



Annual Report 2020





Letter

The Covid-19 Pandemic **Highlights the Importance** of Medical Research

2020 was a year defined by the pandemic. So many in our country and around the globe have experienced illness, mourned the loss of loved ones, and endured economic hardships. We send our support and caring to all who suffer during these extraordinarily challenging times.

As you know, the Lasker Awards were not given this past year due to Covid-19. However, our work to support medical research has continued—with heightened urgency, as the world places trust in science to find answers in the battle against this virus. The fight is far from won. The coronavirus pandemic has made sustained, world-class medical research more important than ever. Researchers, physicians, and public health experts have stepped up and new hope is provided by the work to develop diagnostics, therapeutics, vaccines, and public health interventions.

At Lasker, we have redoubled our advocacy efforts. For example, we have played an advisory role in research on convalescent plasma and hyperimmune globulin, including raising awareness of the need for the public to participate in Covid-19 clinical research trials. We also continue to encourage both public and private philanthropic support of medical research through our partnerships.

The current pandemic is a powerful wake-up call. To paraphrase Mary Lasker, "If you think research is expensive....try a pandemic." We must invest now and we must ensure that this support is continued, so we are better prepared for future outbreaks. As we wrote in an article in Scientific American this year, Covid-19 has already taught us important lessons, including:

- · Good science is key to fighting this pandemic and to improving human health overall.
- Funding for medical research must be robust, sustained and predictable.
- Strong public health infrastructure is essential for effective delivery of research advances.
- Support of the research and clinical workforce is essential.

Medical research is a public good that requires the support of the public. We urge you to join us in our mission to ensure that biomedical science is a priority—because it is essential to the safety and healthy well-being of all.

Anthony Evnin

Chair, Board of Directors

Claire Pomeroy

Awards Program

The 2020 Lasker Awards were not given because of the global Covid-19 pandemic. The Foundation marked this absence by collaborating with two renowned scientific journals in order to frame the current pandemic in the historical context of past Awards.

In a *JAMA* Viewpoint published in September, Lasker Medical Research Awards Jury Chair Joseph L. Goldstein reflected upon 75 years of Lasker Awards honoring advances in infectious disease research and discussed ways in which these Awards provide context for current research initiatives to develop therapies against Covid-19.

In October, a special supplement to the journal *Cell*, produced in partnership with the Lasker Foundation, offered broader perspectives on infectious disease research. This supplement featured an essay by Pulitzer Prize—winning author and scientist Siddhartha Mukherjee on seminal advances in immunology and virology that invited readers to consider the implications of Mary Lasker's famous phrase "If you think research is expensive, try disease" in light of the devastating pandemic.

The *Cell* supplement also included commentaries and timelines on why and how vaccines work, a perspective on the state of public health infrastructure in Africa, and a snapshot about antimalarial drugs. An essay by Joseph Goldstein examined artwork that was created in response to the 1918 influenza epidemic and explored how the work of artists such as Sargent, Munch, and Hopper may have foreshadowed the unique moment in which we find ourselves today—a moment characterized by fear, social distancing, and upheaval—but also marked by a sense of hope.

Both the *JAMA* Viewpoint and the *Cell* supplement are freely available from the Lasker Foundation website.

Tragic events such as pandemics can be remembered, as well as foreshadowed, by works of art.

These paintings foretell the lockdown and social distancing of today's Covid-19 pandemic.



Edvard Munch Self-Portrait with the Spanish Flu (1919)

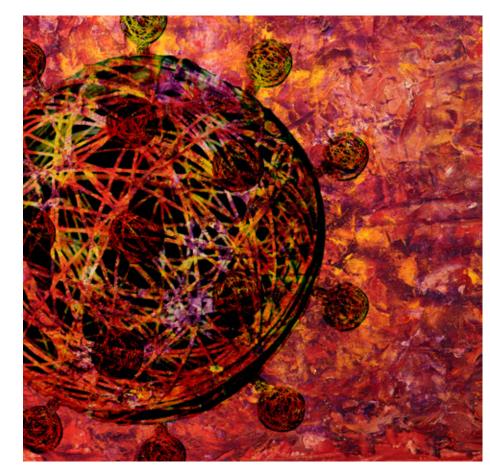


John Singer Sargent The Interior of a Hospital Tent (1918)



Edward Hopper Chair Car (1965)

Lectures





Arturo Casadeva

Deployment of Convalescent Plasma Against Covid-19

Public Lecture in Honor of Al Sommer

The 2020 Lasker Public Lecture "Deployment of Convalescent Plasma against Covid-19" was given virtually by Arturo Casadevall. Casadevall is the Alfred and Jill Sommer Professor and Chair of the Molecular Microbiology and Immunology Department at Johns Hopkins Bloomberg School of Public Health and a Bloomberg Distinguished Professor.

