



Schmidt Science Fellows is an initiative of Schmidt Futures, in partnership with the Rhodes Trust

Annual Report 2019-2020



 SCHMIDT FUTURES

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TRUST

Developing the next generation of science leaders
to transcend disciplines, advance discovery, and
solve the world's most pressing problems.



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Executive Director's Review



What a year this has been for the world, for science, and for the Schmidt Science Fellows program. I have never been more proud to be a scientist; I have never been more proud of our Program's mission to harness the power of interdisciplinary science to make a positive impact on the world; I have never been more proud of our Fellows and their dedication to scientific discovery; and I have never been more proud of the incredible Schmidt Science Fellows Program team, sponsors, partners, and friends for all that they do to help realize our vision.

2019-20 Annual Report: A Story of Two Parts

In July 2019 when we welcomed, for the first time, two cohorts of Fellows to a Fellowship event at Rhodes House in Oxford, UK, we were unaware of the global pandemic that would emerge later in the year and the impact it would have on the world and our Fellowship. This Annual Report, our second, reviews the period August 2019 to July 2020 which includes the transition of our inaugural Fellows into our Senior Fellows community, our 2019 Fellows' progress in their Fellowship Year, and the selection of our third cohort in April 2020. It is a story of two parts – the first half of the year reflects our ongoing development and evolution, while the story from March 2020 onwards inevitably reflects the response of the Program, our Fellows, and the world to the impact of the COVID-19 pandemic.

Sympathy and Gratitude

Throughout the personal and professional challenges that our Fellows, Program team, and our many friends and partners have faced during the pandemic, we are grateful to everyone for their continuing contribution to the Fellowship and its members. We recognize that it has been a difficult year for everyone as our lives and expectations have been thrown into disarray. We also acknowledge that for some of our friends, colleagues, and Fellows, the impact of COVID-19 has been felt much closer to home. Our sympathy and best wishes are extended to anyone in our broad community who has been personally affected.

This Annual Report is an opportunity to extend our gratitude to everyone who contributes to the success of interdisciplinary science, our Fellows, and the Program, and to share the stories from our Fellowship that demonstrate how that support is directly enabling positive impact in the world.

We extend profound thanks to our colleagues at Schmidt Futures and the Rhodes Trust for their combination of advice, guidance, and operational support. I would especially highlight the wisdom and generosity of our partners in agreeing to support the Emergency Placement Extension Grant scheme, which allowed our active Fellows whose science was impacted by the COVID-19 pandemic and laboratory closures to apply for extra support.

We are indebted to our partners at Nominating Institutions for helping to identify the outstanding scientists who share our Program goals, and Reviewers and Selectors for their expertise in selecting the Schmidt Science Fellows. We are thankful to our growing community of Principal Investigators for hosting Fellows in their groups and guiding their science. We are grateful to everyone involved in delivering the Global Meeting Series for Fellows both in-person and during the shift to virtual delivery. From Faculty Directors, to speakers, to institutional staff, our meeting hosts are integral to these special and formative experiences.



I want to take the opportunity to express my sincere gratitude to the Program team and the members of our Academic Council. Their dedication to our Fellows and their singular focus to our mission has never been more important or more deeply felt than this year.

We thank Eric and Wendy Schmidt for their generous sponsorship of and engagement with our Fellowship. Their commitment to investing in the talent of extraordinary future leaders brings us hope for a better tomorrow.

Finally, we are deeply grateful to all of our Fellows for providing the impetus and inspiration for our work and for joining us on this journey of co-creation.

Breaking Down Barriers to Science

This year, more than ever, we have witnessed the need for interdisciplinary science, a globally engaged research community, and empathetic leadership. The global response to the COVID-19 pandemic has seen the barriers between scientific disciplines and between science and society dissolve as resources have been mobilized to focus on a single challenge. As we see the first light at the end of the tunnel for this pandemic, we must not lose sight of the breadth of the challenges our world faces and the need we have as a society to remember these crucial learnings in a post-pandemic world. As a Program we are committed to working with partners to identify the system-wide obstacles that hold back interdisciplinary progress.

Reflecting on Racial Equity in Science

If science is not reflective of society and not part of the broader discourse, then we cannot expect to earn the trust of the public or to deliver new knowledge and advances that can be utilized around the world. Schmidt Science Fellows is proud that within our community of 56 Fellows we have a multitude of experiences and backgrounds, but we recognize that as a Program and as individuals, we must strive to represent the global community that we wish to serve.

With that commitment in mind and within the context of the international focus on racial equity and diversity in 2020, we assessed and strengthened our curriculum to ensure Fellows receive the skills and tools necessary to be just and equitable leaders. We also engaged in programming for our Fellows and Senior Fellows to explore and discuss race equity in science, including a session in partnership with the Rhodes Trust and the Atlantic Institute. These sessions provided opportunities for invited speakers and Fellows to share their own experiences and perspectives, and to consider strategies to ensure greater racial equity in the future. As a Program, we commit to continue to review our processes and procedures to promote diversity in all forms.

Looking Ahead

In the coming months, we will be sharing an update to our strategic plan which builds on the learnings from our initial start-up phase and provides a strong basis for the Fellowship for the next five years. It will cover the next stage in growth for Selection, Global Meetings, lifelong community, and the infrastructure to support the Fellowship. It will also focus us clearly on our ultimate purpose and ambition to harness interdisciplinary science for public good.

Future pandemics, the climate crisis, our aging population, non-infectious disease, and food security, to name a few – these global-scale challenges will never be tackled through narrow approaches alone. At Schmidt Science Fellows, we have a vision of a future where interdisciplinary science flourishes without limit, accelerating discoveries to benefit the world and improve quality of life for all. This year we all felt the importance of that vision and we now plan to double down on a commitment to realize it, together.

Dr. Megan Kenna
Executive Director



Chair of the Academic Council Review



Our Fellows are exceptional individuals. They are some of the brightest and most ambitious early-career scientists in the world today and each of them is motivated to do something truly far-reaching and beneficial through their work. They embark on a difficult journey, willingly leaving behind the certainty of a field where they are an expert to learn something new and once again becoming a novice in the lab. Our Fellows set out in their new discipline in a new group, usually in a new city, and often a new country.

We support our Fellows in their personal and professional journeys, during their initial interdisciplinary pivot, Fellowship Placement, and beyond as they continue their careers whilst remaining in our Fellowship family as Senior Fellows. The most regular and personalized way we do this, especially through the build-up to and during Placements, is through confidential mentoring with a member of our Academic Council.

Our mentors work with Fellows to reflect on the issues they face, their development as scientists, what they need to succeed in their work, and how this might develop in the future. We aim to provide an environment which is open and supportive, honest and reflective – and is valued by all Fellows as a personal core of the Program.

This has been even more invaluable this year as COVID-19 restrictions have impacted the normal conduct of scientific endeavor. Lab access has been limited, data collection has been halted, and it has been difficult to speak directly to senior scientists and peers. Throughout lockdowns and socially distanced re-openings, Fellows have been faced with urgent questions about what the pandemic might mean for their lives, work, and future prospects. Some have found a new urgency to work which directly relates to the pandemic, others have faced real frustrations and have had to find ways of sustaining their science at a time of major disruption.

One way we have sought to increase mentoring support and broaden the expertise Fellows have access to has been the introduction for our 2020 Fellows of bi-monthly group meetings that rotate around our Academic Council and the Chief Scientist of Schmidt Futures, our colleague Stu Feldman. These group meetings supplement regular one-on-one mentoring conversations.

It is a privilege and a pleasure to support such outstanding Fellows at a crucial time in their lives and careers. I am grateful to the Academic Council for the care with which it has considered the challenges facing our Fellows in this extraordinary year. I am also thankful for all our mentors ensuring our programme fulfils the academic aims of the Fellowship in supporting the needs of a cohort of exceptional young scientists with a deep commitment to the highest quality interdisciplinary science.

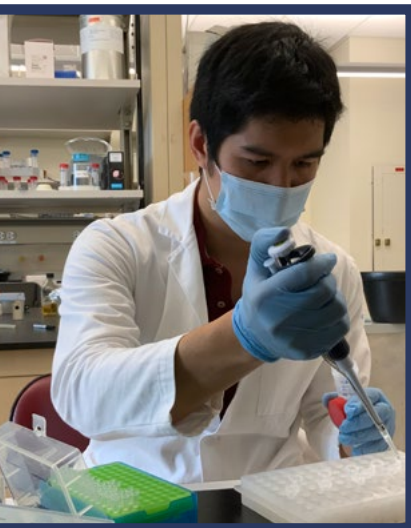
Keith Burnett

Professor Sir Keith Burnett FRS CBE
Chair of the Academic Council



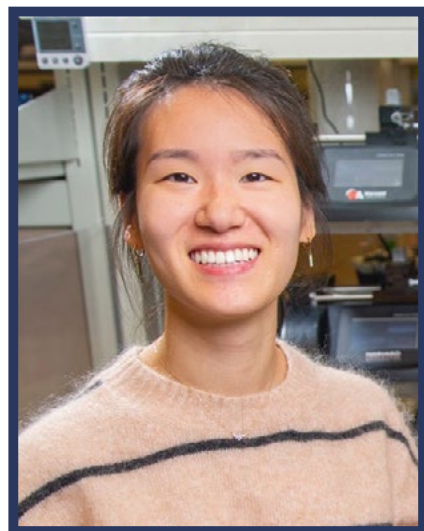
Fellows Fighting COVID-19

The scientific response to COVID-19 has been impressive, inspiring, and, above all, interdisciplinary. Schmidt Science Fellows from all cohorts and disciplines refocused their science during 2020 to play their part in the global scientific effort to combat COVID-19 and its effects.



Dr. James Chen, 2020 Fellow, has been working with colleagues in his PhD lab at Rockefeller University to investigate an enzyme that has a central role in how SARS-CoV-2 replicates in the body. The work has potential implications for how drugs such as remdesivir work.

The group has been studying the SARS-CoV-2 RNA-dependent RNA polymerase (RdRp, also known as nsp12). Specifically, James and his colleagues are interested in the SARS-CoV-2 nonstructural proteins (nsp's) that assemble with RdRp to affect its function and how antiviral drugs target and affect the activity of this enzyme. The Rockefeller group has solved a cryo-electron microscope structure of the SARS-CoV-2 RdRp in complex with the nsp13 helicase which was published in *Cell* on July 28, 2020.



Dr. Jina Ko, 2018 Fellow, pivoted from her research work at Massachusetts General Hospital to take on project management responsibilities in the Diagnostics Accelerator group at the Mass General Brigham Center for COVID-19 Innovation. Here, she helped to set up a lab for COVID sample processing and to communicate between group leaders and sub-group leaders. The Diagnostics working group at the Center achieved identification of various diagnostic platforms, evaluation of the performance of these tests, and acceleration of the deployment of emerging diagnostic technologies that can impact the current COVID-19 pandemic. Currently, Jina is involved in writing a manuscript that evaluates the performance of different serological lateral flow assays (LFA) that can be implemented for non-laboratory use.



Dr. Fernando Soto, 2020 Fellow, is working with colleagues at Stanford University to develop a non-invasive and wearable adhesive patch that is easily integrated onto any protective mask to collect SARS-CoV-2 virus samples from exhaled breath over several hours (>3 hours). Fernando believes constant sampling to identify asymptomatic patients in the general population is key to stopping the spread of the virus.

The proposed collector devices are inexpensive and can be made in large quantities, enabling rapid transition to widespread use. Fernando hopes this research work builds upon the current need to wear a protective mask and provide a foundation for easily scalable and early detection of sampling platforms to aide in understanding disease progression and prevention in the current and future pandemics.

Dr. Shriya Srinivasan, 2020 Fellow, has been leading work as part of a Boston-area consortium to devise and validate the safe sharing of a ventilator multiplexing solution for COVID-19 patients. The research involves scientists and engineers at MIT and Brigham and Women's Hospital. The system design for the Individualized System for Augmenting Ventilation (iSAVE) allows one ventilator to be shared with multiple patients but does not compromise on personalized volume and pressure settings for each patient. The iSAVE's design and validation on ICU ventilators and large animals were published in *Science Translational Medicine*. Through Project Prana, a 501c3 nonprofit, the iSAVE system, which is currently under review for Emergency Use Authorization through the FDA, is being translated to hospitals in countries including India, Bangladesh, Ecuador, Italy, and Venezuela.





Dr. OJ Watson, 2020 Fellow, is developing COVID-19 transmission models to support public health efforts in low and middle-income countries (LMICs). Currently based at Imperial College London, OJ has been focused on developing software for health agencies to utilize in scenario planning and has collaborated with economics teams at the WHO. His work with the WHO has included providing epidemic scenario projections for each country in the world that feed into the WHO COVID-19 Essential Supply Forecasting Tool (ESFT), which assists governments to estimate their needs in response to the pandemic. This work has been of increasing importance as many countries head into second waves and with many LMICs lacking reliable data on COVID-19 prevalence.

OJ has turned his skills to supporting other modeling questions around COVID-19, including how countries can effectively come out of lockdowns, the use of alternative data sources to expose the true level of mortality caused by COVID-19 in the developing world, and informing future vaccine allocation strategies. A further project has involved working with partners in Sudan to infer the size of that country's first wave of COVID-19, help predict the size of a second wave, and the optimum policies to reduce further deaths.

Schmidt Science Fellows has granted OJ special dispensation to defer his Fellowship Placement until 2021 to ensure he can complete his COVID-19 related work.

Dr. Deepak Krishnamurthy, 2020 Fellow, has been working in a team at Stanford University as part of the multi-university, multi-industry, international PezGlobo collaboration developing an easy and quick to build ventilator for communities with limited access to these life-saving devices. The collaboration's 'Pufferfish' is an open-source and rapidly scalable full-feature ventilator. Deepak helped design active-valves for the pneumatic assembly and is also developing the power-management system of the device.



