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PALM is funded by NSF Research Coordination Network in Undergraduate Biology Education grant #1624200.
No Excuses
by w. mark leader, editor

There have always been many reasons to attend the ASCB|EMBO annual meeting, chief among them the extraordinary science, the networking, and the many professional development opportunities. But of course the appeal of the meeting had to be balanced against the cost and inconvenience of traveling, sometimes a great distance, in December, during final exams, just before the holiday season. But now that the COVID-19 pandemic has prompted ASCB and EMBO to offer the meeting online, there really is no reason not to attend, especially since registration is free for ASCB members. To find out how truly exciting Cell Bio Virtual 2020 will be, read the guest President’s Column by Program Committee Co-Chairs Buzz Baum and Rebecca Heald (p. 5) and Science Writer Mary Spiro’s outline of what will occur at the meeting (p. 16). Articles in the Annual Meeting section announce the winners of 2020 ASCB honorific awards, and many of those winners will speak at the meeting.

We haven’t been able to preserve every aspect of an in-person meeting, of course. It will be a bit harder to network, and chance meetings with colleagues and friends will be less frequent. But there will be plenty of opportunities to interact with your peers, in roundtable discussions, in Q&A sessions, and in poster presentations. Labby has some advice about how students presenting their research in this unusual meeting environment can get the most out of the experience (p. 43).

That we are still able to have a version of the ASCB|EMBO meeting at a time when so much of life has been disrupted is a wonderful thing. Be sure to take advantage of the opportunity.

The COVID-19 pandemic has affected not only the way we meet, but the way we do almost everything. In her feature article, Erika Shugart reflects on the ways it has changed the way we work, at ASCB and elsewhere (p. 8). And during these extraordinarily stressful times, there is (or needs to be) heightened awareness of the importance of mental health. Both the Emerging Voices (p. 36) and Career Navigator (p. 39) columns address that important subject.

Catherine Dulac won a 2021 Breakthrough Prize in Life Sciences. Dulac is the Higgins Professor of Molecular and Cellular Biology at Harvard University and a Howard Hughes Medical Institute Investigator.

ASCB’s 2021 President Ruth Lehmann won the 2021 Vilcek Prize in Biomedical Science. Lehmann is the director of the Whitehead Institute and a professor of Biology, Massachusetts Institute of Technology.

Scott E. Fraser, Provost Professor and Elizabeth Garrett Chair in Convergent Bioscience, University of Southern California, and Daniel Colón-Ramos, McConnell Duberg Professor of Neuroscience and professor of cell biology, Department of Neuroscience and Cell Biology, Yale University School of Medicine, were among 100 new members elected to the National Academy of Medicine.
Extreme Makeover of the Annual ASCB|EMBO Meeting

By Buzz Baum and Rebecca Heald

Over a year ago, back when we agreed to help organize the 2020 ASCB|EMBO meeting, we had a vision. We thought back to the thrill of previous meetings. We remembered the talks we had heard that captivated us, conversations over a beer that altered the path we took in science, the awesome sight of a sea of hundreds of cytoskeleton posters, and the feelings of exhilaration and terror when sharing unpublished data. We wanted to make sure that this year’s meeting lived up to this legacy as an event to remember both for those coming for the very first time and for those who have come to every ASCB meeting since they were students.

We also wanted this year’s ASCB|EMBO meeting to be more than just a U.S./European affair. We wanted it to live up to its reputation as an inclusive conference that brings together cell biologists from across the globe. This seemed especially important given the recent tides of nationalism. Science, after all, is a collective human endeavor. While a flash of insight by one individual may change the way we see things, it is the work of the community that drives science forward and ensures that our understanding of the biological world stands on solid foundations. For research to have lasting impact, it has to be possible to replicate it in Buenos Aires, Birmingham, and Bangalore. It is by sharing our data and our ideas at meetings, like the 2020 ASCB|EMBO meeting, that the truth emerges, and we can suddenly make sense of how all the little pieces fit together.

To make this possible, and mindful of the need to share our views of the natural world in a way that doesn’t contribute to its destruction, it was our wish that the 2020 meeting be streamed online. The idea was to use the latest technology to bridge the entire cell biology community, so that scientists could still attend even if they were unable to travel to the meeting (because of financial or family concerns or visa issues) or had decided not to fly because of their concerns about the carbon cost. Everyone said, “Nice idea. But no. The technology simply isn’t there yet. It’s impossible. In five years?” And then along came SARS-CoV-2.

The impact of COVID-19 on all of our lives has been devastating. But in responding to the challenges of the pandemic our eyes have been opened. The virus has shown us how adaptable we are. It has showcased the amazing ability and urge of scientists worldwide to share data (including the Chinese scientists who first released the SARS-Cov-2 genome sequence) and to rise to a challenge. With humanity pitted against a deadly virus, funding agencies acted quickly to support research, journals were willing to fast-track the publication process, and our scientific community
has been eager to apply basic research to the problem and to correct any misconceptions that have come with the pressure to produce drugs and vaccines. It has been amazing to see the speed at which knowledge can advance! The virus has also taught us how much of our work can be done from home, in pajamas.

So, here we are, hosting the first virtual ASCB|EMBO meeting. It’s a milestone! Suddenly there are no borders. From undergraduates to emeritus professors, there are no limits to who can share their results and learn about the very latest, exciting cell biology and participate in career development and networking events.

While we envisioned the ASCB|EMBO meeting having an online presence, we never imagined anything like the virtual conference that has been made possible through the heroic efforts of the ASCB and EMBO leadership, including ASCB President Eva Nogales, the Program Committee that helped to identify the very best speakers and topics, and most of all the ASCB and EMBO staff who are actually going to make it happen. Suddenly, however, all that is lost by not meeting in person becomes clear. It’s not just the smell of the poster session popcorn. We are reminded that the annual ASCB|EMBO meeting was never just a conference. It’s a family affair and carnival all mixed into one. By not gathering, we’ll miss the session juggling, the brave student who puts his head into the jaws of the old lion, the magic of a gesticulation that makes an abstract idea clear, and above all, the multigenerational lab reunions. Yes, science is a collective social endeavor. And we are social creatures: “Half chimp, half bee.” So, let’s hope that future meetings can include online streaming but also emphasize the importance and need for human interactions.

Even before the COVID-19 crisis and the decision to put on a virtual meeting, ASCB was committed to making the meeting more diverse and inclusive. This year, for the first time, a new speaker selection process was deployed that ensures better representation of presenters and topics. As always, the program includes education and professional development sessions, as well as opportunities for attendees at all career levels to interact and establish mentoring relationships.

So, change out of your pajamas (if you feel like it), sign up, and log on for what promises to be one of the most memorable ASCB|EMBO meetings ever. We have a brilliant set of sessions and speakers covering the full breadth of cell biology. Our Keynote speaker, Svante Pääbo, promises to tell us about one of the most remarkable stories in modern science—our origins as a species. We have a wide range of Symposia, Minisymposia, and Workshops on topics including the cytoskeleton and intracellular trafficking, cell–cell communication and information processing, the emergence of pattern and form in tissues, and the cell biology of diseases. The meeting also features a special session on COVID-19.

