

COLUMBIA GLOBAL CENTERS | MUMBAI



ANNUAL REPORT 2019-2020





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# Letter From the Director



Dear Friends,

Greetings from Columbia Global Centers | Mumbai!

What a stormy year this has been! In a world churned inside out by the coronavirus pandemic, we were all left adrift. Carefully planned activities postponed. Eagerly anticipated opportunities cast aside. Unable to seek refuge in social lifelines we had relied on.

But then, with the displacement and despair around us, we knew our work was even more valuable. We rode the rough waters and changed course when it was needed. Uncertain times can shake our belief in the ideas, strategies, and relations that had anchored us in the past. Yet it was precisely those that came to our rescue and enabled us to thrive. First, the unwavering belief in global collaboration which lies at the very core of the mission of Columbia University's global centers. The pandemic made isolated action a thing of the past and the network of global centers rallied together to create more than 300 informative and interactive programs amidst this crisis. Second, the deep investment in creating a platform for long-term research enabled us to make sense of our predicament through comparative and historical analysis and explore solutions through scientific investigation. And third, it was the numerous partnerships with experts and organizations at the University and in the region that ultimately propelled us forward.

The Covid-19 outbreak has challenged academic institutions to quickly adapt to meet the demands of the crisis. There were undoubtedly new skills that we, at the Mumbai Center, had to learn to accomplish this. Transitioning to a virtual format helped us get our message out to audiences we may not have been able to reach before. We developed new communications materials, repurposed our rich archive of programs, and disseminated our work extensively through digital media. Our engagement with schools and centers at Columbia University and stakeholders in the region multiplied as we worked collectively to deepen the regional and global impact of our work. Serving as a regional educational hub was another key achievement of the Center, especially through programs that benefited students stranded by the lockdown.

As the world prepares for vaccines and reopening, I approach a new decade in the history of the Mumbai Center with immense gratitude. For our donors who supported us so generously. For the Columbia community of faculty, administrators, alumni, and students. For our regional partner institutions and experts who gave of their time with a genuine commitment to learning and sharing. For our amazing Mumbai and global team members who weathered every hardship with determination.

This report provides highlights of our efforts. I hope you will enjoy reading it!

**RAVINA AGGARWAL**

Director, Columbia Global Centers | Mumbai



## COLUMBIA UNIVERSITY RESPONDED TO THE PANDEMIC THROUGH CUTTING-EDGE INITIATIVES



*“The network of Columbia Global Centers that now span the world are promoting teaching, research, public outreach, and local and regional engagement in Jordan, Turkey, Tunisia, Kenya, Brazil, Chile, China, India and France. Through their extraordinary contributions to our University community, the Centers are fulfilling their promise, individually and collectively, and making Columbia a global university for the 21st century.”*

**- LEE C. BOLLINGER**

President of Columbia University

*“In our current environment, we have all had to twist, or pivot— at our jobs, our home life, and in our broader communities to fulfill our purpose. For the Global Centers, that has meant developing a full slate of on-line programming and adapting our skills to this new format.”*

**- SAFWAN M. MASRI**

Executive Vice President for Global Centers and  
Global Development at Columbia University





# ABOUT THE CENTER

**Columbia Global Centers | Mumbai** was established in 2010 to serve as a research, education, and knowledge hub for promoting new and informed ways of addressing global challenges. The Center promotes research, designs innovative projects for the application of academic knowledge to regional problems, disseminates research to wider publics in academia, government, civil society, and the private sector, and conducts education programs for students and professionals. By connecting the University's world-class scholars and students with peers from the region, the Mumbai Center works to deepen knowledge that can transform society.

In the following pages of this report, spanning from September 2019 to September 2020, we offer you a glimpse of our programs and of the dedicated people who helped shape them.





# PROGRAMS



**City of Haze, Gardens of Beauty: Reimagining Nature in Urban India**  
September 10, 2019 | Public Lecture/Panel

**Columbia University’s Graduate School Fair**  
September 29, November 5, 6, 8, 2019 | Information Session

**Microbiome Matters: Data, Diet and Treatment of the Gut**  
September 29-October 1, 2019 | Symposium  
*Co-organizer:* Shillim Institute

**Disrupting Urban India: Transforming Life and Work through Technology**  
October 4, 10, 15, 2019 | Panel Discussion  
*Project:* Urban Works Innovation Challenge

**Wildlife Conservation in Urban India: Towards an Inclusive Policy and Programmatic Framework**  
November 7, 2019 | Symposium  
*Co-organizer:* Aga Khan Trust for Culture in India

**Pharmaceutical Policy: Drug Patents, Prices, and Utilization in India**  
November 12, 2019 | Panel Discussion  
*Project:* Yusuf Hamied Fellowship Program

**Pollutants in the Air around Us: Health Risks and Challenges**  
December 2-3, 2019 | Conference  
*Co-organizer:* Jeanine D'Armiento, Professor of Medicine in Anesthesiology, Columbia University Medical Center  
*Project:* President’s Global Innovation Fund

**Women’s Health and Air Pollution**  
December 3, 2019 | Panel Discussion

**Breast Cancer in India: Trends, Environmental Exposures and Clinical Implications**  
December 4, 2019 | Symposium  
*Co-organizers:*  
Jasmine McDonald, Assistant Professor of Epidemiology, Mailman School of Public Health, Columbia University  
Mary Beth Terry, Professor of Epidemiology, Mailman School of Public Health, Columbia University  
*Project:* Yusuf Hamied Fellowship Program