Dr. Saki Takahashi, 2019 Fellow, is working with colleagues at the University of California, San Francisco to collect and analyze data on SARS-CoV-2 antibody responses over time. She has been involved in the design and implementation of a study testing for antibodies in the San Francisco Bay Area to support local public health agencies, and is studying the magnitude and kinetics of antibody responses after infection through a longitudinal cohort study. Saki has been combining her background in infectious disease modeling with skills in molecular epidemiology developed as a Schmidt Science Fellow to leverage serological data sets to understand and respond to the disease. She has also been developing analytical methods for using serological data to obtain accurate estimates of infection levels in a population.



Dr. James Briggs, 2019 Fellow, worked with his Fellowship PI, Feng Zhang at the Broad Institute of MIT and Harvard and a large interdisciplinary team – including software engineers, scientists, data privacy experts, government relations managers, and marketing and communications teams – in a project aimed at reducing the spread of COVID-19 in individuals who may not realize they have it.

James analyzed data collected using a mobile app called How We Feel that tracked symptoms, behavior, and demographic information from about 500,000 people across the US from early March 2020. Using this complex data, James mapped the symptoms that COVID-19 patients experience over time and applied machine learning models to predict the results of gold-standard molecular COVID-19 test results. The analysis produced a surprisingly high degree of accuracy - around 80% - showing how free-to-use and scalable mobile technology can be utilized to help people understand if they are potentially contagious without a full COVID-19 test.



Peyton and her team at BigHat Biosciences

Dr. Peyton Greenside, 2018 Fellow, is CSO and Co-Founder of BigHat Biosciences. BigHat has applied its innovative platform coupling AI/ machine learning techniques with a high-speed wet lab to design a potent bispecific antibody that neutralizes live SARS-CoV-2. The BigHat molecule targets two complementary epitopes on the surface of the SARS-CoV-2 Spike protein to increase potency and likely reduce the chance of viral escape through mutation. As a single-chain antibody, BigHat's molecule is suitable for large-scale production in bacteria and can potentially be formulated as an inhalable treatment without needing cold storage for distribution.

BigHat Biosciences aims to radically reduce the difficulty of designing antibodies and other therapeutic proteins. Their AI-first experimental platform enables drug developers to create better antibodies faster and undertake novel biotherapeutic designs far beyond what's possible today. Founded by CEO Mark DePristo, formerly of Google.AI and The Broad Institute, Peyton and Advisor Theresa Tribble formerly of The Engine and EverlyWell, and trained at Harvard Business School, BigHat is a seed-stage biotechnology company based in the San Francisco Bay Area. BigHat is backed by 8VC, AME Cloud Ventures, and Innovation Endeavors and counts among its advisors Brian Kobilka, Nobel Laureate in Chemistry, Stan Lapidus, serial life-science entrepreneur; and Nigel Reuel and Javin Oza, experts in cell-free protein synthesis.



Dr. Hal Holmes and **Dr. Fahim Farzadfard**, two members of the 2018 cohort of Schmidt Science Fellows, came together at the start of the pandemic to combine their expertise and knowledge to advance an interdisciplinary approach to COVID-19 testing. Fahim is the CTO and Co-Founder of MitoLab in Boston and Hal is Chief Engineer at Conservation X Labs in Seattle. Both collaborated to combine engineering and chemistry with the aim of repurposing a hand-held DNA testing device Hal invented to identify wildlife samples to quickly test samples for SARS-CoV-2 RNA.

This interdisciplinary collaboration by two Senior Fellows has the potential to address the absence of point-of-care (POC) molecular diagnostics for COVID-19 in low-resource settings. The test can detect SARS-CoV-2 molecular markers in saliva samples in under 30 minutes and offers rapid, decentralized testing as the system requires no cold-chain storage.

Hal and colleagues at Conservation X Labs have led on engineering, product design, and marketing, with Fahim and colleagues at MitoLab having developed SARS-CoV-2 RNA detection chemistry to work within the device.

The work has been supported by the Sergey Brin Foundation and the joint team is part of the NIH RADx-Next Program. The device is on track for Emergency Use Authorization approval from the FDA with the aim to have it in community use in early 2021.

Clinical trials have been conducted with Beth-Israel hospital in Boston and Conservation X Labs and MitoLab are in talks with the governors/mayors of multiple cities including Davis and San Jose to help with reopening plans for those cities once the testing kit is launched.

Global Selection

The Schmidt Science Fellows community is built on the foundation of a Nomination process that ensures we identify the most promising early-career candidates completing their PhDs at the world's leading science and engineering institutions. We look for a broad range of characteristics in Schmidt Science Fellows – from scientific curiosity and collaborative spirit to a restless ambition to make a difference, and a commitment to interdisciplinarity. Our Selection process is highly competitive and entails a robust online assessment of academic excellence as well as an interview system that captures multiple perspectives when assessing criteria relating to character and potential.



The 2020 Schmidt Science Fellows cohort

“These exceptional early-career scientists join a growing community of Schmidt Science Fellows working to make transformative contributions, including new ways to fight against pandemic pathogens. Eric and I are excited to see what they can accomplish together.”

Wendy Schmidt

Selecting the 2020 Cohort

Eric and Wendy Schmidt announced the third cohort to join our community, in April 2020, following a rigorous, multi-stage Selection process that was adapted at the early stages of the COVID-19 pandemic. This involved:

91
Reviewers and Selectors

335
submitted applications

81
different Nominating Institutions
across
18
different countries

45
Finalists at the
Final Selection stage

“This new group of Schmidt Science Fellows demonstrates our commitment at Schmidt Futures to investing in talented people who can make the world a better place, in the long run and even during some of the most challenging times in recent memory.”

Eric Schmidt

The **22** Fellows of the 2020 cohort, **12** female and **10** male, represent **8** nationalities, **10** nations of origin, and **17** Nominating Institutions.

The 2020 cohort span a wide breadth of scientific disciplines from chemical engineering to behavioral neuroscience and are now embarking on Fellowship Placements that see them pivoting into synthetic biology, mathematics, and more. In common with earlier cohorts, the 2020 Fellows are motivated by ambitions to make a positive impact on the world and are contributing to efforts to tackle significant global challenges such as climate change, environmental degradation, and infectious and non-infectious diseases.

Our Fellows

Our full Fellowship community now numbers 56 Fellows, 30 female and 26 male, nominated by 35 different Nominating Institutions in nine different countries. The international diversity of our Fellowship community remains very high, with 25 nations of origin represented in our community. We were delighted that the 2020 cohort includes Fellows who grew up in Central and South America, meaning the community now represents Fellows with backgrounds in every inhabited continent. The disciplinary breadth of our Fellowship community is broadly representative of the disciplinary remit of nominated candidates over the past three years, with approximately 30% of our Fellows coming from Engineering backgrounds, 29% from the Biological Sciences, 14% from Physics and Astronomy, 13% from Chemistry, 7% from Mathematics and Computing, and 7% from the Earth Sciences.



Our Selection Criteria >



Extraordinary Achievement

Clear record of academic achievement of the highest quality in the sciences and an extraordinary degree of intelligence.

Intellect



Scientific Curiosity and Innovation

High degree of intellectual curiosity combined with energy and creativity; a record of continuous innovation and/or use of new technologies.



Alignment with the Program

Interest in pursuing a year or more of postdoctoral study in a field different from the applicant's PhD discipline and a belief that interdisciplinary science and the taking of appropriate scientific risks are important for the advancement of discovery.

Programmatic Fit



Collaborative Spirit

History of effective collaboration with diverse team members.

Leadership



Global Ambition for Social Good

Desire to use one's personal talents and science to make a positive difference in society and the world.



Character and Leadership

Genuine and demonstrable potential for science leadership; displaying perseverance, resilience, a moral compass, and a galvanizing force of personality.



2020 Fellow, OJ Watson seeks to quantify the genetic background of previous emergence of malarial drug resistances to predict the risks posed today.

A universal and overriding characteristic of a Schmidt Science Fellow is academic excellence in science and each year the incoming Fellows represent some of the highest achievers in their institutions. This is reflected in the number of Fellows receiving awards from their institutions or other bodies for outstanding achievement in their doctoral theses.

Recognition for the 2019 cohort included Dr. Jyotirmoy Mandal receiving the Simon Prize at Columbia University, Dr. Ina Anreiter receiving the John Leyerle-CIFAR Prize for Interdisciplinary Research at the University of Toronto, Dr. Mina Konaković Luković gaining a Doctoral Program Thesis Distinction at École Polytechnique Fédérale de Lausanne, and Dr. Andreas Schlueter for his Doctoral Award at Karlsruhe Institute of Technology. Since April 2020, the 2020 Fellows have been recognized so far through Dr. Yang Guo's award by the Chinese Society for Environmental Sciences for his PhD work in environmental science and engineering at Tsinghua University.

Adapting our Processes to COVID-19

The impact of COVID-19 was felt on the Nomination and Selection processes for the 2020 cohort, with the seriousness of the global pandemic apparent as we prepared for the Final Selection stage.

In March 2020 we took the decision to switch from in-person interviews with Final Selectors in New York City to a virtual process, with over 70 Selectors and candidates joining interviews from across eight different time zones over two days in early April 2020. We are indebted to all our Final Selectors for accommodating these last-minute adaptations and to them and the Academic Reviewers and Pre-Selectors who enabled us to again identify the highest quality candidates for the Fellowship.

With ongoing COVID-19 considerations and the learnings from a successful adaptation to a virtual Final Selection model for 2020, the 2021 Nominations and Selection process has been significantly adapted to build upon the successful online model. Our Nominations timeline has been adjusted to allow partner organizations sufficient time to make their initial selections, and to accommodate any interruption to their studies. We are planning to manage Final Selection as a virtual process again in 2021.

Future Developments

In the coming years our Nomination and Selection process will continue to evolve to support the future growth of Fellow numbers whilst maintaining a rigorous, efficient, and fair process.

We are committed to broadening the international diversity of our candidate pool through our efforts to both refine our application and Selection processes and to invest in increased outreach and engagement activities with Nominating Institutions and their post-graduate STEM communities.

We will continue to diversify our pool of Academic Reviewers and Selectors whilst maintaining the disciplinary expertise necessary for robust review of academic excellence and the breadth of backgrounds and perspectives necessary for the effective assessment of character and leadership potential in Schmidt Science Fellows.



2020 Fellow, Gabi Heller is pivoting from computation into experimental structural biology to uncover the rules of drug binding to viral disordered proteins.



Our
56 Fellows
include
26 men and 30 women
who come from
25 different nations of origin.

Across the three cohorts of our Fellowship,
our Fellows have, to date, worked with
52 Principal Investigators
at
36 host institutions.

Engineering the Next Generation of Materials

Dr. Ahmad Omar is a 2019 Schmidt Science Fellow. Completing his PhD at the California Institute of Technology (Caltech), Ahmad used theoretical and computational tools to develop a more complete molecular description of the mechanical properties of hydrogels. Ahmad deferred a faculty job offer at UC Berkeley to pursue his Schmidt Science Fellows Placement, also at UC Berkeley. During his Fellowship Year, working with Dr. Phillip Geissler, he pivoted from soft matter engineering to explore the fields of nonequilibrium statistical physics and stochastic thermodynamics.



Tell us about your background and PhD research

Throughout my PhD in chemical engineering, I was motivated to find a topic where I could use theory and computation to provide insight into materials that might improve the human condition. That led me to working on the fundamental and appealing properties of materials called hydrogels, polymeric materials that can be used as drug delivery vectors and for wound healing agents.

A hydrogel is mainly water. They are very, very dilute so they are minimally invasive. At the same time, we can provide structure and support with different polymers to embed drugs in the hydrogel.

How has Schmidt Science Fellows supported you to develop your science?

Analytically and theoretically, I previously focused on systems that were in thermodynamic equilibrium: that means there is no net current (such as energy or mass) flowing into or out of the system. When those thermodynamic equilibrium conditions are met, you can actually do a lot of things because we know the exact distribution of states that molecules occupy.

An outstanding challenge is when you have a current in your system, such as a gel subject to external deformation, so it is no longer in equilibrium. My frustration towards the end of my PhD with being unable to theoretically describe a huge class of problems led me to pivot to pursue more theoretical research in the field of non-equilibrium statistical mechanics.

What have you valued most from your time so far as a Schmidt Science Fellow?

The support and mentorship that we've received from the Academic Council has been valuable. Keith Burnett has been able to advise me on science from his own experience having worked on condensed matter physics for much of his career.

John Boothroyd held sessions on how to manage people, how to manage a group, how to write grants, and other vital skills. Without this Fellowship, you're just expected to figure it out. It's nice having these additional primers, it just gets you thinking about things ahead of you.

How has Program support helped you?

There was a lack of wheelchair-accessible housing around Berkeley during the first months of my Placement. The Program provided me with the resources to make frequent trips to Berkeley from my home near Caltech during those early months. That was super valuable and very nice of them to recognise that I was in a difficult circumstance, and make things work.

What plans do you have for 2021 and beyond?

This summer, I'll transition to a faculty position in the UC Berkeley Department of Materials Science and Engineering. I'll use the ideas that I was able to develop throughout my Fellowship Year in nonequilibrium statistical mechanics to build a research group that really understands all aspects of the materials that we're interested in.

I strongly believe that if you have a better understanding of the connection between microscopic molecular variables and the macroscopic properties, we can engineer better next-generation materials in all contexts. It's how we make better consumer products; it's how we make better biomaterials; it's how we make new materials for energy collection and storage.

Learn more about Ahmad Omar and his science at: schmidtsciencefellows.org/fellow/ahmad-omar/



“I'll use the ideas that I was able to develop throughout my Fellowship Year in nonequilibrium statistical mechanics to build a research group...”