This year, the virtual format removes barriers and allows our global cell biology community to get involved, participate in the conference, and connect with other scientists and educators.

We can’t wait to see all of you there!

About the Authors
Rebecca Heald is professor of Cell and Developmental Biology at the University of California, Berkeley. Buzz Baum is Group Leader in the Cell Biology Division at the Medical Research Council Laboratory of Molecular Biology.
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As I sit down to reflect on the changes that COVID has brought to my life and work, I am in a room that I am using as a temporary office. It was once my children’s computer space, and still does double duty as our craft room. Shelves of slime-making materials, clay for ceramics, and fabric for sewing compete for space with my files and books on associations. School is being held virtually, so we have three simultaneous Zoom calls in the house for 6+ hours a day. Seven months have passed since my region first went into lockdown and we are still very much not normal. I am fortunate in that my children are older and fairly self-sufficient and that I have the ability to have fast internet and separate spaces so we can have privacy during calls, but that doesn’t make it easy to adapt to the current situation. I have been reflecting on the unexpected challenges and opportunities that this pandemic has brought.

**Teamwork**

The ASCB office like many workplaces went completely virtual earlier this year. We were able to make the initial pivot very smoothly because almost all employees had telecommuting arrangements already in place and were used to working from home at least one day a week. Initially, we had to focus on the transition of business processes such as how to move our payment system from paper checks to electronic
payments. We also needed to transition several in-person meetings and training events to be virtual. We then worked to expand our online offerings for our members who were stuck at home. The fact that our team all knew each other and were used to working together helped tremendously to keep us moving.

In the Washington, DC, area it is unclear when it will be safe for businesses like ours to reopen so we will be working remotely for the foreseeable future. This has moved us to a new working mode. We are being more purposeful in checking in with each other since we don’t have the random hallway moments. We are also holding more short, small group meetings so people can check in on progress. Unfortunately the meetings result in many of the staff suffering from Zoom fatigue so the novelty of team building activities like virtual happy hours has long worn off. We are working to find new ways to keep connected, including a walking challenge and lots of pet and cooking photos in our Slack messages. I have also been encouraging people to take some of their vacation days even if they are staying at home. We are also working to make sure that work doesn’t bleed into all hours of the days. I find that the ASCB team works more effectively when they have a chance to recharge regularly. No one can maintain focus on work 24 hours a day, seven days a week. for months on end without burning out, so I encourage ASCB staff to look after themselves so that we can look after our members.

Parents in the Workplace

When our local school system declared that classes would start online and children would return to school in January at the earliest, you could hear a collective scream of frustration from parents echoing through my community. The impact on parents of young and school-aged children during the lockdown period has been significant. Additionally, there are indications that this is affecting women more than men. I have children in middle school and high school (12 years old and 14 years old, respectively) so they can log on to classes and manage their work fairly independently, but I still find myself distracted by their noise, IT issues, meal prep, etc. At the same time, my work is busier than ever as we prepare for our first large virtual meeting, Cell Bio Virtual 2020.
I would encourage parents to cut themselves some slack and be as flexible as possible. Given the negative impact that COVID appears to be having on women’s careers, parents need to share their parenting duties so that the burden is falling as fairly as possible. My children spend half of their time with their father so I try to work longer hours when I don’t have them. Additionally, I have given up some (all) of my ideals about limited screen times, since that is now the way that my kids learn and socialize. It should not be up to individual parents to figure this out by themselves and fill the void of the lack of child care on their own; employers need to keep in mind that it is not just up to the parents to adapt. This is a temporary situation, and managers and supervisors must do our best to retain employees. This is not the time to micro-manage employees. Parents may need to shift worktimes to accommodate their children’s schedule, and workplaces need to accommodate them by focusing on what gets done rather than worrying about working hours. And while it isn’t sustainable in the long term, short-term leave or short periods of lower productivity should be expected to enable employees who may get ill or have caretaking duties.

New Ways of Doing

The press has been full of articles speculating about how many of the changes due to the pandemic will be permanent. I think that increased teleworking is here to stay as many employers who were reluctant to allow it have had it forced on them (and hopefully have realized that it is just fine). I also think that we will be doing more small meetings virtually, which should be good not only for people’s time, but also for the environment. At the same time I don’t think that Zoom and its ilk are the death knell for in-person meetings. Virtual interactions cannot replace in-person experiences, and I for one cannot wait for the day that I can see our members face to face again. Until that day, I hope that you stay healthy!

About the Author

Erika Shugart is CEO of ASCB.

I don’t think that Zoom and its ilk are the death knell for in-person meetings.
In late September, ASCB held an online town hall to present and discuss its developing Diversity, Equity, and Inclusion action plan, which was started by Council in June. The town hall featured ASCB President Eva Nogales of the University of California, Berkeley; MariaElena Zavala, a member of ASCB’s Minorities Affairs Committee from California State University, Northridge; and ASCB CEO Erika Shugart.

The initial short-term actions and how they were developed during the Council meeting can be reviewed at www.ascb.org/society-news/ascb-to-take-action-on-diversity-equity-and-inclusion. The online event, which can be viewed at www.ascb.org/ascb-meetings/ascb-town-hall-on-diversity-equity-inclusion, gave ASCB leadership the opportunity to not only outline the work being done on diversity, equity, and inclusion but obtain feedback from participants and viewers about future plans. Following the event, ASCB is asking for additional feedback through an online survey (www.surveymonkey.com/r/JHJWW2J), which can be filled out anonymously. The request for feedback is ongoing and will feed into the process of developing a longer-term diversity, equity, and inclusion action plan.

During the town hall, Zavala presented an overview of some of ASCB’s historical milestones regarding diversity, equity, and inclusion, including the formation of the Minorities Affairs Committee (MAC), the Women in Cell Biology (WICB) Committee, and the LGBTQ+ Committee. These committees have attracted extramural funding, which, in turn, has been funneled into programs and awards that support the Society’s mission to improve diversity and inclusivity in the biomedical workforce and within the Society. Zavala noted how various awards and programs such as the E.E. Just Award and Lecture and the Faculty Research Education Development (FRED) Mentoring Program have supported the Society’s diversity, equity, and inclusion goals. Furthermore, she mentioned that ASCB activities have resulted in hundreds of people participating in diversity, equity, and inclusion sessions at the annual meeting as well as published research on the outcomes of the Society’s efforts.

“I don’t think that diversity, equity, and inclusion is the sole responsibility of WICB, MAC, or the LGBTQ+ committees,” Zavala concluded. “It’s everybody’s responsibility to encourage people who might not look like us to become scientists.”

She also advised ASCB members to reflect upon how their own behaviors impact inclusivity and to take stock of the people working in their labs, departments, and institutions and to analyze any processes (for hiring, etc.) in place that may affect diversity, equity, and inclusion.