**Extreme Weather and Climate Change in New York and Mumbai**  
December 6, 2019 | Seminar

**Technologies of Care: New Directions in Nursing Education**  
December 12, 2019 | Symposium  
*Co-organizers:*  
Kellie Bryant, Assistant Professor, School of Nursing, Columbia University  
Jennifer Dohrn, Associate Professor, School of Nursing, Columbia University  
*Project:* President’s Global Innovation Fund

**Customer Discovery and Value Proposition**  
January 7-9, 2020 | Seminar  
*Project:* Urban Works Innovation Challenge

**Historicizing Bhakti**  
January 10, 2020 | Seminar

**Krishna's Playground: Vrindavan in the 21st Century**  
January 13, 2020 | Public Lecture/Book Launch

**Precision Public Health: A Pathway to Population Health**  
January 30, 2020 | Public Lecture  
*Project:* Yusuf Hamied Fellowship Program

**Intellectual Property, IOT, and Sales/Distribution**  
February 3-5, 2020 | Seminar  
*Project:* Urban Works Innovation Challenge

**Navigating the Fundraising Process**  
March 27, 2020 | Seminar  
*Project:* Urban Works Innovation Challenge

**Reidentifying Needs**  
March 31, 2020 | Seminar  
*Project:* Urban Works Innovation Challenge

**Unbundling Tech Credits**  
April 2, 2020 | Seminar  
*Project:* Urban Works Innovation Challenge

**Financial Modeling Masterclass**  
April 4, 2020 | Seminar  
*Project:* Urban Works Innovation Challenge

**Growing through OKRs**  
April 17, 2020 | Seminar  
*Project:* Urban Works Innovation Challenge

**Market Analysis**  
April 21, 22, 24, 2020 | Seminar  
*Project:* Urban Works Innovation Challenge

**Branding and Marketing Strategy**  
April 22, 2020 | Seminar  
*Project:* Urban Works Innovation Challenge

**Urban Works Boot Camp for US Teams**  
April 23-May 8, 2020 | Seminar  
*Project:* Urban Works Innovation Challenge

**Preparing Nurses for Covid-19: The Use of Simulation Learning**  
April 30, 2020 | Panel Discussion

**Pandemics in Cinema: Filming the ‘Invisible Enemy’**  
May 7, 2020 | Discussion

**Technology and Waste Management in Urban India**  
May 26, 2020 | Seminar  
*Project:* Urban Works Innovation Challenge

**Caring for the Heart: Women’s Health during Covid-19**  
June 4, 2020 | Panel Discussion  
*Co-organizers:*  
Women Creating Change, Center for the Study of Social Difference, Columbia University

**Technology and Water Management in Urban India**  
June 15, 2020 | Seminar  
*Project:* Urban Works Innovation Challenge

**Wildlife Trade and the Global Health Crisis**  
June 17, 2020 | Panel Discussion  
*Co-organizers:*  
Columbia Global Centers | Nairobi  
Columbia Global Centers | Beijing

**Technology and Organization Management in Urban India**  
June 18, 2020 | Seminar  
*Project:* Urban Works Innovation Challenge

**Unbundling Tech Credits for the US Teams**  
June 23, 2020 | Seminar  
*Project:* Urban Works Innovation Challenge

**Floods Management: Prevention, Protection and Mitigation**  
July 3, 2020 | Panel Discussion  
*Co-organizer:* Columbia Global Centers | Nairobi

**GIDEoN: A Vision for Ending Pandemics**  
July 8, 2020 | Public Lecture  
*Project:* Yusuf Hamied Fellowship Program

**Oral Health and Healthcare during Covid-19: Lessons from India, Kenya and the United States (Part I)**  
July 13, 2020 | Panel Discussion  
*Co-organizers:*  
Columbia Global Centers | Nairobi  
Kavita P. Ahluwalia, Associate Professor, Columbia University College of Dental Medicine

**How to Sell in Global Markets**  
July 16, 2020 | Seminar  
*Project:* Urban Works Innovation Challenge

**Oral Health and Healthcare during Covid-19: Lessons from India, Kenya and the United States (Part II)**  
July 20, 2020 | Panel Discussion  
*Co-organizers:*  
Columbia Global Centers | Nairobi  
Kavita P. Ahluwalia, Associate Professor, Columbia University College of Dental Medicine

**Enterprise Sales and Pricing Strategy**  
July 23, 2020 | Seminar  
*Project:* Urban Works Innovation Challenge

**Financing Options for Tech Startups in India**  
July 30, 2020 | Seminar  
*Project:* Urban Works Innovation Challenge

**Marketing Strategy for Startups in India**  
August 4-6, 2020 | Seminar  
*Project:* Urban Works Innovation Challenge

**Information Session on Columbia University’s School of Professional Studies**  
August 18, 2020 | Information Session

**Digital Marketing and Branding for the Urban India Market**  
September 24, 2020 | Seminar  
*Project:* Urban Works Innovation Challenge

**Urban Works Innovation Challenge 2019-2020 Demonstration Day**  
September 29, 2020 | Panel Discussion  
*Project:* Urban Works Innovation Challenge

**The Lens as Witness: Photojournalism in the Times of Covid-19**  
September 30, 2020 | Panel Discussion



# KEY FIGURES

FACULTY

100

ADMINISTRATIVE HEADS

91

STUDENTS

292

ALUMNI

154

## UNIVERSITY PARTNERS

Barnard College  
Center for the Study of Social Difference  
Columbia Alumni Association  
Columbia Business School  
Columbia College  
Columbia Journalism School  
Columbia Law School  
Columbia School of Nursing  
Columbia University College of Dental Medicine  
Columbia University Medical Center  
Earth Institute  
Fu Foundation School of Engineering and Applied Science  
Graduate School of Architecture, Planning and Preservation