Fellow Training, Development, and Support

The training and development opportunities that we provide to our Fellows are key components of the Fellowship experience. These enable our Fellows to gain the skills, experience, and networks to support their growth as interdisciplinary science leaders. Our training and development strands include a postdoctoral Fellowship research placement, the Global Meeting Series, individualized mentoring program led by the Academic Council, and Fellowship Support from the Schmidt Science Fellows program team.

We have a comprehensive set of learning outcomes that guides the delivery of training elements and ensures that Fellows gain the breadth of skills and insights that they will need for their next steps and ongoing careers.

MacArthur Fellow and Stanford Professor of Mathematics, Statistics, and Electrical Engineering, Emmanuel Candès in a post-session discussion with 2019 Fellows at a Global Meeting.



Fellowship Placement

Every Schmidt Science Fellow undertakes a postdoctoral research Placement at a leading laboratory and is free to pursue this anywhere in the world. The Placement, with our support, gives Fellows unrivalled freedom to identify and progress an independent research trajectory and to develop skills in a discipline at a distinct pivot from their PhD training.

Each Fellow, up to and including members of the 2020 cohort, has been expected to embark on a Placement of 11-14 months duration, with the opportunity to apply for an Additional Study Grant of up to 12 further months to continue their research if they wished to consolidate their pivot or complete Program-supported research.

The 2019 Fellows joined a broad range of host institutions for their Placements, widening the number of institutions that have hosted Schmidt Science Fellows. Institutions hosting a Fellow for the first time included the Ontario Cancer Research Institute, University of California, Los Angeles, the National Institute of Standards and Technology's Boulder Laboratories, and Columbia University. In another first, the Program was thrilled that one Principal Investigator, Lakshminarayanan Mahadevan at Harvard University, hosted his second Schmidt Science Fellow, with 2019 Fellow Asja Radja joining the lab as 2018 Fellow Mattia Serra was completing his Fellowship Placement.

As candidates at the application stage, the 2020 Fellows were encouraged to think broadly and identify potential labs anywhere in the world to carry out their pivot. This development of the application process was introduced not to pre-select Placement locations but to encourage new Fellows joining the Program to take the time to fully explore the breadth of options and freedom that Schmidt Science Fellows support allows. Following Selection, the Academic Council supported the 2020 Fellows to develop their Placement proposals and to choose the most appropriate host institution to carry out their pivot into a new discipline.

The pandemic led to disruption for almost all 2020 Fellows in either completing their PhDs or beginning their Placements. 55% of Fellows had begun their Placements by September 1, 2020. Some Fellows will not join their Placement labs until 2021 and have received both dispensation and support in recognition of the special circumstances around COVID-19.



2019 Fellow, Andreas Schlueter in conversation with Dr. Lucy Shapiro at Stanford University during the 2020 Northern California Global Meeting.

We now have a total of 36 different institutions that have welcomed Fellows for Placements across all three cohorts. Many institutions are host to multiple Fellows or over multiple cohorts.

First hosted Fellows in 2018

Brigham and Women's Hospital
MIT
Harvard Medical School
University of Maryland College Park
Stanford University
University of Pennsylvania
The Whitehead Institute
Virginia Tech
Harvard University
University of Cambridge
University of Oxford
Massachusetts General Hospital

First hosted Fellows in 2019

Ontario Cancer Research Institute
The Broad Institute
University of Chicago
University of California Santa Barbara
University of California Los Angeles
Columbia University
University of California Berkeley
Duke University
National Institute of Standards and Technology
University of California San Francisco
Northwestern University

First hosted Fellows in 2020

Princeton University
Harvard & Smithsonian Center for Astrophysics
University College London
Harvard School of Public Health
University of Washington
University of California San Diego
University of Colorado Boulder
Boston Children's Hospital
McGill University
Sloan-Kettering
Cornell University
Wyss Institute
NYU

COVID-19 Support

The global COVID-19 pandemic and associated national and local lockdowns had an inevitable impact on the ability of many active Fellows to continue their lab-based work. Even Fellows with predominantly theoretical or computational-based research projects quickly encountered significant obstacles as access to specialist equipment and data sets was restricted as public health measures were applied to institutional campuses.

We recognized the importance of protecting both the vital interdisciplinary work and individual development of our Fellows during the peak months of the first wave of COVID-19 and continued lockdown periods. With the generous support of Schmidt Futures, we rapidly developed and launched an Emergency Placement Extension Grant (EPEG) scheme to provide up to three months of additional support for any active Fellow encountering damaging disruption to their work and to allow them to mitigate the impact of lockdowns when their labs re-opened. The scheme supported 18 Fellows and a total of 51.5 Fellow 'working months'.

Additional Support

The 2018 and 2019 cohorts of Fellows have been able to apply to the Additional Study Grant (ASG) scheme for support beyond their initial research Placements. The scheme, launched in 2019 for the inaugural cohort, aims to support Fellows who need further time to establish research credibility and expertise in their pivot field.

Each Fellow receiving an ASG must make an exceptional case for support which is determined by the Program Joint Committee. Fellows must also demonstrate that they have explored all other options for funding and that there were no other satisfactory resources to support their research.

During 2019-20, six 2018 Fellows continued their research on an ASG for periods from two-12 months, and ten 2019 Fellows will continue their work on an ASG through 2020-21. The additional support is funding project plans including the development of inexpensive cooling technology for low and middle-income countries, infectious disease epidemiology, and the development of a tropical crop forecasting model by applying machine learning to satellite and numerical weather data.

From 2021 onwards, we intend to redefine our Fellowship Placement as being up to two years by default, with a minimum research placement of 12 months, and a 12-month review point for any Fellow seeking longer support. This more flexible Placement structure will replace the current initial Placement and ASG model.



MacArthur Fellow, Dr. Manu Prakesh, shares his perspectives on science for global challenges at the 2020 Northern California Global Meeting.

Global Meetings Series

Our Global Meetings Series introduces Fellows to new research ideas, techniques, and questions; exposes them to a wide range of cutting-edge science, leading thinkers, and institutions; and delivers tailored training in science communication, leadership, and the facilitation of interdisciplinary research.

Topics covered during the full span of Global Meetings in a Fellowship Year include:

Leadership, ethics, managing diverse cross-disciplinary teams, teaching, problem-solving, communications skills – verbal, visual, and written, resilience and perseverance, budgeting, funding, intellectual property, exposure to cutting edge science and innovative research tools across multiple disciplines, engagement with interdisciplinary science organizations, policy, addressing societal and global challenges, community building, and networking.

We are proud to work with some of the world's most dynamic and forward-thinking interdisciplinary research institutions to deliver our meetings. During the COVID-19 pandemic we have quickly pivoted, working with our partners, to deliver Global Meeting content virtually and to capitalize on the opportunities this brings whilst drawing on the best of our in-person content and learning.

During 2019-20 we convened our 2019 Fellows at three in-person Global Meetings in the United Kingdom; in Cambridge, Massachusetts; and in Northern California.

Our hosts in the UK included the Rhodes Trust, University of Oxford, Imperial College London, DeepMind, University of Cambridge, and the Blavatnik School of Government. In Cambridge, Massachusetts our hosts were MIT and the Broad Institute. The February 2020 Global Meeting in Northern California was hosted by the University of California, Berkeley and Stanford University and also included meetings at Innovation Endeavors, Kleiner Perkins, SLAC, and SkyDeck.

The July 2019 meeting which took place in the UK saw an overlap of the 2018 and 2019 Fellows at Rhodes House in Oxford as our community grew to two cohorts.



Dr. Jennifer Doudna, CRISPR pioneer and 2020 Nobel Prize Winner, met with our 2019 Fellows in February 2020.

Given the need to shift from in-person convenings to virtual delivery from March 2020 due to the COVID-19 pandemic, we have since worked with partners to develop exciting new virtual programming for our Fellows. We have taken the opportunity to trial new approaches and identify the most effective virtual delivery methods for training and development. The new virtual Global Meetings began with an initial series of weekly two hour sessions, in place of the intensive one-week in-person meetings, for the 2020 cohort through May, June, and July, covering ethical leadership, cohort development, and interdisciplinary research. We have been grateful for the engagement and support of speakers and hosts including former Rhodes Trust CEO and Warden, Charles Conn, former Rhodes Trust Dean of Scholarships, Nadiya Figueroa, Alex Freeman from the Winton Centre for Risk and Evidence Communication, and a wide range of faculty members at the University of Cambridge, including Franklin Aigbirhio, Carola Schoenleib, Julian Gough, and Catherine Merrick.

“As a Schmidt Science Fellow, it is an incredible privilege to have the academic freedom to pursue high-impact research in a new discipline, paired with access to invaluable mentoring and a network of extraordinary people. The global meetings have been very helpful and I learned a lot from the career paths of outstanding scientists, the big picture of science in society, and effective science communication, to name a few things.”
Andreas Schlueter, 2019 Fellow

The virtual Global Meeting model has allowed us to introduce more cross-Fellowship programming sessions including Senior Fellows panel discussions and virtual ‘fireside conversations’ with scientific leaders. We also introduced a regular research talks session for the 2020 Fellows to share their science and proposed interdisciplinary aims, which the full Fellowship was invited to join.

The 2019 cohort continued their Global Meeting programming in September 2020 with an extension of their Fellowship year to December 2020. The 2019 cohort sessions were hosted by MIT and the Broad Institute and included a communications skills series led by the Alan Alda Center for Science Communication. These sessions included talks with leading researchers including Deborah Hung, Robert Langer, and Rainer Weiss. Fellows had the opportunity to discuss interdisciplinary leadership challenges with Eric Lander, the founding Director of the Broad Institute, leader of the Human Genome Project and, as of January 2021, nominee for Director of the Office of Science and Technology Policy and Science Advisor to the President. The program also featured well-received meetings with early-career faculty from MIT and the Broad Institute, representing a broad range of disciplines.

The 2019 cohort presented their project progress at Fellowship research talks alongside the Global Meetings.

We are committed to returning to in-person Global Meetings when the global pandemic situation develops to a point it is safe to do so. In the meantime, we have taken the decision to continue virtual programming for current Fellows until at least May 2021. Looking beyond this, we will seek to utilize the learnings from the pivot to virtual programming to ensure we are implementing the most effective in-person meetings possible, making the best use of Fellows’ time out of the lab, partnering with a diverse range of meeting hosts, and utilizing virtual delivery to complement in-person meetings where this is most effective.

Dr. Eric Lander, Founding Director of the Broad Institute and, as of January 2021, nominee for Director of the Office of Science and Technology Policy and Science Advisor to the President, has taken the time to meet with all our Fellows over each of the Cambridge, MA Global Meetings.



Mentoring

Our Fellows benefit from a personalized mentoring program, providing professional development support from experienced and internationally accomplished scientists from our Academic Council. All active Fellows are required to participate in monthly meetings with mentors and Senior Fellows continue to have ‘on request’ access to their mentor after their initial Fellowship Year.

Professor John Boothroyd joined our Academic Council in August 2019. John is Associate Vice Provost for Graduate Education and Postdoctoral Affairs and the Burt and Marion Avery Professor in the Department of Microbiology and Immunology at Stanford University. He is working with Schmidt Science Fellows alongside his commitments at Stanford and also continues as Faculty Director, leading the Stanford element of our Northern California Global Meeting.

During 2019-20, Professor Sir Keith, Chair of the Academic Council held 235 mentoring calls and meetings with Fellows. These meetings included regular mentoring with the 2019 cohort, ongoing meetings with Senior Fellows, and initial onboarding meetings with the 2020 Fellows. After joining the Academic Council, John held 71 mentoring meetings and calls in the same period with Fellows across the 2019 and 2020 cohorts. The COVID-19 pandemic plus an increase in complexity of Placements and Fellows’ personal situations contributed to more need for Academic Council support over the past year.

As the Fellowship community has developed, mentoring discussions have evolved to span a broad range of topics and challenges, including lab group interactions, learning strategies, job searches and applications, resilience, and general science discussions.

Schmidt Science Fellows appointed Dr. Liliane Chamas as Associate Academic Council Member in May 2020. Liliane is a healthtech investment principal at Oxford Sciences Innovation, a £600m venture capital firm focused on developing and scaling spinouts based on research from the Mathematical, Physical, Life Sciences and Medical Divisions at the University of Oxford. Dr. Chamas shares her specific expertise in healthtech investing and science policy with Fellows as needed. She also works with the Schmidt Science Fellows to moderate Global Meeting sessions and deliver bespoke training for Fellows.

We will be building the Academic Council further in line with the growth of the Fellowship community in 2021.

“Starting to work at a top research institution in a new field can be challenging and overwhelming. The Fellowship introduced me to an incredible community of people that are now my support, mentors, role models, collaborators, and friends. The Global meetings were invaluable learning and growing experience, both from career and personal aspects.”
Mina Konaković Luković,
2019 Fellow



The UC Berkeley SkyDeck hosted a discussion at our February 2020 Global Meeting with early stage scientific entrepreneurs.