During the second half of the town hall, Shugart outlined the current action plan and highlighted some activities from the plan that have already rolled out as of September. She cited, for example, the town hall itself, the new selection process for speakers in Minisymposia at the annual meeting, inclusivity grants to pay for the registration and abstract fees of virtual meeting attendees (www.ascb.org/grants-awards/inclusivity-and-childcare-grants-2), and the Voices series in the Society’s basic research journal Molecular Biology of the Cell. Shugart also explained the goals
of two recently formed task forces: one to examine the overall portfolio and nomination processes of the Society’s honorific awards and another to develop a more long-term diversity, equity, and inclusion action plan that aligns with the Society’s strategic plan and is realized over the next three to five years.

The town hall concluded with a question and answer session. ASCB welcomes questions and comments regarding the action plan, the town hall, or any of ASCB’s diversity, equity, and inclusion activities to ascbinfo@ascb.org.

“As long as inequality exists as it relates to race, gender, ethnicity, this is something that has to be confronted, it cannot be ignored…ASCB will work with that endeavor in mind,” Nogales added at the conclusion of the town hall. “Also it is very important that we do this as a group and that everybody gets involved, not just those who are being discriminated against.”

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**Volunteer to Review CVs**

Give back to your cell biology community by signing up to help younger ASCB members with online CV review. We are always looking for more volunteers, including ASCB members in academia and industry, to help review cover letters, CVs, and resumes of young ASCB scientists. We will match you, and will only ask you to review two or three times a year. If you can help, please contact Thea Clarke at tclarke@ascb.org.

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**Explore the best Cell Biology content from The Scientist**

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You may have noticed that ASCB’s basic science journal, *Molecular Biology of the Cell (MBoC)*, has recently featured short explanatory videos to accompany some article abstracts. These videos, called Science Sketches, are the brainchild of *MBoC* editors Lisa Dennison and Liam Holt, and are part of a new science outreach partnership with the journal.

“[l]I strongly believe that we scientists have a duty to explain what we do to the general public,” said Holt, who is an assistant professor in the Department of Biochemistry and Molecular Pharmacology at New York University. “This is crucial for public education, and it’s also required for the survival of science. If people don’t understand what we’re up to, they tend to assume that we’re creating evil monsters or something. So, I wanted to fill two needs: the need to engage the public and the need to provide opportunities for scientists to contribute to this effort.”

*MBoC* authors who choose to create Science Sketch videos are coached through the process by Holt and Dennison, who is the Director of Research Development Communications and assistant professor at the University of Texas Southwestern Medical Center. Typically, authors use their cell phone or other simple...
camera, position over a white board or other plain surface, and then, either using props or by hand drawing, they illustrate a concept presented in their paper. After filming, they record a voiceover to describe what is happening. The result is a lively cartoon explaining their research in an accessible way. Watch a video featuring Dennison explaining the process to see some examples: www.ascb.org/science-news/create-a-video-abstract-to-accompany-your-MBoC-paper.

Holt said the idea for his own first two-minute Science Sketch video came from his realization that people think of different things when you say the word “protein.” “People think nutrition. So, you can completely lose your audience within the first 10 seconds of a talk,” Holt said.

After a brief Google search, Holt discovered that his friend Louise Jawerth, at the time working in Anthony Hyman’s lab in Germany, had collaborated with Dennison to make short videos to explain her work. Jawerth connected Holt and Dennison, and as it happened, the two were slated to be at Woods Hole Research Center at the same time, providing them an opportunity to discuss making video abstracts.

“Lisa had already spearheaded the whole two-minute video idea, and I was very excited to try it out as a science communications approach for fundamental concepts. So, we made our first Science Sketch together that summer of 2016 called “What is a protein?” (www.sciencesketches.org/post/2016/08/18/what-is-a-protein).

“That video remains one of my favorites,” Dennison said. “The LEGO-cow-turned-airplane always gets a laugh when I play it at workshops, and then I think it gets people thinking about how they might incorporate fun, creative visual elements into their own videos.”

Dennison said the collaboration with Holt marked the official launch of Science Sketches.

“I loved how the process of creating these videos helped each scientist think about their own work in a new way, and everyone was so excited to have this fun final product that they could share with family, friends, and colleagues outside their own narrow field of expertise,” Dennison said. “Connecting with Liam at Woods Hole was such great fortune. His vision about our duty as scientists to engage and educate the public paired perfectly with my goal to help scientists communicate their work in an accessible way.”

Holt and Dennison hope that their collaboration with MBoC will enhance the reach of basic science to scientists in other disciplines, as well as to the public. “We want to help scientists learn to communicate in different ways and also increase the impact of their work,” Holt said. “When Matt Welch [MBoC Editor-in-Chief] approached Lisa and me with the idea to collaborate, it seemed like a great match.”

Welch said he had heard Dennison give a talk about her work with Science Sketches. “I immediately realized that this would be a perfect format for implementing video abstracts for MBoC papers,” Welch said. “What I love about Science Sketches is that they succinctly communicate key scientific concepts and findings, and they do so while featuring artistic creativity and personality. And what I’ve learned from Lisa and Liam is that they are fun to make as well. I’m really excited that MBoC authors have the opportunity to work with Lisa and Liam to make Science Sketch video abstracts and bring their science to life for our readers.”

Dennison added, “While we had helped create video abstracts before, they were largely ‘unofficial,’ and primarily shared by the authors on their own lab websites or social media accounts. Pairing officially with MBoC has been really exciting for us and helped broaden the reach of this project. We would love for ALL papers to be accompanied by an accessible video—what a great way to help more people understand the fascinating, complex, exciting work being done by scientists around the world! I hope the MBoC model will be adopted by other journals as well.”

In addition to the partnership with MBoC, Science Sketches is also working with a new education platform, the Explorer’s Guide to Biology (XBio), and with various educators across the world.
Voices

MBoC is pleased to introduce its new Voices feature. In these essays, diverse members of our community, particularly those whose voices have historically been unheard, will raise issues, share experiences, and present perspectives that are important for our broader community to listen to and understand.

Beyond the bench: how inclusion and exclusion make us the scientists we are
Christina M. Termini and Amara Pang (September 15, 2020)

Here are some important recent papers that the MBoC Editorial Board has selected for highlighting:

Recognition of nuclear export signals by CRM1 carrying the oncogenic E571K mutation
Jordan M. Baumhardt, Janek S. Walker, Yoonji Lee, Binita Shakya, Chad A. Brautigam, Rosa Lapalombella, Nick Grishin, and Yuh Min Chook (August 1, 2020)
Structural and biophysical studies show that CRM1(E571K) binds differently to a small subset of nuclear export signals (NESs). NESs of Mek1, RPS2, and 4E-T bind CRM1(E571K) >10-fold differently, but only 4E-TNES is accessible in the full-length protein. 4E-T is mislocalized to the nucleus in HEK 293 and patient cells carrying CRM1(E571K).