Graduate School of Arts and Sciences  
Herbert Irving Comprehensive Cancer Center  
Mailman School of Public Health  
Office of Undergraduate Global Education  
School of the Arts  
School of General Studies  
School of International and Public Affairs  
School of Professional Studies  
School of Social Work  
Teachers College  
Vagelos College of Physicians and Surgeons  
Women's Center for Cardiovascular Health

## PROGRAMS

Environmental Sustainability

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Education, Culture, and Knowledge

4

Health and Medicine

12

Business and Economic Opportunity

29

Student Programs

8

## PUBLIC ENGAGEMENT

Program Participants

1940

Subscribers

8104

## TYPES OF ORGANIZATIONS

Academia

173

Civil Society Organizations / NGOs

117

Government Agencies

34

Corporate / Private Organizations

164

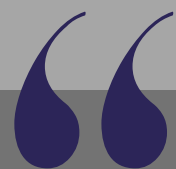
Media

12

Professional Organizations

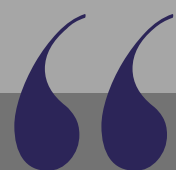
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*In this time of global health crisis, the work of Columbia University is even more relevant to India and the world. Its mission of scientific collaboration and knowledge sharing can help us get to the root causes of problems and arrive at solutions that can positively affect society.”*

— **RAJASHREE BIRLA**, Chairperson, Aditya Birla Foundation and Director, Aditya Birla Group of Companies



*The contribution of the Mumbai Center to the intellectual life of the country and its outreach to international students and other members of the Columbia community are especially valuable during this pandemic.”*

— **SHARAD SANGHI**, Founder, CEO and Managing Director, Netmagic Solutions Private Limited





# STUDENT PROGRAMS

Photo taken on September 2, 2010

## Initiative for International Students

Due to lockdowns around the world caused by the pandemic, many international students were sheltering at home and could not travel to New York City. The network of Columbia Global Centers rose to the occasion and designed an ambitious outreach program. Endorsed as the University Initiative for International Students, study spaces were provided to Columbia students in various parts of the world to create a sense of community.

Study spaces in **14** cities

**50** “access pass” spaces

**2500+** registered students

### CONTRIBUTIONS OF THE MUMBAI CENTER

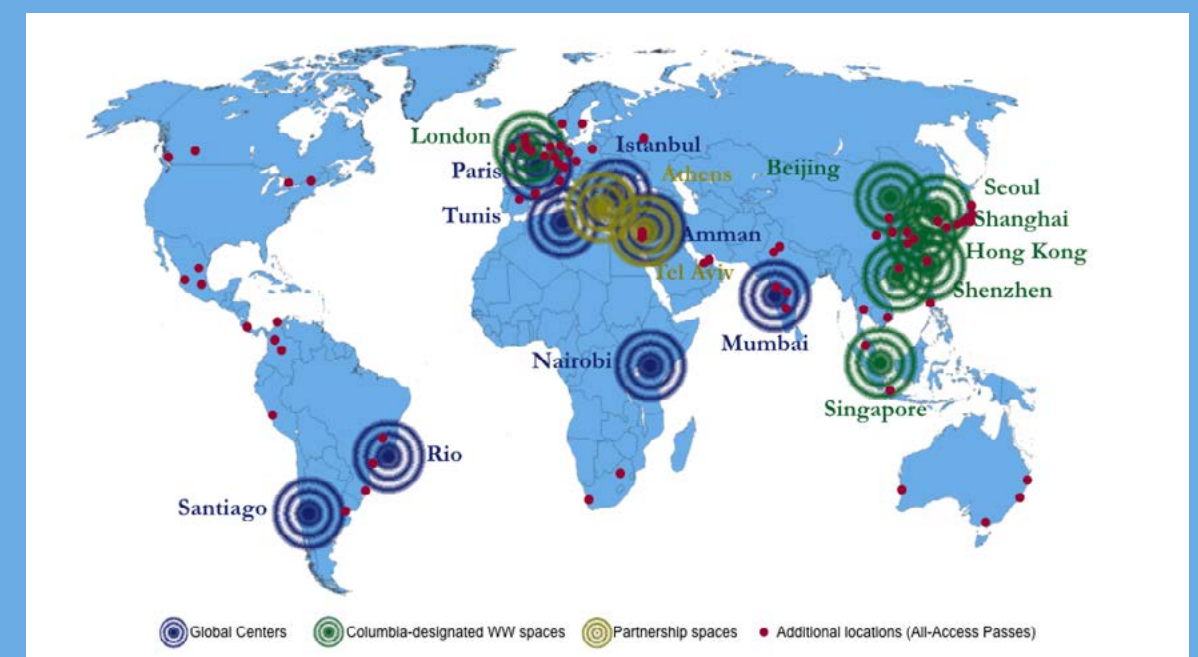
UPGRADED ITS  
FACILITIES

INSTITUTED SAFETY  
PROTOCOLS

SURVEYED STUDENT  
PRIORITIES

CONNECTED STUDENTS THROUGH  
SOCIAL MEDIA PLATFORMS

LAUNCHED AN ALUMNI  
MENTORSHIP PROGRAM





# Global Virtual Internships

The pandemic caused disruptions in practical and immersive experiences for Columbia students. To address this, the network of nine Columbia Global Centers launched the Global Virtual Internship program in Summer 2020 with a host of partner organizations around the world. Following its success, the program was extended for the 2021 academic year.

**350+** global opportunities created,  
including **39** in India

**1600+** applications received,  
including **160** for India

PARTNER INSTITUTIONS WHERE **16** INTERNS  
WERE PLACED BY THE MUMBAI CENTER

- Agua Wireless Solutions
- Aga Khan Trust for Culture
- Extrinsic Labs
- Piramal Museum of Art
- Sarmaya Arts Foundation
- Society for Nutrition, Education and Health Action
- Swapeco Solutions Pvt. Ltd.
- Youth for Unity and Voluntary Action

# Information Sessions for Applicants

India stands second in the number of international students enrolled at Columbia University. The Center conducted a series of information sessions that gave interested students, parents, professors, counselors and working professionals the opportunity to learn more about advanced studies at Columbia.

