the U.S. FDA will be embraced, he said. In the meantime, he advised, more comprehensive approaches should be recommended, such as team-based, interdisciplinary rehabilitation programs that have shown efficacy in handling chronic pain complexities.

Huddle and Map Your Success Plan

Lisa Yerian, MD (Staff'04) Medical Director of Continuous Improvement

In 2013, Cleveland Clinic embarked on a journey to build a culture of continuous improvement (CI). Now, over 15,000 caregivers are pursuing a CI culture and capability through the Cleveland Clinic Improvement Model (CCIM, www.clevelandclinic.org/improve).

This process has led to significant improvements in patient care, reduced waste, enhanced teamwork and better morale. In 2018, our executive leadership, along with approximately 25,000 caregivers in all our hospitals and over 200 outpatient sites, began using tiered daily huddles to support patients and caregivers. In these brief meetings, information is shared systematically by our caregiver teams through several levels of the organization, including Tom Mihaljevic, MD, CEO and President, and the executive team. During these huddles, problems are identified and solved in rapid fashion.

Dr. Yerian invites inquiries on how her office can help your department experience better results through the CCIM.



End-of-Life Care

Silvia Perez-Protto, MD, MS (AN'14) Medical Director, Center for End of Life Care

Most people focus on living their lives. But how much time do they spend planning for the end of them? That is something Silvia Perez-Protto and her colleagues at Cleveland Clinic's End of Life Center are trying to influence by standardizing an approach to end-of-life discussions and goal-setting.

Goals of care documentation should be in every patient's medical file, she said. At the top of her list of documents that everyone should have is the Healthcare Power of Attorney. It is a legal document providing written instructions about who will make decisions for an individual who has become incapacitated. She advises her fellow practitioners to find ways of discussing this document with their patients while they still are healthy and able to weigh the issues before them. She urges them not to wait for a medical crisis to start the process. Her office assists caregivers with a variety of ways to initiate the goals-of-care conversation with seriously ill patients, and it also provides potential wording. The bottom-line objective is to respect the wishes of patients – both adults and children –- through advance-care planning.

Anesthesiology: An Overview

Christopher Troianos MD, FASE (Staff'16) Professor and Chair, Anesthesiology Institute

Cleveland Clinic's Anesthesiology Institute unites specialists in pain management, general anesthesia, pediatric and congenital cardiac anesthesia, cardiothoracic anesthesia and critical care, regional practice, outcomes research and education. All are within one fully integrated model of care to improve diagnosis, medical management and quality of life for our patients.

The Anesthesiology Institute provides clinical services in over 250 locations during a typical day across Northeast Ohio. Our main campus includes 81 operating rooms and 32 (outside the OR) procedural locations, while the rest of the Northeast Ohio hospitals and ambulatory surgery centers comprise 110 operating rooms and 29 procedural locations. Our cardiothoracic surgical practice is one of the largest in North America, and non-OR anesthesia services are the fastest-growing area within our practice, with approximately 20% annual growth over the past two years.

The areas in which we provide anesthesia services outside of the traditional operating room include obstetrics, endoscopy, bronchoscopy, electrophysiology, interventional radiology, electroconvulsive therapy, intra-operative MRI suite, and certain cancer interventions.

We offer pre-anesthesia consultation in 14 locations throughout Northeast Ohio that allow patients access close to home or their site of surgery and prepare them for their procedure. We also provide anesthetic experience that helps reduce cancellations and testing and optimizes a patient's medical condition to reduce nonsurgical complications, lengthof-stay, and readmissions. In addition, we offer the opportunity for an open discussion of advance directives to help patients make important decisions before facing potentially lifethreatening surgical intervention.

The Center for Critical Care: We have intensive care units with bed capacity for over 150 patients. These include 100 cardiovascular ICU beds, Transplant and Surgical ICUs on main campus, and nearly 40 beds at our regional hospitals. Our role in helping patients through critical illness, especially after a surgical intervention, is a key part of Cleveland Clinic's successful outcomes. This center also trains and provides house officer services throughout our regional hospitals by using advanced practice providers at a higher level of service and lower cost.

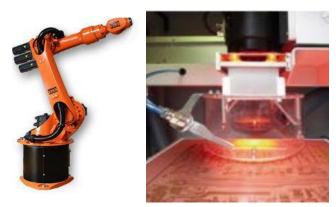
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The Department of Pain Management: We have clinical sites throughout Northeast Ohio consisting of patient offices and interventional areas that use the full spectrum of pain management techniques and services. Our most vulnerable patients are cared for by a dedicated team of pediatric anesthesiologists and nurse anesthetists. Services are provided for our pediatric patients on main campus and at Pediatric Centers of Excellence throughout Northeast Ohio. Our pediatric anesthesia services include anesthesia for congenital heart problems and non-OR interventional procedures.

The Department of Outcomes Research: This is the clinical research center for Cleveland Clinic's Anesthesiology Institute and is anesthesiology's largest single-site clinical research unit. We are most interested in simple and low-risk interventions that markedly improve the outcome of surgery and anesthesia. Examples include keeping surgical patients warm, optimizing anesthetic management, and improving postoperative care. The department is the administrative center for the international Outcomes Research Consortium, which includes about 150 investigators in 20 countries who have appointments at 30 universities. It is anesthesiology's largest academic research organization. The group typically runs about 200 simultaneous studies while publishing a full paper every 3.5 days, including many in high-profile journals. The impact factor of publications by our staff has increased from 1.15 in 2015 to 2.3 in 2017.