In this pandemic year, Casadevall gave an especially relevant lecture delineating the history of convalescent plasma and the rationale for suggesting it as a bridging treatment for Covid-19 until the world has a better, more sustainable solution. His biggest hope is that the infrastructure that he and others have set up this year will remain and that it will enable an accelerated response when the next pandemic hits.

Using the virtual format, we had over 200 attendees, and the question-and-answer session afterward was quite lively.

The event was co-hosted by Secret Science Club, a non-profit that promotes public engagement in science. The lecture was supported by an anonymous donation made in honor of Lasker Foundation Board member Alfred (Al) Sommer, recipient of the 1997 Albert Lasker Clinical Medical Research Award and dean emeritus at Johns Hopkins Bloomberg School of Public Health.

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Education

Lasker Essay Contest

From its inception in 2014, the Lasker Essay Contest has aimed to engage young scientists and clinicians in the discussion of big questions in biology and medicine, policy, and the role of biomedical research in our society. Submitting an essay gives trainees a chance to practice communicating science and science-related issues to a broad audience. The Essay Contest is open to applicants from all over the world.

This year, applicants were asked to share **how a notable scientist has inspired them—through the** scientist's personality, life experiences, and/or scientific contributions.

Now in its seventh year, the Essay Contest of 2020 was the most successful to date. We received 322 essays, 109 of them from outside the United States, and selected 11 winners! The co-winners received monetary prizes for educational expenses. Many of the Essay Contest applicants chose to write about Lasker Laureates, demonstrating the profound impact that our Laureates have on the scientific community and the next generation of scientists.

We expanded the reach of the Essay Contest by producing a series of podcasts in which several Essay Contest participants were engaged in conversation with the notable scientists who inspired them. In addition, the enthusiasm generated by the contest prompted the Diamonstein-Spielvogel Foundation to generously partner with us to publish a booklet with the 11 winning essays.

1. Emily Ashkin is a PhD candidate in the Cancer Biology program at Stanford University School of Medicine. Her dissertation research in Monte Winslow's lab focuses on understanding the impact of the cohesin complex on tumorigenesis and the tumor immune microenvironment in lung cancer.

Essay: J. Michael Bishop: A Scientist for the Next Generation

2. David Basta is a fourth-year medical student in the USC-Caltech MD-PhD Program at the Keck School of Medicine of the University of Southern California. He plans to pursue a residency that prioritizes his continued development as a physician-scientist.

Essay: For the Love of Science

3. Avash Das was born and raised in Kolkata and graduated from one of the oldest medical schools in eastern India. He is currently a PhD candidate at UT Southwestern Medical Center in the laboratory of Helen Hobbs and Jonathan Cohen, where he is studying the role of lipids in metabolic diseases.

Essay: Michael Brown and Joseph Goldstein: Tribute to My Inspiration

4. William Dunn is an internal medicine trainee at Addenbrooke's Hospital and an Academic Clinical Fellow in Haematology at the Jeffrey Cheah Biomedical Centre. He is currently conducting research in George Vassiliou's lab at Cambridge, where he studies age-related clonal hematopoiesis. William aspires to become a clinician-scientist in malignant hematology.

Essay: Sweet Are the Uses of Adversity

5. Safwan Elkhatib is an MD-PhD student at the University of Nebraska Medical Center, working in the laboratory of Adam Case. His doctoral research is focused on the mechanistic study of how post-traumatic stress disorder can alter the inflammatory milieu. Outside of science, he is passionate about addressing health inequity in the community.

Essay: Salk, Sabin, and the Crown of Health

6. Laurel Gabler is completing her third year of pediatrics residency at the Children's Hospital of Philadelphia. She is a Rhodes Scholar, a Fulbright Scholar, and a Luce Scholar. She hopes to continue to work at the intersection of public health research, clinical medicine, and health education both domestically and internationally.