## 2019 COLUMBIA GRADUATE STUDIES FAIR

Four information sessions were held in Mumbai, New Delhi and Bengaluru, cities that form the largest applicant pool to Columbia from India. Each location featured alumni and provided opportunities for in-person and live-streamed presentations and interactions with faculty, admissions staff and alumni.

## PARTICIPATING SCHOOLS AND DEPARTMENTS

- Columbia Business School
- Graduate School of Architecture, Planning and Preservation
- Mailman School of Public Health,
- Department of Statistics
- School of Professional Studies

*“Holding a session with the Columbia Global Centers was an efficient and effective way to connect with the right audience.”*

– DR. ANUSHA SHRIVASTAVA, Department of Statistics



# EDUCATION, CULTURE AND KNOWLEDGE

## A Cultural Lens on the Development Crisis

Cultural perspectives, expressed through art, architecture, cinema and literature, provide us new ways to reflect upon and imagine a better society. This is especially profound in a year when the world continues to be rocked by the uncertainties and anxieties of the pandemic. During the past year, the Center's cultural programs concertedly addressed the pandemic in the broader context of the crisis of development.

### Pandemics in Cinema

An online event that turned a fictionalized mirror on catastrophic viruses depicted in a range of international cinema including *Virus* set in India, *Flu* in South Korea, and *Contagion* in the United States. Held on May 7, 2020, and featuring Richard Peña, Professor of Film Studies at Columbia University in conversation with the Center's Director, Dr. Ravina Aggarwal, the session probed into exploitative economic structures, fake media and misinformation, preparedness of healthcare systems, the importance of global cooperation, and our treatment of nature in the wake of unchecked development and greed. "We often turn to cinema not just to reflect on our lives but to see possibilities of lives which we have not lived... these become ways in which we can experience our darkest fears safely," observed Professor Peña.

### The Lens as Witness

An online panel on September 30, 2020, featuring Columbia University Professor of Journalism, Nina Berman, and Pulitzer Prize-winning photojournalist from Reuters India, Danish Siddiqui. Offering generous insights on photojournalism as a career and passion, the presenters gave a firsthand glimpse of urban alienation and inequality as waves of Covid-19 broke over the cities they lived in. Professor Berman's somber works portrayed New York's desertion and isolation, but also its resilience. Mr. Siddiqui documented the eerie emptiness of once bustling streets in New Delhi, queues for food, and the desperate migrant exodus that followed. The presentations threw into sharp relief the vulnerability of healthcare systems in the wake of inadequate planning and investment.







Kesi Ghat, Vrindavan

## Vrindavan in the 21<sup>st</sup> Century

The predicament of urban expansion was the subject of a lecture by John Stratton Hawley, Claire Tow Professor of Religion at Barnard College, Columbia University, who has spent over forty years visiting and doing academic work in the historic town of Vrindavan. Speaking at the Center on January 13, 2020, Professor Hawley demonstrated how tides of transformations are affecting Vrindavan, once renowned as an idyllic pastoral landscape where the Hindu deity, Krishna, is believed to have spent his early years. Citing the rollout of new infrastructure projects, changes in road and transportation, and the proliferation of new mega-temples, he equated this impetus towards modernization to a consumerist culture that

had put a strain on the town's natural and built character. "It stands for where we are as a world," Professor Hawley remarked, making a case for holistic urban development plans that foster a respect for cultural heritage and ecological conservation, while paying heed to an appetite for growth.

Professor Hawley's lecture followed a seminar he led at the Center where members of the Mumbai History Teachers Academy learned about different methodologies employed in his research, including manuscript research, oral history, evaluation of visual sources, and contemporary reportage. This was part of the Center's Historical

Methodology Series, initiated in partnership with Columbia University's South Asia Institute, to strengthen research capacity, curriculum design, and teaching among college history professors in India. Seminar participants eagerly engaged with visual and textual materials, and group exercises.

*"The series is fabulous as the teachers are exposed to new techniques and parameters of research. These can very well be incorporated into the autonomous syllabi which aims at creating interest for research and developing a research culture among students,"* said a participant.



Workshop on Historicizing Bhakti held on January 10, 2020



# HEALTH AND MEDICINE

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# Healthcare During the Pandemic

The coronavirus pandemic has had far-reaching implications on health systems globally. India too has faced high infection and morbidity rates, difficulties in implementing crisis care, partially or completely disrupted health and rehabilitation services, and setbacks to medical education. As the world looks forward to a post-Covid-19 landscape, the Center remains committed to sharing knowledge and best practices to positively affect health systems. Columbia Global Centers | Mumbai designed and organized several webinars with a focus on Covid-19. These virtual programs provided a forum for public health researchers and practitioners to disseminate innovative solutions to the challenges thrown by the crisis.



## Understanding the Virus

Programs with Columbia's Mailman School of Public Health charted the virus' epidemiology from medical, environmental, and social perspectives. Professor Kavita Sivaramakrishnan, Faculty Director of the Yusuf Hamied Fellowship Program, spoke to several news channels in India and USA about her research on the 19<sup>th</sup> century Bubonic plague in Mumbai. Professor Wafaa El-Sadr spoke at the Center about what we can learn from the HIV pandemic, while a presentation by Professor W. Ian Lipkin placed the recent coronavirus in the context of zoonotic diseases.