A septin-Hof1 scaffold at the yeast bud neck binds and organizes actin cables
Mikael V. Garabedian, Alison Wirshing, Anna Vakhrusheva, Bengi Turegun, Olga S. Sokolova, and Bruce L. Goode (August 15, 2020)
Septins and Hof1 form evenly spaced pillars at the yeast bud neck, which align, orient, and bundle actin cables entering the mother cell compartment to facilitate polarized vesicle transport.

Kinetochores suppress neuronal microtubule dynamics and promote dendrite regeneration
James I. Hertzler, Samantha I. Simonovitch, Richard M. Albertson, Alexis T. Weiner, Derek M. R. Nye, and Melissa M. Rolls (September 1, 2020)
Kinetochores are quintessential mitotic structures that monitor microtubule connections to chromosomes. Here, it is shown that kinetochore proteins are required in mature neurons for normal regeneration of injured dendrites. At the subcellular level they control microtubule nucleation, specifically in dendrites.

XMAP215 and γ-tubulin additively promote microtubule nucleation in purified solutions
Brianna R. King, Michelle Moritz, Haein Kim, David A. Agard, Charles L. Ashbury, and Trisha N. Davis (September 15, 2020)
XMAP215 promotes microtubule nucleation independently as a polymerase of nucleation intermediates. Across a range of polymerase activities, XMAP215 and γ-tubulin function additively, indicating independent modes of action. Any synergistic behavior must arise from unique interactions made in the context of the γ-TuRC.
Online Cell Biology Meeting Aims to Engage and Enthrall Attendees

By Mary Spiro

Cell Bio Virtual 2020—An Online ASCB|EMBO Meeting came into being when the global pandemic forced ASCB and EMBO to move their traditional annual meeting fully online. But the meeting planners say they had hoped for an online component to the meeting from the outset. Greater access to a broader audience was, in fact, what Program Committee Co-Chairs Rebecca Heald and Buzz Baum intended all along in putting this meeting together.

“The meeting is special this year because it is virtual,” said Heald, professor of Cell and Developmental Biology at the University of California, Berkeley. “While this has brought with it many challenges, it also provides us with a great opportunity to make the ASCB|EMBO meeting even more inclusive. We very much hope that this year’s meeting will bring together the cell biology community from right across the world.”

The topics in each Symposium, Minisymposium, and poster will, of course, span the full breadth of cell biology, Heald and Baum reported.

“However, beginning with our Keynote speaker, there will be a special emphasis on evolution,” added Baum, a Group Leader in the Cell Biology Division at the Medical Research Council Laboratory of Molecular Biology in Cambridge, England. “There are also two special sessions on SARS-CoV-2.”

A COVID-19 Special Interest Subgroup occurs Wednesday, December 9, from 1:45–3:45 pm ET and a special COVID session will be presented on Thursday, December 10, from 1:15–2:15 pm ET.

“These special sessions will highlight how rapidly the community has been able to progress in understanding the cell biology of the virus as it interacts with human cells, and how researchers plan to apply this knowledge to help tackle COVID-19,” they remarked.

You can read more about the evolution of the Program Committee’s philosophy in planning Cell Bio Virtual 2020 in Heald’s and Baum’s guest President’s Column in this issue of the ASCB Newsletter (p. 5).

Programming occurs December 2–16, with educational and professional development content planned for December 2–4; scientific sessions, exhibitor talks, and roundtables happening December 7–11; and live poster presentations occurring December 14–16. All posters will be available to view from December 2–January 15. Most sessions will be available to view on demand until January 15. Because of this format, ambitious participants can attend many more sessions and events than they ever could in a live setting.

Education and Professional Development Sessions

With an online format and the ability to watch sessions after they’ve happened, including sending questions to the presenters, ASCB meeting organizers chose to schedule education and professional development (EPD) sessions for the first few days of Cell Bio Virtual 2020. Organized by ASCB members, the EPD sessions focus on topics related to the scientific enterprise such as education, career development, international relations, science policy, communications, and diversity in the scientific workforce. The Education Minisymposium, “Teaching Excellence Amidst Uncertainty,” will be held Wednesday, December 2,
from 10:00–11:00 am ET. Other EPD sessions will occur between 10:00 am and 5:30 pm ET during these first four meeting days.

**Evolutionary Keynote**

The basic science portion of the meeting kicks off on Monday, December 7, at 10:00 am ET with the not-to-be-missed Keynote talk from Svante Pääbo, who is director of the Max Planck Institute of Evolutionary Anthropology in Leipzig, Germany, as well as a researcher at the Okinawa Institute of Science and Technology, in Onna-son, Japan. Pääbo is one of the founders of paleogenetics and his team has developed a technique for isolating and sequencing the DNA of extinct creatures, which they apply to a variety of fragile, ancient source material from extinct human species and *Homo sapiens*. In his talk, he will link the past with our present circumstances.

“I will review our efforts to develop methods to retrieve genomes from archaeological and paleontological remains that are tens and hundreds of thousands of years old,” Pääbo said. “I will focus particularly on Neandertals and Denisovans, extinct forms of humans who are the closest evolutionary relatives of all present-day humans. I will discuss how these extinct hominins have contributed genetic variation to people alive today, and give examples of how these genetic contributions have both positive and negative consequences today, for example increasing sensitivity to pain, decreasing the risk for miscarriages, and increasing the risk of becoming severely ill when infected by SARS-CoV-2.”

Also on this day, ASCB and EMBO leadership will address attendees as they usually would on opening night. Short videos about our 2020 Prize for Excellence in Inclusivity awardee JoAnn Trejo and Public Service Award recipient Anthony Fauci will premiere.

**Symposia, Microsymposia, Special Interest Subgroups, and Poster Sessions**

Symposia, Minisymposia, Special Interest Subgroups, and other programming will be presented online between 10:00 am and 5:30 pm during the second week of the meeting. Twenty-eight 90-minute basic research Minisymposia spanning the seven scientific tracks of the meeting, will occur Monday, Tuesday, Thursday, and Friday from 11:30 am to 1:00 pm ET. Twenty-seven Special Interest Subgroups, organized by members, are slated to happen from 1:45 to 5:00 pm ET.
on Monday, Tuesday, Wednesday, and Friday. Topics, talk titles, and presenters can be found for all on the meeting website (www.ascb.org/cellbiovirtual2020).

Although we will miss the hum of conversation at the poster displays blended with the excitement and fun of the vendor booths this year, both will have a home in the virtual setting. Over 200 Poster Discussion Sessions will be scheduled in nine time slots during the third week of the meeting. They will allow for face-to-face interaction among presenters of posters with similar topics and attendees who choose to visit the virtual meeting rooms.

Aside from the poster sessions, the Symposia are always another main attraction of the meeting. This year nine Symposia by experts in each subspecialty will begin at 10:00 am ET each day. Here is a summary of all nine with highlights and things to look out for, as offered by some of the presenters. Most speakers will be available in meeting rooms for live, informal Q&A exchange following their sessions.