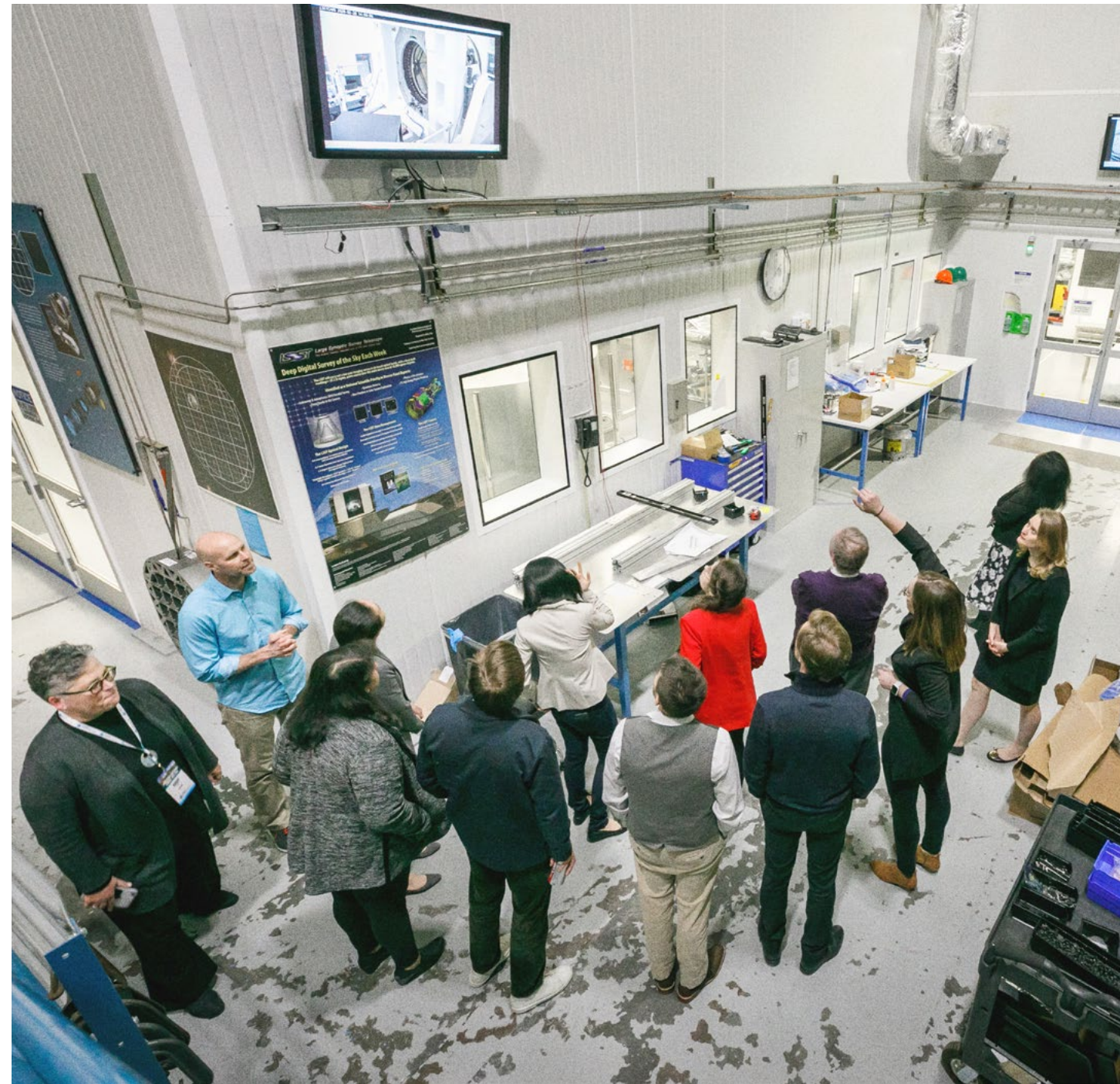
Fellowship Support

The total Fellowship experience is underpinned by a comprehensive Fellowship Support offering that aims to allow Fellows to focus on their ambitious, interdisciplinary science, and professional development.

The initial onboarding experience is a key part of Fellowship Support and ensures that new Fellows receive an induction that helps them engage with the Fellowship, introduces them to our processes and opportunities, and welcomes them into the lifelong Schmidt Science Fellows community. In addition to a welcome event for the 2020 Fellows, attended by Fellows from other cohorts representing our full community, we utilized the switch to virtual interaction to provide an enhanced onboarding experience compared to previous years. We were able to provide briefings on the Placement process, stipends, mentor allocation, and question and answer sessions.

During the past year, we have developed our Fellowship policies to provide enhanced support to Fellows who need it and to increase clarity. These policies now provide support for a range of family and health-related needs. The 2020 Fellows benefited from a newly written Fellowship Handbook that brings together all Fellows-related policies and guidance in one place.

2019 Fellows touring the facilities at SLAC during the Northern California Global Meeting.



The Future of Fabrication

Dr. Mina Konaković Luković was selected as a Schmidt Science Fellow in 2019 following an undergraduate and master's degree in Mathematics and Computer Science at the University of Belgrade, Serbia, and a PhD at EPFL in Switzerland. Mina pursued her Fellowship Placement with Dr. Wojciech Matusik at MIT, applying machine learning to digital fabrication challenges, and will be continuing this work, supported by a Schmidt Science Fellows Additional Study Grant, during 2021.



Tell us about your background and PhD research?

During my PhD, I worked on digital fabrication problems, building tools inspired by differential geometry and making software to facilitate the fabrication process. Fabrication is something we all need every single day for everyday objects, from phones, to clothes, and manufacturing items. To make digital fabrication extremely fast, easily customizable, and usable by non-experienced users in a factory or studio, you need good tools and algorithms. Machine learning (ML) has been shown to make it easier to train the software and enable autonomous discovery of better solutions.

How has Schmidt Science Fellows supported your science?

I discovered some problems that cannot be solved with conventional geometry during my PhD – they don't have an analytical solution and instead need to find a close approximation. So now at the Matusik Group at MIT I am using my Fellowship Placement to combine geometry and ML to tackle these problems.

For example, we're developing a ML algorithm for new materials in 3D printing so they are optimized for several objectives, not a single objective. These materials are currently designed by intuition and trial and error, whereas the algorithm suggests new chemical combinations to try, trading off between different properties say in medical prosthetics where elasticity is important, but in aerospace parts you may be more interested in toughness.

Why is interdisciplinarity important to you?

On the 3D printing project, I was fortunate to have a mechanical engineer, a chemical engineer, a materials scientist and myself, a computer scientist, all working together. You would not be able to do it alone. We had to work together and find a common language, synergy, and overlap. You learn what matters to them and the issues in their fields, which is hugely beneficial because you wouldn't be able to easily discover that without insider input.

How has Program support helped you?

The extra support you get as a Fellow is amazing. The Program provides a level of help that I'm sure you don't get anywhere else. The support means I have full research freedom, I can concentrate on my science and make more progress with my interdisciplinary project. We have courses that are not easily available to other PhD students and postdocs. I have great support from my Academic Council mentor, and we work together as Fellows to share notes, experiences, tips and tricks.

What have you valued most from your time so far as a Schmidt Science Fellow?

It is said that "you cannot be what you cannot see..." and there are many people we meet through our Global Meetings such as Nobel Prize winners, figures in politics and policymaking, leading scientists and entrepreneurs who can all serve as role models and inspiration. They really help us understand different backgrounds, stories, and how to overcome difficulties on the path to success. We learn about their personal experiences, challenges, strengths, incredible discovery anecdotes, and most importantly great passion for what they do.

Then there are the Fellows themselves – we have vastly different backgrounds and life experiences but are similar in so many ways. The Fellowship is an amazing source of support and we learn a lot from each other, both on a personal and professional level. We are at similar stages in our careers, facing the same challenges and it is easier to overcome them with companions.

“I was fortunate to have a mechanical engineer, a chemical engineer, a materials scientist and myself, a computer scientist, all working together.”



Learn more about Mina Konaković Luković and her science at: schmidtsciencefellows.org/fellow/mina-konakovic-lukovic/

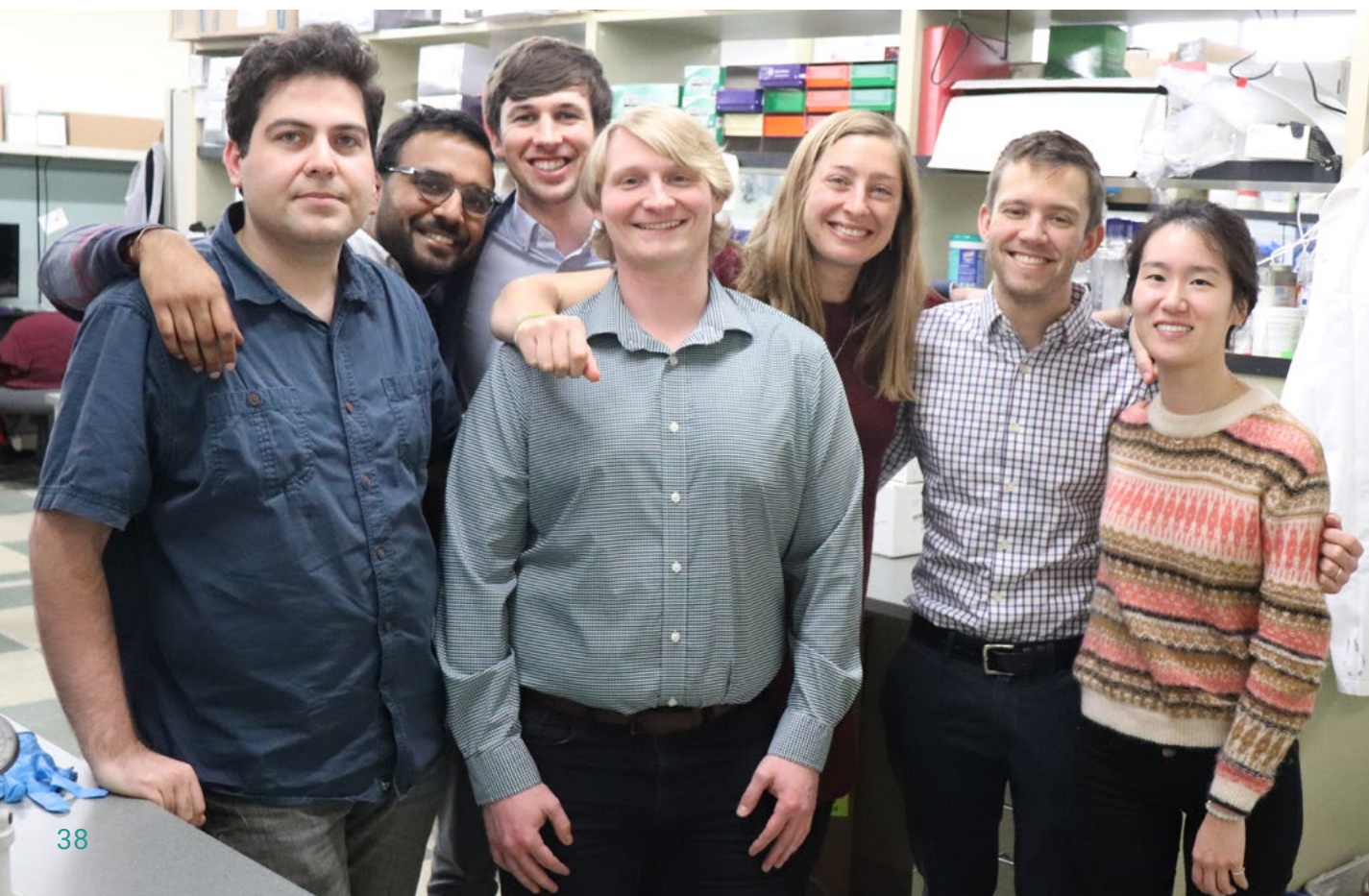
Building a Lifelong Community

Our Senior Fellows community is increasingly critical to fulfilling our Program mission and shortly will be several times larger than our number of active Fellows pursuing their Fellowship Year. Once selected as a Schmidt Science Fellow, our Fellows become Fellows for life. They are members of a genuine community of supportive and inspirational interdisciplinary science leaders that we expect to continue throughout each Fellow's career. Through the Senior Fellows community, Schmidt Science Fellows aims to accelerate and amplify individual Fellows' impact and equip each to act as an ambassador for interdisciplinary science.

We are committed to investing in our lifelong community to provide Senior Fellows with a professional development program, networking, and Fellowship collaboration opportunities to support their ongoing growth as interdisciplinary leaders as their myriad of career paths progress.

We are also keen to develop a culture where Senior Fellows are motivated to contribute to the life of the Fellowship as their careers develop, particularly through advice and support for new cohorts of Fellows. We have been delighted to see this begin to take root in our early years with an overwhelming response to a call for volunteers to mentor new Fellows and other Senior Fellows offering their insights and advice through programmed discussion events.

Senior Fellows during the February 2020 visit to Conservation X Labs.



Senior Fellows

The 2018 cohort completed their Fellowship Year in July 2019 and graduated to become the first group of Senior Fellows in our community. The 2018 Fellows progressed into a broad range of destinations following the completion of their Placements, including further Schmidt Science Fellows support through the Additional Study Grant (ASG) scheme, faculty positions, postdoctoral research, founding roles in start-ups, and independent not-for-profit leadership positions.

Six 2018 Fellows consolidated their Placement research projects during 2019-20 through ASGs that provided support from two-12 months in duration.

As of the beginning of the 2020 academic year, Senior Fellows had secured faculty offers from leading institutions, including Northwestern University, the University of California, San Diego, the University of Michigan, Ann Arbor, and the University of British Columbia.

Senior Fellows have also had significant success in developing companies, with Peyton Greenside co-founding BigHat Biosciences, which raised \$5.3m in seed-round financing in October 2019, and Fahim Farzadfard co-founding MitoLab, which raised \$3m in seed-round financing in April 2020.

Senior Fellow Hal Holmes has continued his work on a DNA 'barcode reader' to help identify illicitly traded wildlife as Chief Engineer at Conservation X Labs. Hal is supported by NSF, Schmidt Marine Technology Partners, and a Moore Inventor Fellowship from the Gordon and Betty Moore Foundation worth a total of \$825,000. He is also part of a \$1m research grant from the Moore Foundation to his Fellowship Placement lab at Virginia Tech, which aims to develop Hal's postdoctoral research to utilize the ultrasound-based technology histotripsy to extract DNA samples from timber.