## Need for a Global Response

Professor Lipkin, who is a world-famous virologist and also the Director of Columbia's Center for Infection and Immunity, laid out his initiatives on preventing future pandemics on July 20, 2020, as he delivered the Third Annual Distinguished Yusuf Hamied Lecture by a Mailman faculty member. He advocated the need for a robust, well-coordinated global research and monitoring network and identified India as potentially a key player in this space. "The economic and human impact of Covid-19 will dwarf any outbreak that we have experienced so far," he remarked.

## Providing Healthcare for Covid-19

An interactive webinar was held on April 30, 2020, to showcase how nurses and nursing schools have dealt with delivering care and education during the outbreak. In her opening remarks, Professor Lorraine Frazier, Dean of the Columbia School of Nursing (CUSON), shared the School's strategic efforts in dealing with the pandemic. Professor Jennifer Dohrn, Assistant Dean, Office of Global Initiatives, spoke about CUSON's *Circles of Care*, an initiative designed to create an environment of healing and resilience, and minimize burn-out and long-term trauma among nursing professionals. With nursing education taking an online turn, Professor Kellie Bryant presented different teaching strategies that the School implemented through the use of simulation technology to upskill the workforce and optimize work systems. Professors Dohrn and Bryant had earlier hosted a symposium at the Center on December 12, 2019, focused on building capacity of nursing professionals and improving nursing education in India through the incorporation of simulation-based methods and experiential learning in nursing curricula.



Enhancing nursing education in India through simulation learning technology at the Center on December 12, 2019

## Caring for Other Health Problems

The fear of contracting Covid-19 and the difficulty of accessing care during lockdowns meant that other illnesses and preventive screenings were neglected. The Center co-hosted a panel discussion on June 4, 2020, that provided guidelines for women with cardiovascular diseases, the leading cause of women's mortality globally. Potential solutions that arose from the discussion focused on recognizing essential aspects of health interventions, strengthening existing public health programs, educating healthcare providers, addressing lifestyle behaviors, and increasing cross-linkages of healthcare with other sectors to effect changes in planning and public health services. The Center co-organized a two-part health webinar series to address the interruption in dental education and the delivery of oral healthcare during the coronavirus outbreak. The webinars showcased innovative approaches undertaken across dental facilities in India, Kenya and the United States to ensure quality oral healthcare delivery and continued dental education.



Webinar on Caring for the Heart: Women's Health during Covid-19 held on June 4, 2020



# Learning from HIV:

## AN INTERVIEW WITH PROFESSOR WAFAA EL-SADR

Wafaa El-Sadr, Professor of Epidemiology and Medicine at the Columbia Mailman School of Public Health, and global director of ICAP at Columbia University, delivered the *Second Annual Yusuf Hamied Distinguished Lecture* at the Mumbai Center on January 30, 2020. Here she speaks to the Center on key findings and lessons from her extensive work in the field of HIV and AIDS.



### Where are we currently in the fight against HIV and AIDS?

**WES:** I think over the past two decades, there have been rather remarkable achievements in addressing the AIDS epidemic, globally and in India. We have had enormous successes in expanding access to life-saving HIV treatment, which has transformed the lives of people living with HIV. There has also been progress in terms of prevention of mother to child transmission of HIV. However, while there has been substantial progress, much remains to be done. We have not won the war against HIV. HIV remains the epidemic of our lifetime and a whole generation. Today, almost half

of the people who have HIV don't even know that they are infected, so they are not able to garner the benefits of treatment and may unknowingly transmit HIV to their partners. We still have close to 2 million new infections of HIV every year. So, we have a lot of work ahead of us, and that work requires continuing to raise the resources, invest in programs for prevention and treatment, and to engage with communities in order to overcome the prevailing stigma. I fear that the premature misperception that the HIV epidemic is behind us can have catastrophic results. We must continue until we reach the finish line, the end of AIDS as a public health threat.



Professor Wafaa El-Sadr speaking on Precision Public Health: A Pathway to Population Health at the Center on January 30, 2020

### Which are the groups most in need of treatment and care?

**WES:** There is a lot of variation in the HIV epidemic and it's not the same in every country, every continent. For example, in countries in sub-Saharan Africa, the HIV epidemic has severely affected young women. At the same time, there is the realization that key and vulnerable populations also lag behind in terms of both prevention and treatment. These include female sex workers, men who have sex with men, injection drug users or other vulnerable groups like migrants, adolescent girls, and young women. This makes it very important that the response must be tailored to the needs of the affected populations and most importantly, all efforts must engage those populations every step of the way. Finally, it is important to appreciate that this epidemic is evolving and that is another important reason why we have to remain vigilant... because it's changing right in front of our eyes.



### Tell us about the work of ICAP.

**WES:** ICAP at Columbia University is a global health center that I founded now more than fifteen years ago at the Columbia Mailman School of Public Health. It was motivated because of a moment in history in the early 2000s where a huge disparity was noted, with millions and millions of people in poorer countries like India, or in Africa, being unable to access life-saving medicines to treat HIV. My colleagues and I found the situation completely untenable and unethical. We were committed to addressing this inequity. Our goal at ICAP has been to reach the most vulnerable populations to enable them to access the services they need and to be enabled to live healthy lives. Partnerships were profoundly important as was a

focus on strengthening the health systems in the countries where we work. We are also committed to the generation of new knowledge as well as enhancing the capacity of the individuals and teams we work with. Today, ICAP works in more than 30 countries around the world, in partnership with diverse organizations and agencies around the world.

### Dr. Yufuf Hamied and his pharmaceutical company, Cipla, with deep roots in India, have pioneered access to HIV medicine. Can you share your views on this?