**TUESDAY**

**Cells in Distress and Disease**

“Jamming-unjamming Transitions in Cancer Progression,” Peter Friedl, Radboud University Medical Center in Nijmegen, The Netherlands

“How the Tubercle Bacillus Co-opts Host Pathways to Cause Cell Distress and Death,” Lalita Ramakrishnan, the University of Cambridge

**Dynamic Intracellular Organization**


“I will be talking about the 99% of the rest of the microtubule. For decades we have been focusing on the microtubule tip, the few hundreds of nanometers where tubulin dimers are added or removed to promote microtubule growth or shrinkage. However, microtubules are tens of micrometers long! I will argue that we have been fascinated by the tip of the iceberg but that an exciting world exists all along the rest of the microtubule and that key functions and properties are regulated there. I will also take advantage of the virtual meeting to put forward the young people who performed the experiments and show them in their natural environment: the bench! For this I hired a movie director in order to nicely combine real life and the presentation of actual, unpublished data,” said Théry,

**WEDNESDAY**

**Cell Shape, Cell Division, Migration, and Death**

“E. coli Meets World: How the Environment Shapes a Bacterial Cell,” Petra Anne Levin, Washington University in St. Louis

“Maintenance and Remodeling of Epithelial Cell–Cell Junctions during Cell Shape Changes,” Ann L. Miller, University of Michigan, Ann Arbor

“My talk will focus on a rapid repair pathway my group has discovered that allows epithelial cells to change shape while maintaining their cell–cell connections (specifically their tight junctions). In my talk I will introduce some key background information about cell–cell junctions and why epithelial cell shape change is biologically important, unanswered questions in this field, why we use frog embryos to study these questions, key points about our published work, and new unpublished data about how calcium signaling is involved in the tight junction repair pathway. We do a lot of live imaging in my lab, so I will show movies of frog epithelial cells to grab people’s attention. We can obtain a lot of quantitative information from these movies, so I will also show how we quantify specific features across multiple embryos/movies. I will try to simplify my slides to deliver the key points (always
a good idea, but especially in the virtual setting). I will also highlight the people in my lab who did the research. Many of them will be giving talks and/or posters at the meeting, so I will encourage viewers to check out their presentations to get more information! Finally, I’ve found that virtual talks have been great for promoting questions and discussion. I hope to get lots of questions from trainees either during the Q&A session or the chat!” explained Miller.

**Growth, Pattern, and Form**

“Sensing Fluid Flow by Immotile Cilia for Left-Right Patterning,” Hiroshi Hamada, Center for Developmental Biology, RIKEN, Kobe, Japan

“Using the Cell Biology of Embryogenesis to Inform Tissue Regeneration and Repair in the Heart,” Kristy Red-Horse, Stanford University

**Information Processing**

“Getting in Touch with Mechanical Pain,” Diane M. Bautista, University of California, Berkeley

“Dynamic Changes in tRNA Modifications and Abundance during T-cell Activation,” Yitzhak Pilpel, Weizmann Institute of Science, Rehovot, Israel

**THURSDAY**

**Cellular Identity**

“A Numbers Game Goes Awry: How Aneuploidy Affects Cell Behavior and Identity,” Rong Li, Department of Cell Biology, Johns Hopkins University, Baltimore, MD, and Mechanobiology Institute, National University of Singapore

“Principles of Cellular Compartmentalization,” Anne Spang, University of Basel, Switzerland

**How Different Cells Interact: Sex, War, Competition**

“Mycobacterium Tuberculosis and Macrophages: A Tug of War,” Max Gutierrez, The Francis Crick Institute, London

“Epic-genetic Battles and Other Tales of Innate Immune Memory,” Musa Mhlanga, Radboud Institute for Molecular Life Sciences, Radboud University Medical Center, and the Epigenomics & Single Cell Biophysics Group, Department of Cell Biology, Radboud University, Nijmegen, The Netherlands

**FRIDAY**

**Collective Cell Behavior**

“Gut Instinct: The Intestine as a Model to Study Age-related Changes to Stem Cells and the Niche,” Leanne Jones, University of California, Los Angeles

“My lab is generally interested in the mechanisms that are involved in regulating adult stem cell behavior and how those mechanisms are disrupted by aging and changes in metabolism. What I hope to cover in my talk is how aging can impact the cell–cell adhesion complexes that form the intestinal barrier. Our data are suggesting that the trafficking of adhesion proteins to the cell surface becomes disrupted in an aged animal, which has implications for many tissues that contain tight junctions (not just tissues maintained by stem cells). I think that is very exciting, as it may be linked to a number of age-onset diseases,” said Jones.

“Sources of Regenerative Capacity in Animals,” Alejandro Sánchez Alvarado, Howard Hughes Medical Institute, Stowers Institute for Medical Research, Kansas City, MO

**The Genome**

“The Role of Spatial Proximity in Genome Regulation,” Wendy Bickmore, MRC Human Genetics Unit, University of Edinburgh, UK

“Loop Extrusion with Barriers as a Genomic Communication System,” Leonid Mirny, Massachusetts Institute of Technology

For up-to-the minute information on the Cell Bio Virtual 2020 meeting and to build your itinerary, visit the meeting website: www.ascb.org/cellbiovirtual2020.
Introducing Cell Bio 2020 Virtual—An Online ASCB|EMBO Meeting
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New meeting name. Same great science. Exciting changes are planned for the reinvented ASCB|EMBO meeting.

Cutting-edge science is the core of the cell biology community, and Cell Bio Virtual 2020 is the place to learn from and collaborate with stellar researchers in the field. ASCB prioritizes inclusivity and diversity in science as reflected in the meeting’s hot topics and engaging programming. To enhance our inclusive environment, we looked to you, our members—as presenters, organizers, and attendees from every career level, research area, and institution—as leaders to create and plan content that best suits the meeting you want to attend. This is a meeting designed by you.

Be sure to attend the ROUNDTABLE DISCUSSIONS
These informal sessions focus on hot topics within the scientific community. Attendees can take a break in between the scientific sessions, grab a snack, and join a virtual topic “table” to network with peers. Table leaders are responsible for facilitating the topic discussions.

Connect with colleagues and HOST A NETWORKING SESSION
In order to create that “meet-in-the-hallway” experience, any attendee can sign-up to host a networking room and invite his or her colleagues to join or just leave it open for other attendees to participate. Meet with your labmates for a reunion or continue the conversation from a session you’ve attended. Either way, these rooms are at your disposal. Limited rooms are available on a first-come, first-served basis. Sign up at www.ascb.org/cellbiovirtual2020/program/networking.