We recently surveyed the Senior Fellows to understand their post-Placement trajectories and progress better.

From the 14 Fellows in the 2018 cohort, 28% reported they had continued to work on science in their pivot discipline, 14% reported that they had taken the interdisciplinary training from their Placement experience back to their original PhD field, and 58% recorded that they felt they were now working at the interface of disciplines.

“My Fellowship Year has been a great experience. Schmidt Science Fellows provided me with the resources necessary to really make this interdisciplinary pivot. And it's broadened my understanding of different scientific disciplines, through the engagement that I've had with other members of the cohort in addition to all the professional development.”
Ahmad Omar, 2019 Fellow

“I learned so much during my Fellowship year – not only through my pivot to a new field, but also from the other members of my highly interdisciplinary and collegial cohort, and from the professional development programming delivered through the Global Meetings.”
Kaitlyn Gaynor,
2019 Fellow

Programming

Our detailed plan for Senior Fellows programming has been inevitably impacted by the COVID-19 pandemic during 2020, restricting our ability to deliver in-person convenings. Unfortunately, pandemic restrictions stopped us from going ahead with a planned Senior Fellows Forum in Oxford, UK, envisaged for May 2020. This would have involved Schmidt Science Fellows programming and integration with the planned inaugural Rhodes Trust Society and Technology Forum.

In February 2020, a group of Senior Fellows joined our first-ever dedicated alumni convening when they visited Seattle for a multi-day meeting centered on 2018 Fellow Hal Holmes' work at Conservation X Labs. Senior Fellows received a hands-on demonstration of the Conservation X Labs technology and heard from the team about the unique challenges of not-for-profit commercialization.



2018 Fellow, Hal, and Conservation X Labs colleagues demonstrating the DNA barcode scanner prototype and engaging Senior Fellows in testing.

The Seattle Senior Fellows visit offered an opportunity for Senior Fellows to reconnect with members of their cohort and to join a Schmidt Science Fellows networking event with local and international science and policy leaders who were in the city for the American Association for the Advancement of Science Annual Meeting.

Engaging with Current Fellows

During 2019-20, we invited Senior Fellows to join current Fellows at a range of events and activities. Senior Fellows in the locality of our in-person Global Meetings received invites for several different programmed events, including a postdoc networking evening during the Cambridge, MA meeting in October 2019 and the Global Meeting formal dinner in Northern California in February 2020. We were delighted that many Senior Fellows were able to join us.



Senior Fellows Asja Radja, 2019 Fellow, and Peyton Greeside, 2018 Fellow, at a Northern California Global Meeting dinner.

During the pandemic, we have invited Senior Fellows to join virtual programming with our active Fellows. These sessions have included Town Hall meetings to discuss Fellowship developments, an online version of a 'fireside chat' with Professor Tim Palmer from the University of Oxford, discussion sessions on racial equity in STEM, cross-Fellowship social events, and an open invitation to join any of the science talks being giving by current Fellows as part of their Global Meetings.

“During the 2018 Senior Fellow visit to our lab in Seattle, we performed a demonstration of our prototype DNA testing device on a sample of Atlantic salmon. When the COVID-19 pandemic broke out about two months later, Dr. Fahim Fazardfard, who was on the visit, recognized that our platform could be adapted for decentralized COVID-19 testing. Fahim reached out to me and we began collaborating with his startup. Their efforts helped us identify chemistries that could perform a COVID-19 test on our platform and their initial data and network led to essential funding that we needed to accelerate the translation of our prototype into a manufacturable product.”
Hal Holmes, 2018 Fellow

Giving Back

Our Senior Fellows have a strong sense of engagement with the Schmidt Science Fellows community, reporting, on average, high levels of continued interaction with their cohort and the Program. We are keen to support the development of a culture of Senior Fellows giving back to the ongoing life of the Fellowship, and we have witnessed this extensively in the last year.



Karl Barber, 2018 Fellow, speaking at a Fellowship Community introduction session with the 2020 cohort

As part of our support package for the incoming 2020 Fellows, this year we launched a new Peer-Mentoring Scheme. The program aims to connect each member of a new cohort with an experienced Fellow from a previous cohort. Peer-Mentors provide a contact point for new Fellows for informal questions and guidance about being a Schmidt Science Fellow, a sounding board for ideas about Placement, starting a new project, and a way to access expertise and knowledge across the Fellowship community. An overwhelming number of 2018 and 2019 Fellows volunteered to be a Peer-Mentor, participating in a Program-led training session before being matched with a 2020 Fellow.

“I really loved this session and loved hearing about the career trajectories of previous cohort Fellows. I learned a lot about the obstacles they have faced in paving the way for their careers.”
Andrea d'Aquino, 2020 Fellow

We organized a virtual panel discussion on non-academic career paths in July 2020, where four Senior Fellows shared insights from their journeys through PhD and postdoc to roles in start-up companies, a not-for-profit enterprise, and a US government lab. We plan to complement this panel discussion with a further event to hear from Senior Fellows who have secured faculty positions, to allow them to share their perspectives and tips.

Some of our Senior Fellows are currently engaging with the Admissions team to offer direct guidance to candidates from certain regions where there may be cultural or experiential barriers to overcome within the application process and we hope to expand this kind of engagement with our candidate community in future years.

Looking Ahead

On graduation in December 2020, the 2019 Fellows joined the Senior Fellows community. We look forward to the 2020 Fellows transitioning during 2021. These graduations into the Senior Fellows community mark a watershed moment as we will have a genuine, multi-cohort, Senior Fellows community for the first time.

To support this growth and to underpin continued collaboration, networking, and development, we intend in the next year to:

- Launch an annual Senior Fellows conference with cohort-specific and whole Fellowship programming.
- Support the development of regional clusters and interest groups.
- Provide a virtual program of Senior Fellows science and networking events.
- Maintain regular communications and cross-Fellowship interactions to allow Senior Fellows to remain connected with the community.



Advancing Bioelectronics

Dr. Xiwen Gong is a member of the inaugural cohort of Schmidt Science Fellows, selected in 2018. She obtained her first degree in Materials Physics from Fudan University, in Shanghai, China before moving to Canada to pursue her PhD at the University of Toronto. As a Schmidt Science Fellow, Xiwen has worked on developing wearable LEDs at Stanford University, receiving follow-on Program support in the form of an Additional Study Grant and a COVID Emergency Placement Extension Grant.



Tell us about your background and PhD research?

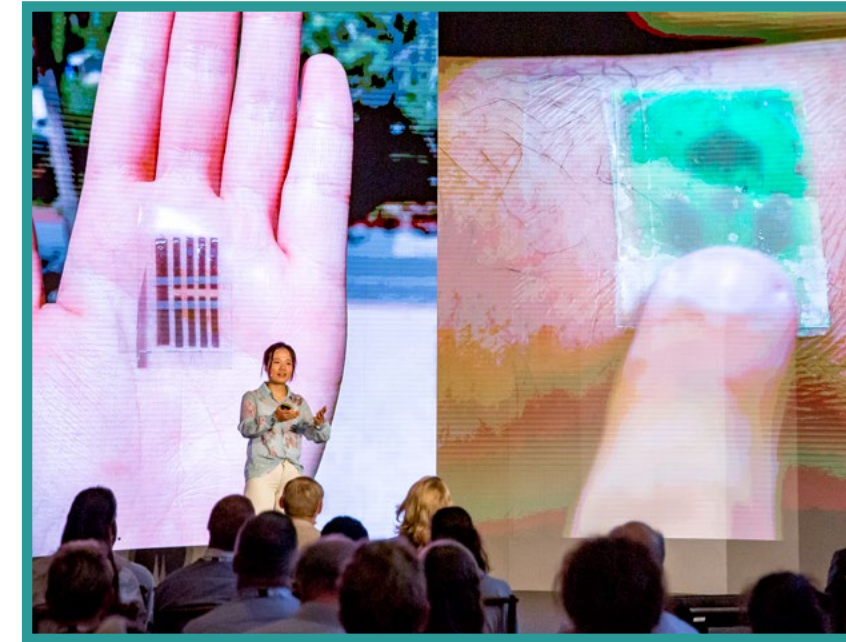
My previous research focused on nanomaterials, small nanometer-sized particles called quantum dots (QDs), and using them to make optoelectronic devices, including high-efficient lighting LEDs, solar cells, and light detectors. QDs have such great properties including high brightness, and their color of emission can be tuned by simply changing the size or their chemical composition.

But devices like phones, tablets, or solar panels are mostly rigid in form, limiting their applications. Can we generate a new type of material with these electronic properties, but be very flexible and durable in nature? As a Schmidt Science Fellow at Stanford University, I've worked on device engineering to build a wearable LED using QDs. It's such a big leap and a completely new adventure for me.

How has Schmidt Science Fellows supported your science?

The Fellowship gave me the independence to choose the best group and research project that I wanted to work on. Schmidt Science Fellows empowered me to be brave. The Program emphasizes interdisciplinary study and making that pivot. It's actually quite risky because many people want to see something immediately generated in your postdoc which is more easily done by sticking to your field. Without Schmidt Science Fellows, I would be hesitant and questioning whether I should take the risk and pivot into an entirely new field.

When the pandemic hit, my research lab got shut down and there was no way for me to do experiments for months – and the research I'm doing is heavily experimental. Without the Emergency Placement Extension Grant from Schmidt Science Fellows my postdoc would have ended before the lab reopened. The extra support has not only given me more lab time to complete the experiments but has also helped a lot mentally: we know that we're supported, otherwise it's just very tough.



How important was the Additional Study Grant?

The complexity of my project means that I needed more than one year to complete my research. When you pivot and start in a new field, the ramping up time is longer than normal. Projects as complex as mine normally take one and a half to two years – even without COVID-19 – so the support for additional time has been vital. Without it, my time would be spent on other projects rather than cultivating my very own research direction which I am now on course to do.

How important has the Fellowship community been?

Support from my peers has been vital. I developed a very strong bond with some of the Fellows in my cohort and when I have questions, or I want to bounce ideas, I can reach out to these colleagues who have been really supportive and lovely.

What plans do you have for 2021 and beyond?

I have secured a faculty position at the University of Michigan, Ann Arbor, that I will start in January 2021. My research group will innovate soft electronic materials, including nanomaterials, polymers, and perovskites from the molecular level, understand their fundamental properties using advanced spectroscopies, and advance the next generation of bioelectronics for the applications in biomedical sensing, soft robotics, energy harvesting, and storage. The Schmidt Science Fellows support over the last two years has been vital because the independence I have had has allowed me to really develop my own course of research.

“The Schmidt Science Fellows support over the last two years has been vital because the independence I have had has allowed me to really develop my own course of research.”

Learn more about Xiwen Gong and her science at:
schmidtsciencefellows.org/fellow/xiwen-gong/

Advancing Interdisciplinary Discovery

As a Fellowship community and as an organization, we believe in the power of interdisciplinary science to tackle the world's big challenges and to underpin improvements in quality of life around the world. We fund the training and development of emerging, high-potential, interdisciplinary leaders, and the ambitious research they undertake, but we are significantly more than that. We have also quickly established a position at the center of a network of individuals and organizations committed to advancing interdisciplinary science. We aim to work with partners to identify the system-wide obstacles that hold back interdisciplinary progress and to scope interventions that could lead to solutions, unleashing the full potential of our Fellows and others seeking to harness interdisciplinarity.



Through our stakeholder engagement we have built a network of contacts at other organizations with shared interests and have explored ideas with our Principle Investigator (PI) community. These discussions have helped us to deepen our understanding of obstacles to interdisciplinarity, identify knowledge gaps, test early ideas, and to establish potential partners.

We are committed to telling our Fellows' stories and the central role of interdisciplinary approaches in their achievements. One major initiative during 2019-20 was our high-impact film series – **We Are Schmidt Science Fellows**.

Engaging with Partners and Building our Network

Following our inaugural year, we continued to identify and meet a wide range of potential partners and contacts with shared interests in scientific leadership development or interdisciplinary science. Our Program team held valuable meetings with new contacts at organizations including NSF, FASEB, HHMI Janelia Research Campus, Gordon and Betty Moore Foundation, Packard Foundation, Stanford Science Fellows, and the Earth Leadership Program. As the year progressed, the impact of the COVID-19 pandemic inevitably shifted this engagement online.

We integrated an intimate stakeholder reception and dinner into the Senior Fellows visit to Seattle in February 2020. This provided an opportunity for Senior Fellows to engage with a broad range of individuals representing international funding agencies, research intensive industries, foundations, and regional scientific leaders. We were pleased to be joined by guests from the Kavli Foundation, UK Research and Innovation, Wellcome, the University of Washington, Impossible Foods, Cengage Learning, and A-Alpha Bio. The event was a forum for the discussion of challenges and opportunities around interdisciplinarity across all areas of science and generated lively debate and ideas that we will build on through future stakeholder meetings.

Schmidt Science Fellows has been pleased to participate in a number of sector roundtables and foras, including group convenings hosted by the US National Academies of Sciences, Engineering, and Medicine and CIFAR/Azrieli Foundation.

Our Principle Investigator Community

The PIs who host Schmidt Science Fellows for Fellowship Placements are a crucial and influential part of our broader community. We recognize that some PIs may host a Fellow for just the initial Placement, while others will have a longer-term scientific relationship with a Fellow. In all cases, their commitment to scientific mentoring and interdisciplinarity makes them valuable partners for the Program and we aim to maintain long-term connections with the PIs in our community.

During 2019-20, our team has continued a program of engagement with PIs by undertaking visits to a significant proportion hosting our 2019 Fellows and 2018 Additional Study Grant recipients. These visits were

restricted due to the pandemic, but we aim to restart them when it is possible to do so.