**WES:** I get emotional when thinking about what Dr. Hamied has accomplished. He has literally saved millions of lives around the world. I recall the communities and the millions of people who were dying, they had no hope. And it was the commitment to supplying low-cost HIV medicines to the poorest of the poor that made a huge difference. I am very proud to have had the opportunity to get to know Dr. Hamied.

### What approaches do you think are critical for tackling communicable diseases like HIV, but also other diseases like tuberculosis, malaria, and now we have coronavirus raising its head?

**WES:** There's a lot of universality in the way one needs to act in order to overcome any public health threat, whether communicable or noncommunicable. And there are many lessons learned from the HIV response. One is that knowledge is power. We have to be transparent and forthcoming in educating the population and young people in particular. When people know what to do and how to do it, they become very engaged in their own health. A second aspect to dealing with public health threats is the use of information and data. Having the right information at the right time, sharing the data and acting on this information is critically important. Third, any intervention has to be very mindful of the fears and socio-economic barriers that people face day in and day out. And lastly, we have to invest in public health. Without public health, there is no wealth and the country that invests in the health of its population is investing in its future.



# ENVIRONMENTAL SUSTAINABILITY

## Teaching Climate Change

Education is an essential element of the global response to climate change. It helps people understand the impact of global warming, enables informed decision-making, encourages changes in attitudes and behavior toward sustainable lifestyles, and innovates solutions for increasing adaptation and mitigation. Yet very few universities in the world, and almost none in India, have substantially integrated climate-related courses into their curricula, and systematic research and teaching about the subject lags behind in Indian colleges.



*College faculty participating in a workshop on teaching climate change led by Professor Adam Sobel at the Center on December 6, 2020*

### THE CLIMATE EDUCATION INITIATIVE

**A seminar series for building conceptual and methodological capacity of science college faculty in India on climate change in partnership with Columbia University's world-renowned Earth Institute**

The inaugural session of the series was led by Adam Sobel, Professor of Applied Physics and Applied Mathematics, on December 6, 2019. Professor Sobel's presentation showed the importance of scientists working on models for extreme weather. It drew from his research on the risk to coastal megacities from storms and sea-level rise, especially to New York and

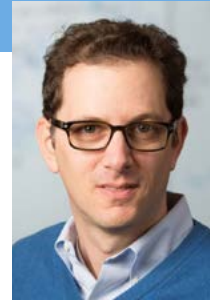
Mumbai. Participating representatives from the science departments of educational institutions, including Jai Hind College, the Institute of Science, and Ruia College, asked multiple questions related to measurement and monitoring. They were given reading references and other guidelines to design integrated and interdisciplinary coursework on climate change.



# The Importance of Climate Research:

## A CONVERSATION WITH PROFESSOR ADAM SOBEL

With a view to bringing research on urban climate hazards into the public domain, the Center has been engaging with various programs and projects. In this interview, Adam H. Sobel, Professor in the Department of Applied Physics and Applied Mathematics and the Department of Earth and Environmental Sciences at Columbia University, speaks to the Center about his research in India.



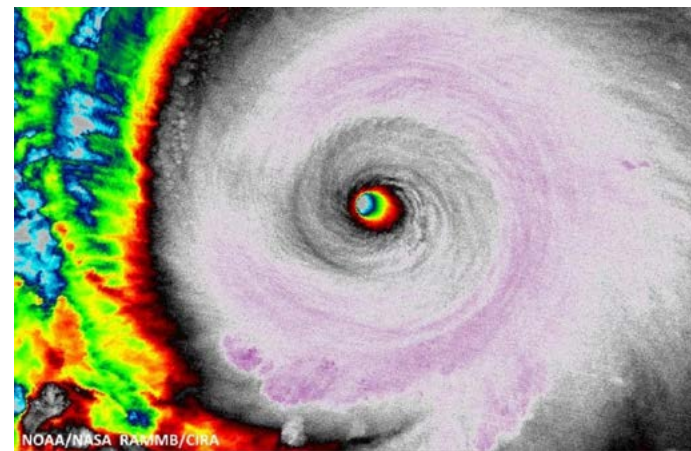
### Describe your research on storm surge and cyclones.

**AS:** My colleagues and I have been studying Tropical Cyclones, also called hurricanes, and their relationship with climate for several years. In recent years, our work has taken a turn from just seeking scientific understanding to also studying the applied science of cyclones – i.e., what kind of risks they pose to human society, and in particular, calculating the chance of a rare and severe storm hitting different parts of the world. In my case, my interest in this area grew in the years after Hurricane Sandy hit New York City. I became actively engaged and aware of the human relevance of calculating these kinds of risks. Our work is important for the public sector as well as insurance companies in the private domain.

### What interested you in India?

**AS:** After Hurricane Sandy, I did a lot of public communication and also wrote a book, *Storm Surge*, which was read by Amitav Ghosh who was separately working on his own book, *The Great Derangement*, and who then wrote to me to get my scientific perspective on whether a Sandy-like storm could also hit Indian coastal cities like Mumbai. At that time, I had no knowledge of Mumbai but I did know that while cyclones in the Arabian Sea are very rare, the possibility cannot be ruled out. We had just been developing a Tropical Cyclone Hazard Model that was designed to answer exactly this sort of question, and we realized that Mumbai could be an ideal locale to test it. I found out that Columbia has a Global Center in Mumbai. The Center Director encouraged me to apply

for a research grant from the President's Global Innovation Fund and we got it.