Essay: Putting "People's Health in People's Hands": How the Bangs Inspired My Personal Journey

















"The presence of scientific luminaries in one place [at the Lasker Awards ceremony] is analogous to recreating the Knights of the Round Table in biomedical science."

Avash Das

7. Kwabena Kusi-Mensah is a board-certified psychiatrist with training in child and adolescent mental health. Currently, Kwabena is a first-year PhD candidate at the University of Cambridge, where he is developing culturally-appropriate tools for assessing frontal lobe functioning in children and adolescents in West Africa, as well as risk factors affecting cognition and mental well-being.

Essay: As One Single Tribe: Thinking Globally and Locally

8. Lisa Learman is a PhD candidate at Johns Hopkins University School of Medicine, where she studies the contribution of aberrant activity-induced splicing changes in neurological disease under the mentorship of Paul Worley. In addition to doing research, she volunteers at the Maryland Science Center and edits the Hopkins Biomedical Odyssey blog.

Essay: With the Corn, Against the Grain

9. Olivia M. Lucero is a dermatologist at Oregon Health & Science University (OHSU), where she supervises a resident-run surgery clinic. She is also a post-doctoral fellow in the lab of Brian Druker, studying targeted therapies for cutaneous and hematological malignancies. She plans to complete

a cutaneous oncology fellowship and become a dermatologic surgeon scientist.

Essay: Genetics as a Tool for Generational Empowerment

10. Hannah Mason is a fourth-year NIH-Cambridge Scholar pursuing her PhD in the laboratories of Dorian McGavern at the National Institute of Neurological Disorders and Stroke and Ole Paulsen at the University of Cambridge. She studies how the brain's immune system responds to and is shaped by repetitive head injury and degenerative processes. After Hannah completes her PhD, she will attend medical school at Emory University.

Essay: My Gym Genie: Gathering Inspiration from Dr. John Schiller

11. Samantha Wong is a medical student at the University of California–Davis School of Medicine in the Academic Research Careers for Medical Doctors pathway. She is passionate about cancer prevention from an interdisciplinary perspective, particularly in diverse and underserved communities. She plans to pursue a career in academic medicine.

Essay: Fauci: Science as a Voice of Reason

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Education

Lasker Clinical Research Scholars

Five new Lasker Clinical Research Scholars joined the program this year. This initiative provides talented early-stage researchers the opportunity to carry out independent clinical and translational research for five to seven years at the NIH. This year the program is celebrating two great successes by program alumni: Nehal Mehta, a Scholar from the first cohort, was awarded a tenured position at the National Heart, Lung, and Blood Institute, and Christian Hinrichs will lead the Division of Medical Oncology at Rutgers Cancer Institute of New Jersey as Chief of Cancer Immunotherapy.





Stephanie Chung National Institute of Diabetes and **Digestive and Kidney Diseases**

Chung studies the complex association of biological, social, and environmental factors that contribute to the pathogenesis of type 2 diabetes and cardiometabolic disease. She focuses on diabetes health disparities in youth and young adults, with the goal of developing improved population-specific screening and therapeutic strategies.



Alison Boyce National Institute of Dental and Craniofacial Research

Boyce is working toward a treatment for fibrous dysplasia/McCune-Albright syndrome (FD/MAS), a rare and debilitating skeletal disease that can cause bone fractures, deformity, pain, and loss of ambulation, vision, and hearing. Her research focuses on the role of the RANKL protein, which regulates bone resorption and plays a role in FD pathogenesis.



Ian Myles **National Institute of Allergy** and Infectious Diseases

Myles examines how human health is affected by the skin microbiome, the normal microorganisms that live on the skin, with a particular emphasis on eczema (also known as atopic dermatitis, AD). He has identified a species of bacteria from normal, healthy skin that offers protection against the development of AD, and he has ongoing clinical trials to determine whether these bacteria can function as an effective topical treatment.



Jacqueline Mays National Institute of Dental and Craniofacial Research

Mays studies the underlying immune processes of chronic graft-versus-host disease that develop in the salivary glands and other tissues of patients who have had hematologic cell transplants. Her research will deepen the understanding of the initial causes of the disease and how the immune system functions in autoinflammatory oral disease.