2020 KEYNOTE LECTURE

ARCHAIC GENOMICS
Svante Pääbo

Director, Max Planck Institute of Evolutionary Anthropology, Leipzig, Germany
Okinawa Institute of Science and Technology, Onna-son, Japan

Svante Pääbo is known as one of the founders of paleogenetics. Pääbo and his team developed a technique of isolating and sequencing the DNA of creatures long extinct, using a variety of fragile, ancient source material from Homo sapiens and other human species.

IMPORTANT DEADLINES
Nov. 19 Registration Cancellation Deadline
Dec. 1 Virtual 2020 Inclusivity Grant Deadline
Dec. 1 Childcare Grant Deadline
2020 SYMPOSIA

DYNAMIC INTRACELLULAR ORGANIZATION
Tracks: Cellular Dynamics and Physical Cell

Cliff Brangwynne
Princeton University

Manuel Théry
French Alternative Energies and Atomic Energy Commission (CEA)

CELL SHAPE, CELL DIVISION, MIGRATION AND DEATH
Tracks: Cellular Dynamics and Cellular Genome

Petra Anne Levin
Washington University

Ann L. Miller
University of Michigan

INFORMATION PROCESSING
Tracks: Signaling and Metabolism and Specialized Cell and Evolution

Diane M. Bautista
University of California, Berkeley

Yitzhak Pilpel
Weizmann Institute of Science

GROWTH, PATTERN AND FORM
Tracks: Communal Cell and Physical Cell

Hiroshi Hamada
RIKEN Center for Biosystems Dynamics Research, Kobe, Japan

Kristy Red-Horse
Stanford University

THE GENOME
Tracks: Cellular Genome and Physical Cell

Wendy Bickmore
MRC Human Genetics Unit, Edinburgh, UK

Leonid Mirny
Massachusetts Institute of Technology

CELLS IN DISTRESS AND DISEASE
Tracks: Cells in Distress and Disease and Specialized Cell and Evolution

Peter Friedl
Radboud University Medical Centre, Nijmegen, The Netherlands

Lalita Ramakrishnan
University of Cambridge

HOW DIFFERENT CELLS INTERACT: SEX, WAR, COMPETITION
Tracks: Cells in Distress and Disease and Specialized Cell and Evolution

Max Gutierrez
The Francis Crick Institute, UK

Musa Mhlanga
University of Cape Town, South Africa

COLLECTIVE CELL BEHAVIOR
Tracks: Communal Cell and Cells in Distress and Disease

Leanne Jones
University of California, Los Angeles

Alejandro Sánchez Alvarado
Stowers Institute for Medical Research/HHMI
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Jennifer Lippincott-Schwartz has spent most of her career as a cell biologist devising live cell imaging techniques for studying how cells are organized and dynamically function. Most recently, at the Howard Hughes Medical Institute’s Janelia Research Campus, she’s been studying how organelles communicate with each other through inter-organelle contacts and the role this plays in maintaining cell homeostasis. This professional focus has yielded many intriguing discoveries and countless beautiful images. ASCB is pleased to announce that Lippincott-Schwartz will present this year’s E.B. Wilson Award Lecture at Cell Bio Virtual 2020—an Online ASCB|EMBO Meeting. I recently had an opportunity to speak with Lippincott-Schwartz about her work and approach to science and scientific societies like ASCB.

Neurons and Astrocytes
All too often cell biologists use only a single cell type when addressing a question, but when Lippincott-Schwartz and recent postdoctoral fellow Maria Ioannou looked at neurons co-cultured with astrocytes they were in for a surprise. The two cell types exhibited an interdependency on each other’s specific functions. The neuron, especially after electrical excitement, cleared itself of harmful lipids by releasing lipoprotein particles, while nearby astrocytes took up the particles and digested them. Without such intercellular collaboration, the neuron deteriorated.

This discovery, Lippincott-Schwartz said, sparked her interest in whether there is interdependency among other cell types in physiological environments such as tissues. “Could intercellular collaborations be continuously underway within tissues that enable specialized and system-wide activities?” “If so,” she added, “this is our next frontier in cell biology—to understand what these collaborations are all about.”

The many advances in imaging now available make it feasible to begin examining cells in tissues, Lippincott-Schwartz said. At Janelia, she and others have benefited from using new technologies such as focused ion beam milling with scanning electron microscopy (FIB-SEM) honed for 3D analysis by Harald Hess. FIB-SEM, Lippincott-Schwartz said, is an amazing technology for obtaining unparalleled 3D views of organelles throughout an entire volume of the cell. “Every FIB-SEM volume set whose organelles have been segmented I’ve looked at has led to surprises and questions I would have never asked before.” Another advanced technique Lippincott-Schwartz’s team is using lets them image cells at sufficiently high spatial-temporal resolution that single proteins can be individually tracked as they diffuse across an organelle. “This has allowed us to study how proteins on one organelle change their motion in response to interactions with proteins on a different organelle,” Lippincott-Schwartz said.
Coronavirus and Kayaks

Lippincott-Schwartz is looking forward to getting back into her lab once the pandemic-induced shutdown has abated. “I never realized how important the everyday chit-chat in our lab was to our coming up with fresh ideas and approaches,” she said. Her research team at Janelia has returned in shifts to ramp back up following the pandemic-induced shutdown. “We’ve decided to join the rest of the world in trying to figure out how the coronavirus is working inside cells,” Lippincott-Schwartz said. “We are taking small steps now, realizing that the intracellular pathways followed by this virus are likely diverse, with only some leading to an effective assembly and exit pathway. Hopefully, any findings we come up with can help others working in this area.”

Lippincott-Schwartz describes Janelia as a place that provides her with the “perfect environment for doing fantastic science. We have free coffee all day, food easy to come by, no worries about grant writing, and administrative staff who are amazing,” she said. She even sometimes has the opportunity to commute to work via kayak across the Potomac River—a rare treat. “It’s not any faster than driving, but it gives you a chance to contemplate and transition from the day,” she said.

Creating the Scientific World

Lippincott-Schwartz has had a long relationship with the ASCB, serving as president in 2014. She first joined when she was a graduate student at Johns Hopkins University.

“From the very beginning, I knew that this was my society,” she said. “Everything that I was interested in was discussed at the meetings, and I had incredible opportunities to hear people I had read about and to meet people that I looked up to. Eventually, I had the chance to present my own research! I used to live in the poster hall and was always disappointed when they closed it every evening. The relationships I have made through ASCB are incredible.”

Part of the importance of scientific societies, Lippincott-Schwartz added, is that they offer opportunities to interact with colleagues in an informal way—something you cannot do by reading the literature. She looks forward to finding ways for informal discussions during this year’s virtual meeting.

“You create relationships that are important for your career development and you create a trust network,” she said. “You learn why particular scientists think the way they do. It all starts making sense in a bigger way.”

Moreover, Lippincott-Schwartz said, participating in a scientific society provides the scaffolding upon which science itself is constructed.