Thermal scan of a cyclonic storm as seen from space

### Please elaborate on the role that the Mumbai Center played in your India research.

**AS:** So most of our Columbia team, in particular Suzana Camargo, Chia-Ying Lee, Kyle Mandli, and myself, came to Mumbai in early 2017. The Mumbai Global Center was very helpful in organizing a workshop with scientists, government officials, a few journalists, and activists. Later that year, I came back with another colleague and met different people, including local disaster management officials. Cyclone Ockhi had narrowly passed the city's coastline – within a few hours of my plane landing in fact – increasing the significance of this work. We kept working on our research and published multiple papers. Then in June 2020, a weather disturbance over the Arabian Sea, just off the west coast of India, caused winds, rains and storm surge in Mumbai, and significant damage just to the south. It was declared to be a

Cyclonic Storm and given the name "Nisarga." It wasn't a major disaster for Mumbai in the end, but it was a very near miss. Interest in our research really surged as a result.

While I can't say what precise impact our work has had, because it is hard to measure, I certainly know that it has attracted some attention from the local media, research scholars, and academics. Colleagues from the Indian Meteorological Department have also been very receptive. As an output of all this, we have taken on an additional research project. At the urging of colleagues in the

Indian Institute of Tropical Meteorology, Pune – with whom I met on my second trip to India for our Mumbai project – we applied for a grant under the India Ministry of Environment's Monsoon Mission project. We now have a project funded by the Government of India at Columbia University, to study the monsoon and how to better predict it.

The Mumbai Center has been very active in connecting us with different stakeholders. This has led to more active engagement at the local level as well as more India-focused research at Columbia.



Effects of Cyclone Nisarga in Mumbai

### Can you share your thoughts on the Center's Climate Education initiative?

**AS:** Clearly, interest in Climate Change is growing in India, just as in other parts of the world. I was impressed to see the interest of college faculty members at the event you organized. Only some of them have been teaching Climate Change in their curricula, but all of them seemed to be really interested in doing more to learn, to teach it, and to guide students in their research. One idea that I suggested was to engage students in developing the elevation maps of Mumbai using GPS technology, which would be very useful for local as well as international research – we could really use such maps ourselves, to be able to quantify storm surge risk. I feel it was a wonderful conversation and this will act as a stimulus for me to think

more about how the students and their faculty in India are thinking about climate, and I will be very interested to see where this goes in the future.

### How can the Global Centers enable scientists to engage with wider publics?

**AS:** The Columbia Global Centers can play an important role as a bridge between academia and the public. As more faculty and students of Columbia University visit the Centers, they will benefit from important opportunities created to engage with the wider public. Because climate change is a global issue, but one that can look quite different from our different national perspectives, it's especially important to have direct communication across national boundaries. That's where the Global Centers can play a particularly critical role.



# Protecting Nature in Urban Areas

The pandemic has offered us new ways to reflect upon what works and what is lost by living in cities, the relationship of cities to nature, and how we design cities that are resilient and manage resources efficiently and equitably. The loss of ecological habitats and wildlife extinction, especially pollinators, due to rapid urban sprawl severely threatens our food security. While India has made significant strides in protecting wildlife in rural geographies, the potential of urban India in wildlife conservation is still underestimated, and needs urgent and creative action. Columbia Global Centers | Mumbai undertook a series of programs that investigated approaches toward wildlife protection and produced videos to disseminate research and raise awareness about the need for conserving urban pollinators and other wildlife.

## Wildlife Policies for Urban India

As part of the Center's Sunder Nursery Conservation project, a symposium was organized on November 7, 2019, in New Delhi that brought together academics, researchers and practitioners working in the field of wildlife legislation and conservation. Participants deliberated on the role of science in crafting the urban wildlife agenda for India by pointing to the gaps in data and the need to create baseline information using scientific methodologies, the importance of designating undisturbed green areas as 'testbed sites' to monitor species diversity, and the need to better educate people on the legal and ecological aspects of wildlife conservation.

## Wildlife Trade and the Health Crisis

With the origins of Covid-19 being linked to illegal wildlife consumption, the Center designed and hosted a panel on June 17, 2020, that brought in experts from India, China, South Africa, and the United States to discuss issues of wildlife and its impact on global health. The webinar underscored the urgency of action on wildlife trade and protection practices, and called for re-imagining our relationship with the surrounding natural world with deeper regulatory mechanisms, media coverage to raise awareness, private sector involvement for creating reserves, visitors' programs, and integrated monitoring systems connecting health with wildlife.



## ONLINE RESOURCES

The Center also produced videos to disseminate research and raise awareness about the need for conserving urban pollinators and other wildlife. These videos were released on multiple social media channels and targeted urban publics and environmental organizations to promote an interest in urban biodiversity and conservation of pollinators like birds and honeybees.

### SOUNDS OF MUMBAI

Celebrating Earth Day on April 22, 2020, the Center produced a video on the work of Pooja Choksi, a PhD candidate at the Graduate School of Arts and Sciences at Columbia University, where she used 'bioacoustics' as a tool of analysis to digitally record sounds and analyze them to gauge the status of urban biodiversity in Mumbai during the Covid-19 lockdown.



[CLICK HERE TO WATCH THE VIDEO](#)

### THE IMPORTANCE OF HONEYBEES

Without Honeybees, 80 percent of the world's cultivated plants would disappear. The Center celebrated World Bee Day on May 20, 2020, by sharing a video on research that highlights the importance of honeybees, their critical contribution to sustainable development and food security, their social and communications systems, and the severe threats and challenges they face.



[CLICK HERE TO WATCH THE VIDEO](#)

### DON'T BEE AFRAID

Honeybees play an integral role in the food chain and in maintaining biodiversity. Due to a lack of awareness and information, many in urban India are afraid of bees and often destroy hives they see around them. This threat to honeybee populations impacts global food security and biodiversity. In partnership with the Aga Khan Trust for Culture in India, the Center launched this campaign to increase awareness about honeybees and inspire citizens to participate in bee conservation efforts.