Yogen Kanthi National Heart, Lung, and **Blood Institute**

Kanthi works to develop improved treatments for patients with venous thrombosis and peripheral artery disease. His research focuses on the role of innate immune activation in the pathogenesis of these diseases.

iBiology/Science Communication Lab



Harold Varmus discusses his work with iconic newsman Dan Rather.

Lasker continues to partner with iBiology/Science Communication Lab to produce videos by scientists in different disciplines to explain their research. We released three videos in 2020. Robert Farese and Tobias Walther presented the biology of lipid droplets, Emery Brown discussed what happens to the brain when it is under general anesthesia,



Uri Hasson explains how listening to the same story elicits similar brain activity in different listeners.

and Uri Hasson explored how brain activity is shared between listeners of the same story. The Foundation also sponsored another video in the series "Conversations in Science

with Dan Rather," a special opportunity for the audience to get to know scientists as people and to understand what drives their scientific pursuits. This year's Dan Rather interview was with Lasker and Nobel Laureate Harold Varmus, who discovered that mutations in human genes can cause cancer.



Lasker Lessons in Leadership

Lasker Lessons in Leadership was created in collaboration with the International Biomedical Research Alliance to provide strategies for developing leadership skills, stimulate a sense of leadership responsibility, and encourage young scientists to seek out opportunities to become leaders in their biomedical careers. An important component of this program is the interactions between esteemed speakers, OxCam Scholars, and Lasker Clinical Research Scholars. While in-person meetings have not been possible this year, Lasker continues to collaborate with the OxCam program in organizing virtual meetings. 2020 marks the fifth year of this fruitful partnership.

The 2020 OxCam recruitment was incredibly successful, with a 45% increase in applications compared with 2019 and a diverse applicant pool.

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Advocacy

President's Initiatives

Claire Pomeroy spread the Foundation's message through public speaking and op-eds throughout the year. She was a two-time guest on "The Health Disparities Podcast," a series sponsored by Movement is Life, where she spoke about social determinants of health.

Opinion Pieces:

- "Failing another national stress test on health disparities" (co-author), published in *JAMA* on April 15
- "If you think preparedness is expensive, the pandemic puts things in perspective," published in *Scientific American* on April 30

Talks:

- Ross University Medical School Graduation Ceremony Commencement speech, May 16
- "The Time is Now: Fostering an Inclusive Culture to Drive Gender Equity in Academic Medicine" (panel moderator), July 15
- "Creating a Healthier World by Addressing Social Determinants of Health," California Association of Physical Therapists, October 3
- "Health Equity: Addressing Social Determinants of Health," Allscripts Client Experience Conference, October 7
- "Tips for Academic Leadership in Challenging Times," BIRCWH Leadership Webinar, Emory University, October 8

Pomeroy had an opportunity to put words into action this year. She serves as an advisor to "The Fight Is In Us"



national Coalition, whose mission is to "optimize the use of convalescent plasma in response to the Covid-19 pandemic." This includes the donor awareness campaign which advocates for survivors of Covid-19 to donate convalescent plasma to those who are still battling the virus. Pomeroy chairs the Research Committee and co-chairs the Collections/Distribution and the Community Engagement Committees for the Coalition.



Science Philanthropy Alliance

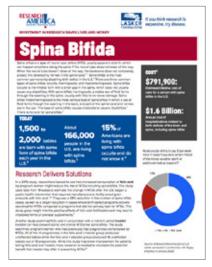
The Lasker Foundation is a proud member of the Science Philanthropy Alliance and is honored to have President Claire Pomeroy on its Board of Directors. The Alliance's mission is to increase support for basic scientific research by advising philanthropists.

In 2020, the Alliance has played a major role in helping funders decide how best to invest their money in response to Covid-19. To help guide funders' decisions, the Alliance has created a working group to not only focus on the short-term goal of overcoming the current crisis but also take the long view on which research breakthroughs are needed to prevent future pandemics. The Alliance has organized virtual meetings about Covid-19 research to identify the gaps in basic scientific research.