We were also pleased to welcome a number of PIs to events associated with our Global Meetings in Cambridge, MA and Northern California.

In recognition of the important role of the PIs in the development of each Fellow, and the value of their wider perspective on the scientific landscape, we commissioned an independent survey of all PIs of the 2018 and 2019 cohorts during early summer 2020.

Themes emerging from the interviews and subsequent report included the length of the Fellowship Placement, the balance of time required out of the lab for Global Meetings, and the importance of broad approaches to promote interdisciplinarity. The report will feed into the longer-term development of Program strategy.

“If you want to discover something completely new you have to be willing to be in a state of uncertainty at least for a while, if not for quite a while.”
Jielai Zhang,
2018 Fellow

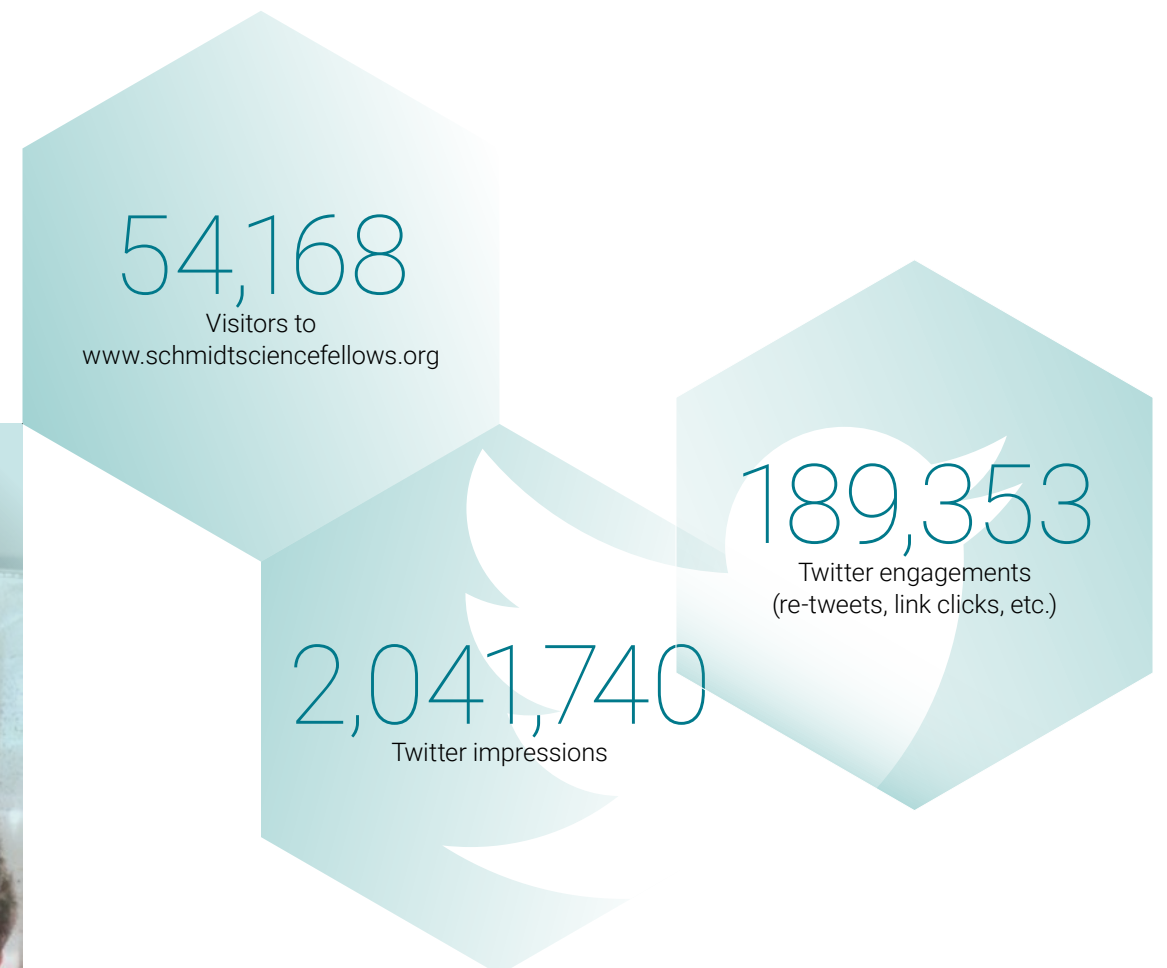
Senior Fellows from the 2018 cohort, Ryan Truby and Karl Barber, in conversation with UKRI North America Director, Chloe Somers, at our interdisciplinary challenges discussion dinner in Seattle, February 2020.



Communications

The Schmidt Science Fellows communications strategy is built on leveraging engaging content to tell the stories of our Fellows and the importance of interdisciplinary science. This strategy underpins our outreach to Nominating Institutions and candidates, broadens our reach to potential Program partners, and helps to build the profile of our Fellows.

During August 2019 - July 2020, our key communications metrics were:

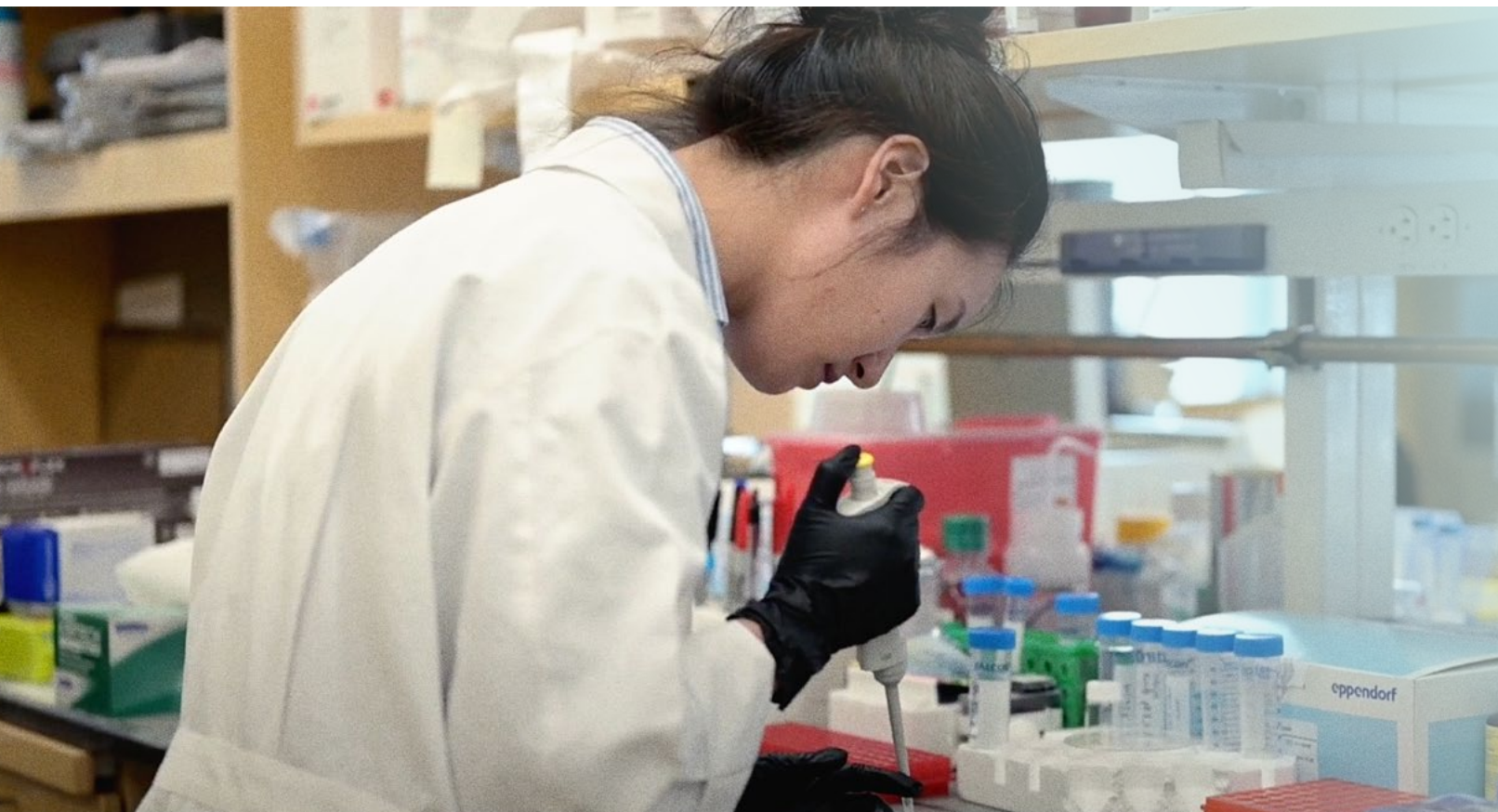


In early August 2020, our Executive Director, Dr. Megan Kenna, and the Executive Secretary of the Harry S. Truman Scholarship Foundation, Dr. Terry Babcock-Lumish, jointly authored an opinion article in the *San Francisco Chronicle*. The article explored the importance of interdisciplinarity and engagement between science and society during and beyond the COVID-19 pandemic. It held a call to action to all stakeholders in the scientific system to commit to the structural and culture changes required to embed the interdisciplinary benefits that the response to the pandemic has brought into focus.

“The future needs all the talent we can muster sitting at the table, working together. As we look to emerge from the pandemic, no challenge can now be considered too big to tackle, nor too small to matter.”

Dr. Megan Kenna and Dr. Terry Babcock-Lumish,
San Francisco Chronicle, August 2020.

Dr. Jina Ko at work in her lab at Massachusetts General Hospital in a shot from her We Are Schmidt Science Fellows film - 'A Needle in a Haystack'.

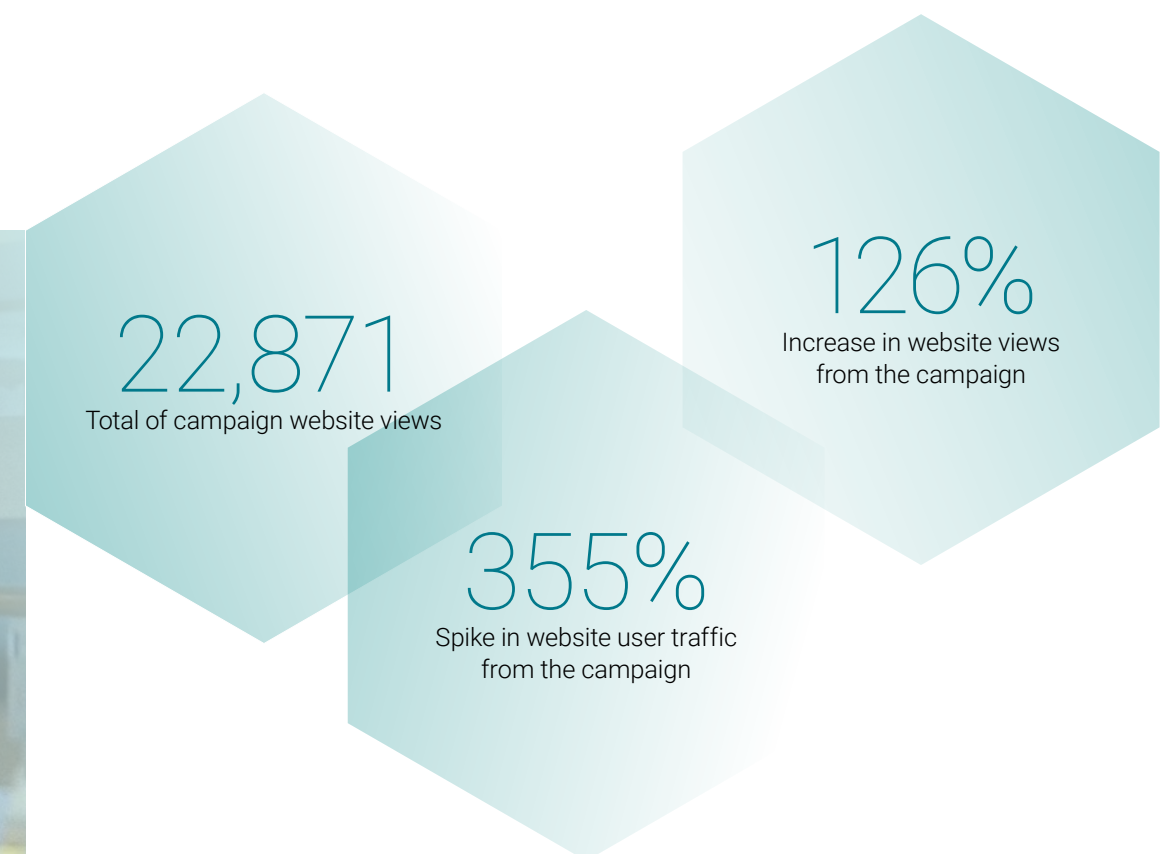


We are Schmidt Science Fellows

Our most significant communications campaign of the past year was the launch of **We Are Schmidt Science Fellows**. This series of films and associated digital editorial content featured five of our 2018 Fellows – Jina Ko, Jielai Zhang, Mattia Serra, Hal Homes, and Karl Barber – and explored their science, motivations, and personal journeys as interdisciplinary scientists.

The five Fellows worked with our film partners on location in and around their Placement labs and homes to tell rich stories about their lives and science. The series launched at a private event hosted by Schmidt Futures in New York City, before a staggered public release that generated wide engagement.

The **We Are Schmidt Science Fellows** campaign drove a significant increase in engagement with the Program, our Fellows, and their stories. Highlight statistics include:



Excellent Infrastructure

Our visible programming and initiatives require a reliable and efficient set of foundations. During the past year, we have continuously strengthened our policies to support our Fellows and built our digital infrastructure, drawing on the learnings from our first cohorts.