[CLICK HERE TO WATCH THE VIDEO](#)



# BUSINESS AND ECONOMIC OPPORTUNITY

## Supporting Social Entrepreneurs

Founding a social enterprise requires a passionate and purpose-driven approach that goes beyond creating economic value. It entails addressing social, environmental, and cultural factors in the business one is building. As founders of startups develop solutions for pressing social problems, they need mentorship and training in addition to infrastructural and financial support.



*Distinguished panel of investors and advisors at the Demonstration Day on September 29, 2020*

**THE URBAN WORKS INNOVATION CHALLENGE** is an incubation and acceleration program that provides direction to the dreams of several social entrepreneurs. Begun in 2018 as a joint initiative by Columbia Global Centers | Mumbai and the Fu Foundation School of Engineering and Applied Science at Columbia University in partnership with The CoWrks Foundry and with support from the RMZ Foundation, the challenge celebrated its second successful year.

### ACTIVITIES AND OUTCOMES FOR 2019-2020

- **5** winning startups selected for their solutions to urban sustainability and safety
- **7** expert workshops and panel discussions held
- **9**-month mentorship program, **21** physical and virtual Training and Mentoring sessions held
- Participation by noted academic institutes, government bodies, and private organizations
- Distinguished Columbia University alumni served as project Advisors
- **5000+** website pageviews and **65,000+** impressions on LinkedIn alone for audiovisual resources created



## MUKUL CHHABRA: Recycling Waste

Mukul Chhabra's tryst with scrap began with childhood visits to his uncle's scrapyards. When he first saw the fires at the Okhla landfill through his hostel window, the idea for founding Swapeco was born, despite him knowing the stigma associated with waste in India. He designed an app that connected individual homes, small businesses, and corporations – basically anyone with scrap to dispose of – with authorized recyclers via a workforce of smart *kabadiwallas* that the company had vetted and trained. Along with fellow university students, Ashutosh Kumar and Vineet Kumar Rana, who became Swapeco's Chief Technology Officer and Chief Operations Officer respectively, Mukul incorporated the company in February 2019.



[CLICK HERE TO WATCH THE VIDEO](#)

In the waste management ecosystem, Swapeco is tackling a sticky issue with a lean approach. Mukul's passion for improving the lives of waste-pickers and eliminating the evil of landfills from the countryside remains a real success story.

“The Urban Works Innovation Challenge has helped transform us from techies to business owners, providing us with enough confidence to take our product to market, form meaningful partnerships, and incorporate equity investment.” – **MUKUL CHHABRA**

## CODY SOODEEN: Providing Clean Drinking Water

When Cody Soodeen, first heard of biomimicry during an architecture class in school, he was astounded. Taking inspiration from this incredible concept, he set off to solve the problems of water scarcity and founded Kara Water, a drinking water brand that creates water from air. Cody leads the team at Kara Water as its Chief Executive Officer while his best friend and environmental engineer, Michael Di Giovanna, leads operations and Bill Irvine, a Columbia Business School alumnus, serves as the Chief Financial Officer of the company. Cody and team understand that customer discovery and validation remain the holy grail of the startup world and



hence they have set out to build a product that doesn't provide function alone, but can be incorporated in their customer's lifestyle.

“The Urban Works Innovation Challenge provided a strong foundation for Kara Water to take a leap in the Indian market, where we hope to provide a long-term alternative to bottled water and reverse osmosis-based purifiers.” – **CODY SOODEEN**

## KANISH AGGARWAL: Improving Water Efficiency

Ever since childhood, Kanish Aggarwal cared deeply about the problem of water scarcity. He met Rohit Nara through a mutual friend and in 2018, along with Sorish Arora, joined Agua Wireless Systems that Rohit had founded to solve the water crisis in India's cities. Agua's journey began with water-level controllers and they gradually diversified to other product lines such as water billing systems and sewage treatment plant automation. Eventually, the plan for Kanish and the team is assisting the water supply board in distribution management at a city-wide level. Agua believes in making people aware of the urgency of the water crisis that Indian cities face while



[CLICK HERE TO WATCH THE VIDEO](#)

remaining cognizant that the end-consumers of their tech and product assembly will seek a return on investment at every juncture.

## AMIT MALIK: Caring for Mental Health

Innerhour is the brainchild of psychiatrist Dr. Amit Malik, who established Innerhour upon realizing that mental health is a hugely underserved area in India. Innerhour considered user input over a long period of time and today, it is a comprehensive mental health curation platform backed by technology. Amit believes in an open culture at Innerhour and along with his co-founder Neha Kirpal, who leads PR and marketing, he has created a team that is mission-driven in its approach and comprises a mix of technologists and psychologists. According to Amit, the mental health space in India is poised for change, and they



[CLICK HERE TO WATCH THE VIDEO](#)

are here to establish themselves for the long-term.

## AKSHARA BARU: Preventing Sexual Harassment

Akshara Baru, a graduate from Columbia University's School of International and Public Affairs, is committed to gender security at the workplace. She established Extrinsic Labs, a startup that uses behavioral insights, gamification design, and tech to create modules for organizational development, but more specifically for prevention of sexual harassment in Indian workplaces. As compliance with Indian law provides a potentially robust market for its locally customized PoSH



gamification software, Urban Works has provided Extrinsic mentorship support to enable the startup to make the leap forward.



# Faculty Advisory Committee

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University Professor; Denning Family Professor of Sustainable Development in the Department of Ecology, Evolution and Environmental Biology

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**GAURI VISHWANATHAN**

Class of 1933 Professor of English and Comparative Literature, Department of English and Comparative Literature; Director of the South Asia Institute at Columbia University



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*Team Visit to the Thane Creek Flamingo Sanctuary*

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