Fact Sheets

We continued our partnership with Research! America to develop fact sheets that highlight the benefits of medical research to improve health. Each fact sheet focuses on a health condition and presents current statistics and concrete numbers of the cost- and life-saving benefits of research. The fact sheets are important tools for

advocates when they meet with policy makers and are helpful for educating the public. Every time a new fact sheet is published, the Lasker Foundation and Research!America announce it on their social media channels. We currently have over 50 fact sheets on our website.



Communications

Newsletter

Our monthly newsletters showcased the labs and life stories of Lasker Laureates. Throughout the year, we also featured a special seven-chapter interview with Lasker Award winner Nancy Wexler on her lifelong dedication to researching Huntington's disease and the ethical implications of genetic research. We bring these important stories of perseverance and discovery to over 2200 subscribers around the globe.



From May 2020 newsletter: Lasker Laureate Stanley N. Cohen with research associate Annie Chang. Cohen shared the 1980 Albert Lasker Basic Medical Research Award with Paul Berg, Herbert W. Boyer, and A. Dale Kaiser for cloning genes by recombinant DNA technology. Photo courtesy of Chuck Painter, Stanford News Service.



From June 2020 newsletter: Solomon Snyder, who won a Lasker Award in 1978 for identifying opiate receptors, enjoys playing classical guitar outside of the lab. Snyder shared the award with Hans W. Kosteritz and John Hughes.



Screenshot from the exclusive multipart interview of Nancy Wexler. Wexler discussed her life's work to increase awareness and find therapies for Huntington's disease.

Social Media

Lasker uses Twitter to engage with scientists from all over the world. Our number of followers continues to grow as we share the latest in biomedical research, facts about our Laureates, and information about Lasker programming.



Screen capture from the Albert Lasker Basic Medical Research Award video by Flora Lichtman. "Histones & Gene Expression: From Styrofoam to Mission Control"

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Leadership



Elias A. Zerhouni

"I came here at 24 years old. I had been married two weeks, I had \$300 in my pocket, and I didn't even speak English."— Elias Zerhouni on arriving in America as a medical resident.

Despite his unassuming start, Elias Zerhouni has had an illustrious career, and the Lasker Foundation is fortunate to have had him on its Board of Directors since 2009. He is a professor emeritus of radiology and biomedical engineering at Johns Hopkins University, and he has served in numerous leadership roles, including director of the National Institutes of Health (NIH); senior fellow to the Bill & Melinda Gates Foundation; and president of global research and development and a member of the Executive Committee at Sanofi.

Early in his career at Hopkins, Zerhouni realized the power of interdisciplinary science. He taught his students his 50/50 philosophy: 50% of your project should come from within your field, and 50% should be learned from other fields. Using this paradigm, he made revolutionary improvements to both CT and MRI scanning methods, and he credits this crossfertilization mentality for taking him to the directorship of the NIH, where he cultivated one of the biggest changes the NIH has ever seen: the creation of the Common Fund.

Zerhouni perceived a misalignment between the science that was being done at the NIH and the science that needed to be done. Part of the problem was that the Institutes are organized around diseases and organs, leaving large holes in research that require interdisciplinary approaches. Zerhouni asked, "Is there science that we should be doing that no single Institute can or should do?"

To say that he encountered resistance is a big understatement, but as he held workshops and spoke directly to scientists, he found that everyone had ideas for what the NIH should be doing that it wasn't. In January 2007, the NIH Reform Act of 2006 was signed into law, establishing the Common Fund and creating a mechanism for the NIH to support emerging, innovative science. Fourteen years later, Zerhouni is pleased with the advances that the Common Fund has fostered, but he had hoped its budget would have grown more by now; there are still many important questions that need to be addressed.

Zerhouni says he never intended to move between academia, government, and the private sector, but every time he was offered a new position, he thought it was a worthwhile challenge. He does admit, though, that when he was approached to work at Sanofi, he was initially reluctant. "It was the dark side!" he laughed. But once he met the scientists, he realized that they were not so different from academic scientists. They, too, are rigorous and want to help alleviate human pain and suffering. This is the same reason he loves the Lasker Foundation, he says—it rewards tangible contributions to human health. Zerhouni had always known about the Lasker Foundation, but he became more familiar with Mary Lasker's advocacy while he was at the NIH. When he was invited to join the Board, he was happy to accept.