The adaptations we made to manage the impact of COVID-19 restrictions on Fellowship operations have provided valuable insights for future refinements and developments of how we deliver for our Fellows.

Digital Infrastructure

The move to more extensive online Program delivery during 2020 has given us a wealth of information, experience, and feedback on the features that will deliver value for our community through digital platforms in the long-term.

We aim to develop a digital hub to bring together the range of online platforms that the Program and Fellows use to connect and collaborate, with the objective to maintain the best platforms we have while simplifying navigation.

We are also moving forward with an infrastructure project to deliver a new contact and relationship management system to help the Program deliver Fellowship services more effectively.



Professor John Boothroyd, Academic Council member, speaks to the 2019 Fellows at the Northern California Global Meeting.

Program Team

Our Program team has gradually grown in line with the development of our Fellowship community. Anu Mayer joined our team in October 2019 as Communications and Data Management Officer, supporting the Program's communications and information management delivery, and work on Nominations and Selection. Following a targeted and competitive recruitment process we were delighted to welcome Maysa Mustafa as Director of Global Meetings in September 2020. Maysa will lead on the development, delivery, and evaluation of the Global Meetings Series, with a focus on implementing a hybrid of virtual and in-person programming once pandemic restrictions are eased.

Looking ahead to 2021, we anticipate recruiting additional support in admissions and event management.

Our team was already experienced and equipped for significant remote working, with colleagues in the US and UK and the need for regular travel. This enabled the team to transition to working from home – with the onset of COVID-19 lockdowns – with relative ease and to maintain seamless Program delivery and support for our Fellows.

Matt Goode, Director of Strategic Operations and Fellowship Affairs, with Rhodes Trustee Dr. Tariro Makadzange, Senior Director of Biology and External Innovation at Gilead Sciences, at the Northern California Global Meeting.



2020 Fellows

We announced the 22 Fellows in our 2020 cohort following a virtual Final Selection process in April 2020. The cohort represents eight nationalities and 17 different Nominating Institutions.

The 2020 Fellows have joined the Schmidt Science Fellows community through virtual programming and we look forward to welcoming the cohort to come together in person as soon as it is safe to do so.

The majority of 2020 Fellows were able to identify and commence their Fellowship Placements between July and October 2020. In a small number of cases, the impact of COVID-19, through delaying PhD completions or where Fellows have refocused their current research to help combat the pandemic, has meant individuals will begin their Placements in 2021.

Find out more about our Fellows
- click their name to read their full profile



Dr. Mar Cabeza-Cabrerizo >

PhD institution:

The Francis Crick Institute

Postdoctoral institution and lab:

GBernardes Lab, University of Cambridge

Mar studies the role of dendritic cells in the immune system and how they seed barrier tissues such as the intestine and lung. During her PhD, she developed new techniques for quantifying the dendritic cell clusters in 3D. As a Schmidt Science Fellow she hopes to develop a new method for non-invasive imaging of the human immune system in real-time.



Dr. Jacqueline Campbell >

PhD institution:

University College London

Postdoctoral institution and lab:

OceanBUG Group, University of Oxford

Jacqueline is a planetary scientist who used her PhD to hunt for signs of the building blocks of life in dust on Mars. As a Schmidt Science Fellow, she aims to combine long-term satellite observations with ocean samples and marine wildlife observations to produce local and global maps of ocean water chemistry.



Dr. James Chen >

PhD Institution:

The Rockefeller University

Postdoctoral institution and lab:

Bhabha / Ekiert Labs, NYU

During his PhD at The Rockefeller University, James studied RNA polymerase, the enzyme that performs the critical process of transcription. He used cryo-electron microscopy to study the structures of this protein machine in several important bacterial pathogens. As a Schmidt Science Fellow, James plans to combine structural biology with genetics and cell-imaging to investigate some of the fundamental biological processes involved in microbial virulence and host-pathogen interactions.



Dr. Andrea d'Aquino >

PhD institution:

Northwestern University

Postdoctoral institution and lab:

The Appel Group, Stanford University

Andrea develops synthetic molecules that can assemble into structures that resemble the behavior of natural proteins. As a Schmidt Science Fellow, Andrea aims to develop biomaterials for controlled drug delivery to treat diseases such as diabetes by answering key questions relating to the design and mechanism of therapeutic biomaterials.



Dr. Yang Guo >

PhD institution:

Tsinghua University

Postdoctoral institution and lab:

Mauzerall Group, Princeton University

During his PhD, Yang explored options for the decarbonization of energy infrastructure for China's many industrial parks and modeled the environmental and economic benefits of greenhouse gas mitigation measures. As a Schmidt Science Fellow, Yang plans to explore the benefits of linking energy and water infrastructure by harnessing the sludge and treated water from wastewater treatment plants as alternative fuel.



Dr. Kirsten Hall >

PhD institution:

Johns Hopkins University

Postdoctoral institution and lab:

Atmospheric Measurements Group, Harvard & Smithsonian Center for Astrophysics

Kirsten is an astrophysicist interested in harnessing the power of earth observation satellites and data science to tackle climate change. As a Schmidt Science Fellow, Kirsten will use her expertise with large datasets to convert raw data from atmospheric monitoring satellites and ground-based observatories into actionable information that can be used to improve vitally important climate models and inform climate policy.



Dr. Gabriella Heller >

PhD institution:

University of Cambridge

Postdoctoral institution and lab:

Hansen Lab, University College London

Gabriella is a structural biologist. During her PhD, she utilized high-powered computational approaches to probe how drugs interact with a class of disease-causing proteins in the body called disordered proteins. As a Schmidt Science Fellow, Gabriella will use experimental structural biology to uncover the rules of drug binding to viral disordered proteins.



Dr. Kalli Kappel >

PhD institution:

Stanford University

Postdoctoral institution and lab:

Regev Lab, The Broad Institute of MIT and Harvard

Kalli has developed computational approaches that can transform limited biochemical and cryo-electron microscopy data into three-dimensional structures of RNA molecules. As a Schmidt Science Fellow, she will employ high-throughput cellular imaging, single-cell transcriptomics, and computational methods to characterize and develop predictive models of RNA and protein sub-cellular localization patterns and their relationships to cellular function.



Dr. Deepak Krishnamurthy >

PhD Institution:

Stanford University

During his PhD, Deepak made a discovery about the swimming mechanics of the human schistosomiasis parasite that provides new insights into how it infects us. As a Schmidt Science Fellow, Deepak will use molecular approaches to complement his physical biology and engineering training to reveal how genetic and biochemical mechanisms in tiny, single-celled ocean organisms permit them to sense gravity and control their behaviors. Due to the impact of COVID-19 restrictions on his PhD completion, the Program has given Deepak exceptional dispensation to defer the start of his Fellowship Placement to 2021.



Dr. Jennifer Lai Remmel >

PhD institution:

Dartmouth College

Postdoctoral institution and lab:

Mina Lab, Harvard University

During her PhD, Jennifer worked on designing next-generation vaccines to drive immune responses to target specific virus vulnerabilities. As a Schmidt Science Fellow, Jennifer will use high-throughput tools and analytical methods to investigate how the antibody response develops over time during pregnancy and influences early immunity in young infants.



Dr. Sofia Landi >

PhD institution:

The Rockefeller University

Postdoctoral institution and lab:

Buffalo Group, University of Washington

Sofia's research is concerned with uncovering poorly understood mechanisms in our brains that underpin how we recognize faces, and in particular, functional differences between how we perceive strangers and people we know well. As a Schmidt Science Fellow, Sofia will understand how our memory works, exploring the connections between how our brains navigate the world and episodic memory.



Dr. Amy Shepherd >

PhD institution:

University of Melbourne

Postdoctoral institution and lab:

Rao Lab, Boston Children's Hospital, Harvard Medical School

During her PhD, Amy focused on behavioral neuroscience, investigating how a mouse model of Alzheimer's disease would perform on similar touchscreen-based cognitive tasks to those used to test patients in the clinic, and how environmental interventions may slow down Alzheimer's disease progression. As a Schmidt Science Fellow, Amy will study the role of the millions of neurons in the gut and the link between gastrointestinal symptoms and neurological disease.



Dr. Phuong Le >

PhD institution:

University of Illinois Urbana-Champaign

Postdoctoral institution and lab:

Yeo Lab, University of California, San Diego

During her PhD, Phuong developed a new technology that combines innovative quantum dot nanotechnology and single-molecule counting to provide new insights into cancer at single-cell and single-protein scale. As a Schmidt Science Fellow, she will work with stem cell technologies and functional genomics to study RNA and RNA binding protein in the context of neurodegenerative diseases including amyotrophic lateral sclerosis (ALS) and spinal muscular atrophy (SMA).



Dr. Fernando Soto >

PhD institution:

University of California, San Diego

Fernando is a nanoengineer who has developed microengines the size of a human cell. During his PhD, his research included designing, building, and powering tiny engines. As a Schmidt Science Fellow, Fernando wants to pivot his research to the development of programmable materials to create autonomous biorobots. Fernando wants to bridge the gap between nanotechnology and bioengineering towards creating living robots and medical devices.

Fernando will finalize his Fellowship Placement plans and commence his research in 2021.



Dr. Callan Luetkemeyer >

PhD Institution:

University of Michigan

Postdoctoral institution and lab:

Calve Group, University of Colorado Boulder

Callan is a mechanical engineer with expertise in polymer mechanics. During her PhD she combined displacement imaging with computational inverse methods to develop better models of anterior cruciate ligament (ACL) material behavior. As a Schmidt Science Fellow, Callan will pivot into extracellular matrix biology. Callan hopes that her work could lead to ways to non-invasively detect microdamage in tissues well before a significant injury.



Dr. Shriya Srinivasan >

PhD institution:

MIT

Postdoctoral institution and lab:

Langer Lab, MIT

Shriya is a biomedical engineer who has pioneered new approaches to help individuals requiring amputation to restore the sense of touch and feeling in prosthetic limbs. As a Schmidt Science Fellow, Shriya has pivoted her science to focus on gastrointestinal motility disorders. She aims to investigate the underlying mechanisms of smooth muscle stimulation and develop new solutions.



Dr. Andreas Wallucks >

PhD institution:

Delft University of Technology

Postdoctoral institution and lab:

Juncker Lab, McGill University

During his PhD, Andreas worked on engineering macroscopic quantum systems to observe their behaviour at increasingly bigger length scales and using them for new information technologies. As a Schmidt Science Fellow, Andreas will pivot his research into liquid biopsy for cancer diagnostics.



Dr. Chuck Witt >

PhD institution:

Princeton University

Postdoctoral institution and lab:

Materials Theory Group, University of Cambridge

Chuck worked to improve our understanding of materials with computer simulations based on the physical laws of quantum mechanics during his PhD. As a Schmidt Science Fellow, Chuck aims to use machine learning techniques to study polymers. He hopes to develop a better understanding of plastics recycling, as well as bio-inspired plastics for packaging applications.



Dr. OJ Watson >

PhD institution:

Wellcome / Imperial College London

OJ is an infectious disease modeler who has used mathematical models to demonstrate the uses and limitations of malaria genetics to develop and evaluate different control interventions for the disease. As a Schmidt Science Fellow, OJ aims to make a contribution to our understanding of drug-resistant malaria by pivoting to systems biology and bioinformatics. OJ plays an integral role contributing to the global response to COVID-19 and therefore the Program has given OJ exceptional dispensation to defer the start of his Fellowship Placement to 2021.



Dr. Yuanzhao Zhang >

PhD institution:

Northwestern University

Postdoctoral institution and lab:

Strogatz Group, Cornell University

During his PhD, Yuanzhao focused on the theory of synchronization and showed how disorder, in the form of random oscillator heterogeneity, can restore synchrony. As a Schmidt Science Fellow, Yuanzhao aims to combine dynamic modelling and experimental data to study the benefits of cell heterogeneity on the circadian clock, which is regulated by the rhythmic and synchronized activity of thousands of neurons in the brain.



Dr. Ben Winer >

PhD institution:

Princeton University

Postdoctoral institution and lab:

The Morgan Huse Lab, Sloan Kettering Institute

Ben's PhD involved developing advanced human liver tissue culture models and humanized mouse models to study how the Hepatitis B virus establishes chronic infections. As a Schmidt Science Fellow, Ben aims to take a systems biology approach to explore how migratory immune cells navigate the body.



Dr. Evan Zhao >

PhD institution:

Princeton University

Postdoctoral institution and lab:

The Collins Research Group, Wyss Institute

During his PhD, Evan used light sensitive proteins, also known as optogenetics, to engineer better microbial cell factories. As a Schmidt Science Fellow, he is pivoting to work on RNA sensing in cells for medical applications. Evan aims to utilize a cell's ability to sense its environment to develop a sensor that could control the production of therapeutic proteins within the cell, tailoring treatment to a patient's specific needs.

2019 Fellows

The 2019 cohort joined the Fellowship community following their Selection in April 2019. During their Fellowship Year, the cohort pursued research at 14 different Placement host institutions, including 11 institutions new to the Fellowship community.

The 2019 Fellows felt the greatest impact on their Fellowship science from the pandemic – 14 received support from the Emergency Placement Extension Grant scheme to mitigate the effect on their projects.

We extended the official Fellowship Year for the 2019 Fellows to December 2020, to allow additional time to deliver virtual Global Meeting content. On graduation in December 2020, the 2019 Fellows joined the Senior Fellows community.