“Young people might think science progresses steadily by simply accumulating facts. But what we really are doing as scientists is constructing a vision of the world built on common language and agreed-on concepts....

\[W\]hat we really are doing as scientists is constructing a vision of the world built on common language and agreed-on concepts that can make sense of the facts we uncover. What scientific societies do in this scheme of things is to provide a forum for researchers to develop agreed-on language and concepts, and to assess the significance of unexpected observations that often can pave the way toward transitions in how to think about the world.”
Health Equity Expert Lovell Jones to Present 2020 E.E. Just Award Lecture

By Mary Spiro

ASCB is pleased to announce that Lovell Jones, Emeritus Professor at both the University of Texas M.D. Anderson Cancer Center and the University of Texas Graduate School of Biomedical Sciences at Houston, will present the 2020 E.E. Just Award Lecture at Cell Bio Virtual 2020–An Online ASCB|EMBO Meeting. Jones is the first Black professor from the University of Texas System to hold dual emeritus status and the first to be so honored by the University of Texas M.D. Anderson Cancer Center.

The E.E. Just Award and Lecture memorialize early 20th-century biologist Ernest Everett Just and recognize outstanding scientific achievement by an underrepresented minority scientist. The awardee is selected by the ASCB’s Minorities Affairs Committee.

Jones plans to discuss the need to change our approaches to addressing health inequities in the 21st century during the E.E. Just Award Lecture at Cell Bio Virtual 2020.

Originally from Baton Rouge, LA, Jones earned his PhD in zoology with an emphasis in endocrinology and cancer biology at the University of California, Berkeley. He was a postdoctoral fellow in the Reproductive Endocrinology Center in the Department of Obstetrics, Gynecology and Reproductive Services, and subsequent lecturer in the Department of Physiology at the University of California Medical Center in San Francisco. In 1980, Jones joined the University of Texas M.D. Anderson Cancer Center, where he was the first Black faculty member to be hired into basic sciences. He ultimately became a full professor of Biochemistry and Molecular Biology & Gynecologic Oncology and built a distinguished career researching reproductive endocrinology in the area of hormonal carcinogenesis as well as health inequities. His research centered on the relationship between hormones, diet, and endocrine responsive tumors as well as how to address health inequities among ethnic minorities and underserved communities.

More recently, the mayor of Houston tasked Jones with assembling a “strike team” to address COVID-19 and health inequities in the city of Houston. He is also Executive Director Emeritus of the Health Disparities Education, Awareness, Research & Training (HDEART) Consortium and an adjunct professor in the Department of Health Promotion and Community Health Sciences at Texas A&M School of Public Health and Research Professor at Texas A&M University, Corpus Christi.

Health disparities have always been a fundamental issue for Jones, who in interviews has said, “Health disparities are not just a problem of the poor, it’s everyone’s problem....This idea of not caring about one’s fellow man in terms of health coverage. The whole idea that we’re already paying for it in other ways that’s costing us more than doing it the right way, is just mind boggling for me.”

As a professor of health disparities research and director of the joint University of Texas M.D. Anderson Cancer Center/University of Houston Dorothy I. Height Center for Health Equity & Evaluation Research, Jones has amassed more than three decades of
experience addressing health issues of minorities and the underserved. The National Institutes of Health National Center on Minority Health and Health Disparities recognized Jones with its Director’s Award for Excellence in Health Disparities. He was also awarded the Ruth Kirschstein Diversity in Science Award and selected as a top African American Scientist in America by the National Science Foundation.

In 2000, Jones was named the first director of the congressionally mandated Center for Research on Minority Health (which was elevated to an institute in 2010). It was a multidisciplinary center the aims of which were to “foster research that addresses the causes of health disparities and translates scientific results back to the communities affected by those disparities; encourage minority students to pursue careers in the biomedical sciences; and increase recruitment and retention of minority and medically underserved populations into clinical trials.”

Jones is also a strong proponent of science education beginning with young children to combat what he describes as a “scientifically illiterate society.” At the University of Texas M.D. Anderson Cancer Center, he mentored high school students in medical academy programs to become “consultants” for college faculty. In his personal life, he is deeply involved in the community outreach program GROW Unity Resources for Living through his church Unity of Houston, where he serves on its board of directors. Jones’ complete history can be found at www.thehistorymakers.org/biography/dr-lovell-jones.

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- Minority Travel Grants
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In addition, your contributions provided support to the Early Career Scientist Award, the Merton Bernfield Memorial Award, the WICB Awards presentation, the Keith Porter Lecture, international outreach, ASCB’s public policy and public information efforts, and the LSE Fund.

We would like to thank you for supporting ASCB. Your support is vital to allow ASCB to continue to provide valuable resources to scientists.

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Anthony Fauci to Receive the 2020 ASCB Public Service Award

By Kevin M. Wilson

The 2020 ASCB Public Service Award will be presented to Anthony Fauci, Director of the National Institute of Allergy and Infectious Diseases.

Recipients of the annual ASCB Public Service Award are recognized for national leadership supporting biomedical research. Past recipients have been members of Congress who have demonstrated their strong support for science by providing funding for science and by standing up for cutting-edge research. Members of the ASCB community have also received the award for their leadership in science policy advocacy.

The award that will be presented to Fauci recognizes him “For a career of outstanding research, leadership, and scientific acumen during global crises caused by new and emerging diseases.” That leadership has never been more obvious than during the last seven months as he has led the United States and the world in the fight against the COVID-19 pandemic. His leadership became more important as the science of COVID-19 became linked with the 2020 national elections in the United States.

In prepared remarks for a Zoom presentation of the award to Fauci, ASCB’s President, Eva Nogales, recognized just how important he has been to the American public. Nogales said, “In the last seven months, as the world has suffered through COVID-19, you have told us what we NEEDED to hear, not always what we WANTED to hear. And, most of the time, most of us have responded.” Nogales continued, “The approach most people are taking to get through these months is, 'I'll do what Tony says,' because of the faith they have in what you say.”

In her prepared remarks, Holly Goodson, chair of the ASCB Public Policy Committee, recognized Fauci’s scientific accomplishments. Goodson said, “We want to recognize them and the important role model you are for young biomedical researchers, in and out of the field of immunology, many of whom will be participating in our meeting and, in this current environment, may be wondering what the future of science will be like.”

The award presentation took place on November 13, 2020, over Zoom but will be shown during the Keynote symposium at the start of the Cell Bio 2020.

The Newsletter Welcomes Letters to the Editor

Have thoughts you’d like to share with your colleagues? We’d be happy to consider your Letter to the Editor for publication in the ASCB Newsletter. Write to the Editor at mleader@ascb.org.
Erika L.F. Holzbaur Chosen as 2020 Sandra K. Masur Senior Leadership Awardee

By Thea Clarke

Erika L.F. Holzbaur, William Maul Measey Professor of Physiology at University of Pennsylvania Perelman School of Medicine, was chosen by the Women in Cell Biology Committee (WICB) as the recipient of the Sandra K. Masur Senior Leadership Award for her mentorship, teaching, leadership, and science.