Education: Our mission of educating those who serve is fulfilled by our four core residency training programs (main campus, South Pointe Hospital, Cleveland Clinic Florida, and Cleveland Clinic Abu Dhabi), and fellowships in all of the major subspecialties within anesthesiology, including cardiothoracic anesthesia (largest program in the country), pain management (also the largest program in the country), critical care, pediatric anesthesia, regional/acute pain, transplant, neuro-anesthesia, and obstetrical anesthesia. Our anesthesia simulation center is endorsed by the American Society of Anesthesiologists as a recognized center for providing evidence of maintenance of certification. We also provide training for nurses to become Certified Registered Nurse Anesthetists (CRNAs), and many stay on to become part of Cleveland Clinic. Our residents, fellows, and student nurse anesthetists typically achieve a nearly 100% first-time pass rate on their board examinations, which is a testament to the faculty and caliber of trainees within their respective programs.



Inventors Are Medical Problem-Solvers

Karl West, MS Director, Medical Device Solutions

Medical Device Solutions (MDS) seeks to enhance and create innovative medical devices from ideas originating at Cleveland Clinic, as well as concepts and ideas from external sources.

Mr. West's multidisciplinary team of professionals has extensive experience in medical device design and product development. The product development team comprises 20 engineers within the Lerner Research Institute and includes engineering, prototyping, bio-robotics, polymers and electronics. The team uses highly advanced equipment including 3-D modeling and printing, IOPS and Hololens.

When desired, specific technology can be transferred to commercial partners to bring the solution to market, said Mr. West, who is proud to call himself an inventor.

"Basically, inventors are problem-solvers," he said. "At Cleveland Clinic, our job is to understand a clinical need and then find a solution for it." He said his team benefits from a unique work environment in which inventors have access to resources including other inventors, innovations, funding for developing prototypes and access to valuable clinical data. The team's many successes include the first hypogastric endovascular repair. In 17 years at Cleveland Clinic, Mr. West

"At Cleveland Clinic, our job is to understand a clinical need and then find a solution for it." has earned 16 patents. His academic credentials include both a BS in mechanical engineering and an MS in theoretical physics.

Expanding the Enterprise in Canada

Mike Kessel, MBA, CPA President and CEO, Cleveland Clinic Canada

Cleveland Clinic Canada has been a part of the organization for 13 years, with 200 caregivers now serving an ever-increasing patient base from two busy outpatient centers focused on disease prevention and sports rehabilitation and performance offerings. Patient volumes continue to show a sharp, upward trajectory.

"I've been here for 10 years now," Mr. Kessel said. "I was here when it was really tough, with a 65% personnel turnover, sporadic demand for our services, a lack of infrastructure and no long-term strategy." That has all changed, he said. Today, Cleveland Clinic Canada shows significant improvements in people, processes and technology. Where once the Canadian operation was beset by turnover, the rate now is closer to 3%. Sharp recruitment has resulted in A+ level talent being hired. Limited connections to Cleveland have been replaced by routine exchanges.

"I've made 296 trips to Cleveland in 10 years," he said. Leading-edge technology has supplanted outmoded



equipment, as well. Looking ahead, **Cleveland Clinic** Canada hopes to succeed through a strategy that optimizes existing facilities by growing executive health services, sports medicine and highvalue treatments; increases entry points to its facilities through digital health; and expands referrals to the U.S.

One main reason behind the successes

of Cleveland Clinic Canada, Mr. Kessel said, is, "The longer we've been in the market and the more we do good things, the more our patients and corporate clients ask us to do."



Alumni Business Meeting Summary

Mindy Stroh, Senior Director, Alumni Relations, told the board that a corporate history research company has been retained to help plan Cleveland Clinic's 100th anniversary festivities taking place in 2021. The History Factory soon will begin a 16-week deep dive into the institution's past, seeking to identify landmark moments for commemoration. The firm will work with Cleveland Clinic's Archives department and several project committees to form a plan for the upcoming centennial celebrations.

Tara Samstag, Associate Director, Alumni Relations, introduced the organization's new website to the board. It is designed to present an easy-to-navigate collection of features for the alumni audience.

Katie Eurich, Development Associate, reported on upcoming board vacancies and elections and award nominations.

Philanthropy Committee Chair Gary Dworkin, MD (CATS'92), updated the board on Centennial Legacy Society philanthropic support, and Nelson Wittenmyer, Vice Chair of the Philanthropy Institute, gave a progress report on Cleveland Clinic's Centennial Campaign, The Power of Every One, highlighting Cleveland Clinic's steady philanthropic growth over time. Responding to board members' questions, Mr. Wittenmyer explained that giving to Cleveland Clinic can take many forms, including cash, stocks, bonds, mutual funds, real estate, tangible personal property, life insurance, retirement plan assets and/or IRAs, business and/or partnership interests – all of which can be tailored to meet the needs of the individual who is making the gift.