Dr. Ina Anreiter >

Postdoctoral institution and lab:
Simpson Lab, Ontario Institute for Cancer Research
Next destination:
Stanford Science Fellows program at Stanford University

Find out more about our Fellows
- click their name to read their full profile



Dr. Mercy Asiedu >

Postdoctoral institution and lab:
Learning to Cure Group, Computer Science and Artificial Intelligence (CSAIL), MIT
Next destination:
Schmidt Science Fellows Additional Study Grant at MIT and Massachusetts General Hospital



Dr. James Briggs >

Postdoctoral institution and lab:
Zhang Lab, The Broad Institute of MIT and Harvard
Next destination:
Schmidt Science Fellows Additional Study Grant at The Broad Institute



Dr. Kasturi Chakraborty >

Postdoctoral institution and lab:
Becker Group, University of Chicago
Next destination:
Schmidt Science Fellows Additional Study Grant at University of Chicago



Dr. Megan Engel >

Postdoctoral institution and lab:
Brenner Group, Harvard University
Next destination:
Schmidt Science Fellows Additional Study Grant at Harvard University



Dr. Kaitlyn Gaynor >

Postdoctoral institution and lab:
National Center for Ecological Analysis and Synthesis, University of California, Santa Barbara
Next destination:
Postdoc at the University of California, Santa Barbara



Dr. Mina Konaković Luković >

Postdoctoral institution and lab:
Matusik Group, MIT
Next destination:
Schmidt Science Fellows Additional Study Grant at MIT



Dr. Jyotirmoy Mandal >

Postdoctoral institution and lab:
Raman Lab, University of California, Los Angeles
Next destination:
Schmidt Science Fellows Additional Study Grant at the University of California, Los Angeles



Dr. Aleksandr Montelli >

Postdoctoral institution and lab:
Kingslake Group, Columbia University

Next destination:
Junior Research Fellow, University of Cambridge



Dr. Gladys Ngetich >

Postdoctoral institution and lab:
Space Enabled group, MIT

Next destination:
Completing Fellowship Placement



Dr. Paul Ohno >

Postdoctoral institution and lab:
Martin Lab, Harvard University

Next destination:
Environmental Fellow, Harvard University Center for the Environment



Dr. Ahmad Omar >

Postdoctoral institution and lab:
Geissler Group, University of California, Berkeley

Next destination:
Faculty position at the University of California, Berkeley



Dr. Asja Radja >

Postdoctoral institution and lab:
Mahadevan Group, Harvard University

Next destination:
NSF-Simons Postdoctoral Fellowship at Harvard University's Initiative in Quantitative Biology



Dr. Daniel Raudabaugh >

Postdoctoral institution and lab:
Gunsch Lab, Duke University

Next destination:
Postdoc at University of Illinois Urbana-Champaign



Dr. Kadi Liis Saar >

Postdoctoral institution and lab:
Lee Group, University of Cambridge, in collaboration with the Knowles Lab, University of Cambridge

Next destination:
Schmidt Science Fellows Additional Study Grant at the University of Cambridge



Dr. Andreas Schlueter >

Postdoctoral institution and lab:
Ermon Lab, Stanford University

Next destination:
Schmidt Science Fellows Additional Study Grant at Stanford University



Dr. Rebecca Sherbo >

Postdoctoral institution and lab:
Nocera and Silver Labs, Harvard University

Next destination:
Schmidt Science Fellows Additional Study Grant at Harvard University



Dr. Grisha Spektor >

Postdoctoral institution and lab:
Papp Group, National Institute of Standards and Technology

Next destination:
Completing Fellowship Placement



Dr. Saki Takahashi >

Postdoctoral institution and lab:
Greenhouse Lab, Experimental & Population-based Pathogen Investigation Center, University of California, San Francisco

Next destination:
Schmidt Science Fellows Additional Study Grant at the University of California, San Francisco



Dr. Wiriya Thongsomboon >

Postdoctoral institution and lab:
Aristilde Lab, Northwestern University

Next destination:
Postdoc at Northwestern University

2018 Fellows

We selected and announced our 2018 Fellows, the Program's inaugural cohort in April 2018. In July 2019, all 14 Fellows graduated from their Fellowship Year on the completion of their Placement and Global Meeting programming, becoming the first members of our Senior Fellows community.

During 2019-20, individuals from the cohort have progressed onto the next stages of their interdisciplinary careers, including roles in academia, start-ups, not-for-profits, government labs, and further postdoctoral research. We supported six Fellows through Additional Study Grants between two-12 months.



[Dr. Karl Barber >](#)

Postdoctoral institution and lab:
Elledge Lab, Brigham & Women's Hospital, Harvard Medical School

Next steps:
Schmidt Science Fellows Additional Study Grant
Jane Coffin Childs Fellowship
at Brigham & Women's Hospital, Harvard Medical School

Find out more about our Fellows
- click their name to read their full profile



[Dr. Fahim Farzadfard >](#)

Postdoctoral institution and lab:
Boyden Lab, MIT, and Church Lab, Harvard Medical School

Next steps:
Postdoctoral position at MIT
CTO and Co-Founder of MitoLab



[Dr. Wes Fuhrman >](#)

Postdoctoral institution and lab:
Paglione Group, University of Maryland College Park

Next steps:
Senior Scientist at The Johns Hopkins Applied
Physics Laboratory, Space Exploration Sector



[Dr. Xiwen Gong >](#)

Postdoctoral institution and lab:
Bao Group, Stanford University

Next steps:
Schmidt Science Fellows Additional Study Grant
at Stanford University
Faculty position from January 2021
at University of Michigan, Ann Arbor



[Dr. Yogesh Goyal >](#)

Postdoctoral institution and lab:
Raj Lab, University of Pennsylvania

Next steps:
Jane Coffin Childs Fellowship
Burrough Wellcome Fund Career Award
at the Science Interface, University of Pennsylvania



[Dr. Peyton Greenside >](#)

Postdoctoral institution and lab:
Brunskill Group, Stanford University

Next steps:
Schmidt Science Fellows Additional Study Grant
at Stanford University
CSO and Co-Founder of BigHat Biosciences



Dr. Abbie Groff >

Postdoctoral institution and lab:
Page Lab, Whitehead Institute for Biomedical Research

Next steps:
Schmidt Science Fellows Additional Study Grant
Jane Coffin Childs Fellowship at the Whitehead Institute



Dr. Mattia Serra >

Postdoctoral institution and lab:
The Applied Math Lab, Harvard University

Next steps:
Swiss National Foundation Postdoc Mobility Fellowship at Harvard University
Assistant Professor, Serra Group, University of California, San Diego



Dr. Hal Holmes >

Postdoctoral institution and lab:
Vlaisavljevich Lab, Virginia Tech

Next steps:
Chief Engineer Conservation X Labs Seattle, supported by the Gordon & Betty Moore Foundation



Dr. Adi Steif >

Postdoctoral institution and lab:
Marioni Group, Cancer Research UK Cambridge Institute, University of Cambridge

Next steps:
Junior Research Fellowship at Trinity College, University of Cambridge



Dr. Jina Ko >

Postdoctoral institution and lab:
Weissleder Lab, Massachusetts General Hospital, Harvard Medical School, and Wyss Institute

Next steps:
Schmidt Science Fellows Additional Study Grant
Postdoc at Massachusetts General Hospital and Wyss Institute



Dr. Ryan Truby >

Postdoctoral institution and lab:
Distributed Robotics Laboratory, MIT CSAIL

Next steps:
Schmidt Science Fellows Additional Study Grant, MIT
Assistant Professor of Materials Science and Engineering and Mechanical Engineering in September 2021, Northwestern University



Dr. Fred Richards >

Postdoctoral institution and lab:
Mitrovica Group, Harvard University

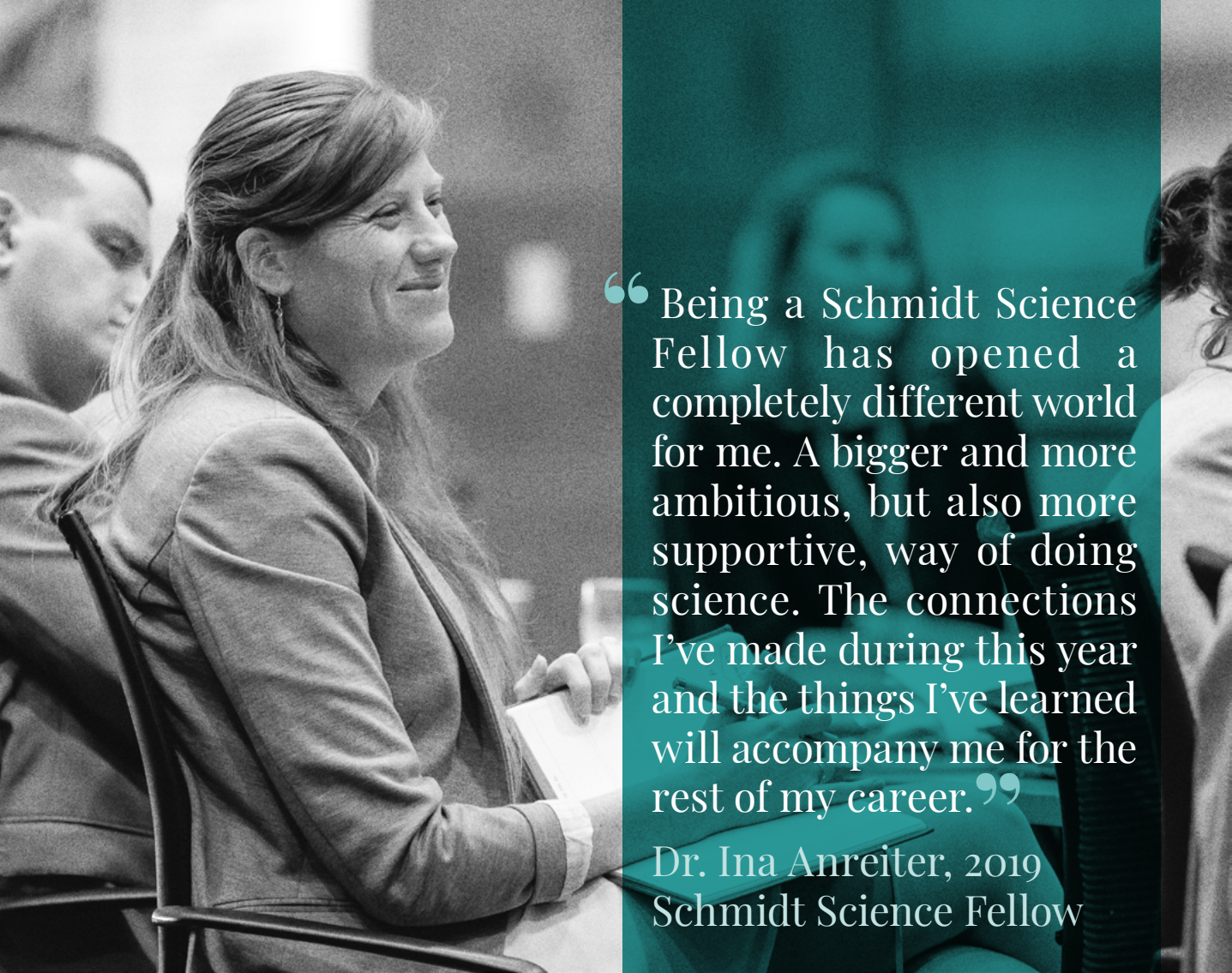
Next steps:
Imperial College Research Fellow at Imperial College London



Dr. Jielai Zhang >

Postdoctoral institution and lab:
Nobel Group, University of Oxford

Next steps:
OzGrav Postdoctoral Fellow at the ARC Centre for Gravitational Wave Discovery, Swinburne University of Technology, Australia



“Being a Schmidt Science Fellow has opened a completely different world for me. A bigger and more ambitious, but also more supportive, way of doing science. The connections I’ve made during this year and the things I’ve learned will accompany me for the rest of my career.”

Dr. Ina Anreiter, 2019
Schmidt Science Fellow

Our Team

Dr. Megan Kenna

Executive Director

Maysa Mustafa

Director of Global Meetings

Anu Mayer

Communications and Data Management Officer

Matt Goode

Director of Strategic Operations and Fellowship Affairs

Dr. Simon Vaughan

Director of Admissions and Financial Operations

Christine Norton

Executive Assistant to the Executive Director

Academic Council

Professor Sir Keith Burnett CBE FRS

Chair of the Academic Council

Dr. Liliane Chamas

Associate Academic Council Member

Professor John Boothroyd

Academic Council Member

Ruth Arnold

Executive Assistant to the Chair of the Academic Council

Our Partners

Schmidt Science Fellows is an initiative of Schmidt Futures, delivered in partnership with the Rhodes Trust. As a joint program of Schmidt Futures and the Rhodes Trust, Schmidt Science Fellows benefit from and contribute to the diverse opportunities and communities associated with both efforts.

Schmidt Futures

Schmidt Futures is a philanthropic initiative, founded by Eric and Wendy Schmidt, that bets early on exceptional people making the world better. It knits talent into networks, bets on the most promising ideas through diverse forms of competition and support, and equips people to scale through partners and modern tools.

www.schmidtfutures.com

The Rhodes Trust

The Rhodes Trust is the home of the world’s preeminent graduate fellowship, the Rhodes Scholarship, based at the University of Oxford since 1903. In its second century, they are expanding the Rhodes Scholarships globally and broadening their impact through partnerships that develop exceptional leaders across different life stages and areas of focus.

www.rhodeshouse.ox.ac.uk

Connecting with Schmidt Science Fellows

For more information about Schmidt Science Fellows and our Nomination and Selection process, please visit:

www.schmidtsciencefellows.org

To learn more about the background, motivations, and work of some of our Fellows, please visit:

www.schmidtsciencefellows.org/news/we-are-schmidt-science-fellows

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schmidt-science-fellows

For regular updates and news from Schmidt Science Fellows and our Fellows sign up for our regular news email at: schmidtsciencefellows.org/email-updates

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