Throughout his career, Zerhouni has carried with him the fundamental belief that it doesn't matter where an answer to a question comes from; what matters is the merit of the work. This, he says, is the quality he admires most about the American spirit. "I never thought that a friendless immigrant with no network could have the career I did. I am so grateful to the spirit that it's not who you are, but what you contribute, that defines you in America.'

NOTABLE IN HEALTH CARE

Honored: President Claire Pomeroy was honored by Crain's New York Business 2020 Notable in Health Care. This special report identified innovators in health care who helped flatten the Covid-19 curve and those who fought and continue to fight to end healthcare disparities. Pomeroy has long been a public health advocate, and throughout the pandemic she has helped frame the crisis as an opportunity to gather medical insight to better respond not only to Covid-19, but also to future pandemics.

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The Lasker Society accepts deferred gifts through estate planning.

Looking Ahead:

LASKER AWARDS

The 2021 Lasker Award winners will be celebrated on Friday, October 1. We will consider nominations submitted for the 2020 and 2021 Award cycles.

ESSAY CONTEST

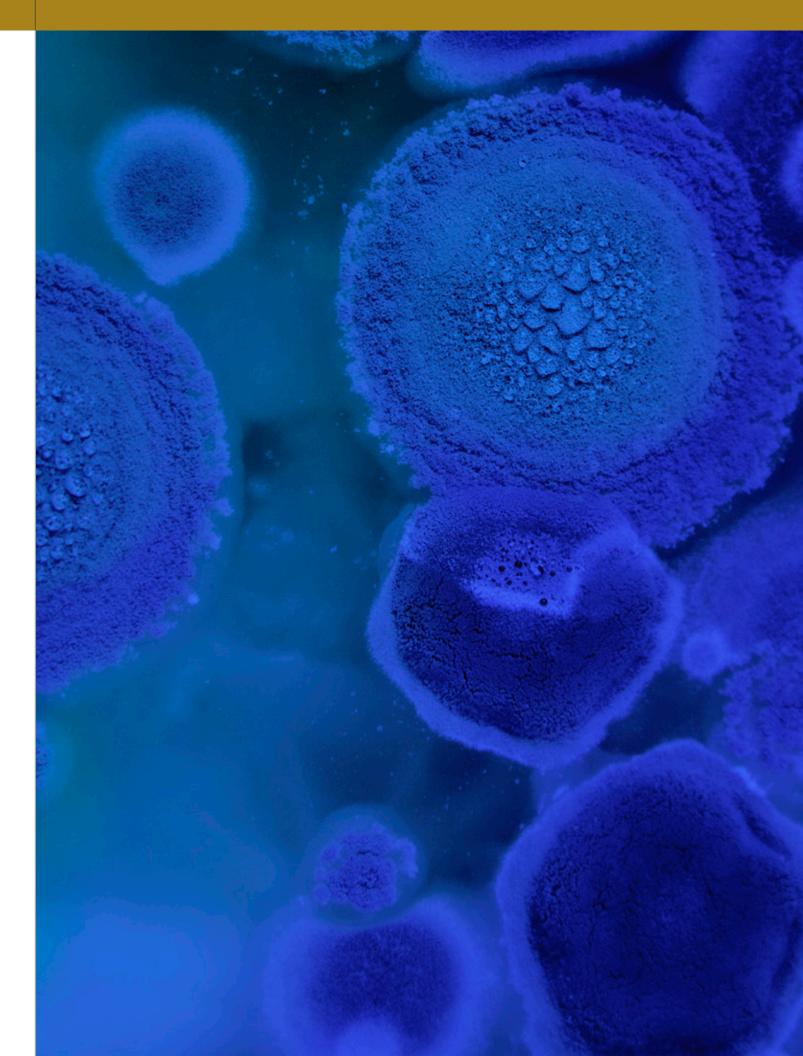
The 2021 Lasker Essay Contest will open in early February. Winners of the contest will be announced in early July.

LESSONS IN LEADERSHIP

Cynthia Kenyon, one of the world's preeminent experts on the molecular biology and genetics of aging will present a web lecture on March 30. Kenneth Frazier, chairman and CEO of Merck & Co will be our speaker on November 1st.

75TH ANNIVERSARY

Throughout 2021, we will celebrate the 75th Anniversary of the Lasker Foundation with podcasts, special videos, articles, and profiles that highlight the achievements of the Foundation and our Laureates.





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