In his letter of nomination, E. Michael Ostap, Director of the Pennsylvania Muscle Institute, said Holzbaur is overdue for this recognition. She has distinguished herself as a caring, supportive, and effective mentor for both grad students and postdocs, he noted, adding, “She is the most effective advisor/mentor I have interacted with in my 20 years at Penn. Although she mentors all her trainees with equal enthusiasm, she is unparalleled as a role model for women scientists.” “She is a dedicated and outstanding teacher who engages students by revealing the excitement of scientific discovery, and she’s also a world-class scientist who has contributed groundbreaking ideas and scientific discoveries,” Ostap wrote.

Holzbaur’s laboratory studies the dynamics of organelle motility along the cellular cytoskeleton, driven by microtubule- and actin-based motors, and also investigates the cellular mechanisms leading to neurodegeneration.

“For me, it was love at first sight when I first encountered molecular motors in graduate school, where I studied the ATPase pathway of axonemal dynein. As a postdoc, I began studying cytoplasmic dynein, and in my own lab we work on dynein, kinesin, and myosin motors. These motors are essential in most cells in higher eukaryotes, but play particularly critical roles in neurons, where dynein and kinesin motors drive organelle transport over distances of up to a meter along the axons of neurons. Our work on axonal transport led us to an interest in neurodegenerative diseases including ALS and Parkinson’s disease, and this interest in turn led us to focus on autophagy and mitophagy, essential cellular pathways required to maintain neuronal homeostasis. The reason we have been able to tackle so many important questions is the outstanding students and postdocs who have trained in my lab, and their success is what makes me most proud,” said Holzbaur.

“It gives me enormous pride to be recognized by ASCB, but at the same time I am humbled to be included in the company of the outstanding women who have been recognized by WICB awards over the years at the junior, mid-career, and senior level,” Holzbaur added.

Anne Carpenter and Daniela Nicastro Receive WICB Mid-Career Award for Excellence in Research

By Thea Clarke

The 2020 WICB Mid-Career Award is being shared by Anne Carpenter, Institute Scientist and Senior Director of the Imaging Platform, Broad Institute of MIT and Harvard; and Daniela Nicastro, a professor in the Department of Cell Biology at University of Texas Southwestern (UTSW) Medical Center.

Carpenter’s nominator, Jason Swedlow, University of Dundee, stated: “I’ve been continuously impressed by her scientific performance, her commitment to the community, and her support of and development of younger colleagues. Her work, her group, and her scientific persona stand out as a model for scientists everywhere and certainly for the ASCB community of established and developing scientists.”

Carpenter’s research group develops algorithms and data analysis methods for large-scale experiments involving images. The team’s open-source CellProfiler software (which will hit 10,000 citations this year!) is used by thousands of researchers worldwide. Carpenter is a pioneer in assays and algorithms for image-based profiling, the extraction of rich, unbiased information from images, which has enormous potential for contributing to drug discovery and to better understanding of gene function.

“I’m beyond delighted. It is SUPER meaningful to me: for 13 years I’ve run a lab with no pipettes, cells, or microscopes. Even though my lab is focused on creating open-source software for biologists and is entirely computational, I am still very deeply a cell biologist, aiming to help cells tell us about their functions and diseased states through microscopy. As much as I love discussing and advancing the latest tech, I’m at my warm-fuzziest when talking to cell biologists about their favorite phenomena,” said Carpenter.

Her talk at Cell Bio Virtual 2020 will be on Accelerating Drug Discovery through the Power of Cell Morphology.

Sandra Schmid, now at Chan-Zuckerberg Biohub, who nominated Daniela Nicastro, pointed out Nicastro’s notable scientific accomplishments at the technological forefront of EM and cryo-EM tomography, her outstanding mentorship of students and postdocs, and her leadership as the central player in the introduction of cryo-EM to the UTSW campus.

Nicastro’s lab studies the three-dimensional structure of macromolecular complexes, organelles, and cells using a combination of cutting-edge methods, including in situ molecular imaging with cryo-electron tomography. Special areas of interest include the structure of cytoskeletal assemblies (like cilia and basal bodies) and molecular motors, host-pathogen interactions, as well as the development of cryo-EM...
Prachee Avasthi Honored with WICB Junior Award for Excellence in Research

By Thea Clarke

Prachee Avasthi’s nominator, Wallace Marshall, University of California, San Francisco, called her a star. He wrote: “She has proven a willingness to use any approach necessary to pursue the most important questions, and a complete fearlessness to go against prevailing dogma. At the same time, she has proven a highly effective mentor for her trainees, and a role model for both junior and senior investigators alike. In my opinion, she perfectly represents the qualities that the ASCB WICB Junior Award for Excellence in Research seeks to encourage.”

Avasthi is an associate professor of Biochemistry and Cell Biology at Geisel School of Medicine at Dartmouth College, though she noted that the work recognized by this award was done at the University of Kansas Medical Center, where she was until recently.

Using a unicellular green alga as a model system, her lab uses chemical biology, biochemistry, genetics, and quantitative live cell imaging to uncover novel mechanisms regulating assembly of the cilium. That work led to investigation of the intersection of the microtubule and actin cytoskeleton, as well as fundamental actin dynamics and function.

She stays busy outside the lab as well. An advocate for improved publication practices, she serves on the boards of directors for ASAPbio and eLife. She also founded New PI Slack, the online peer-mentoring community for junior faculty, and is on the steering committee of Rescuing Biomedical Research.

Avasthi said, “I am quite stunned to receive this award! The past winners are leaders in their fields such that none of the previous selections surprised me. I’m routinely inspired by the creativity and brilliance of others, so it means a lot to me that the colleagues I so respect see the beauty that I see in the science we’re uncovering. I am incredibly honored and am thrilled for my lab members, whose hard work is being recognized by this award. They deserve this.”

Her talk at Cell Bio Virtual 2020 will be on Cytoskeletal Diversity, Flexibility, and Functions.
Michael N. Trinh Named 2020 Merton Bernfield Awardee

By Thea Clarke

Michael N. Trinh, an MD/PhD student at the University of Texas (UT) Southwestern Medical Center at Dallas, has been selected as the recipient of the Merton Bernfield Memorial Award. In the lab of Michael S. Brown and Joseph L. Goldstein, Trinh studies cellular cholesterol homeostasis using genetics and cell biology.

Trinh enrolled as a biology major at the University of Texas at Dallas and volunteered to work 30 hours a week in that lab during his sophomore year. Brown and Goldstein, who wrote his letter of support, said they were initially skeptical that he could work that many hours given that he was in an accelerated three-year program. Trinh not only managed it, but excelled, they noted. Once he graduated, Trinh entered the MD/PhD program at UT Southwestern.

In the Brown/Goldstein lab, Trinh and postdoc Feiran Lu have been researching the way cholesterol moves from the lysosome, the digestive organelle, to the plasma membrane where it serves a structural role.

Children with a neurological disease called Niemann-Pick C have a block in the exit of cholesterol from lysosomes. This deficit causes cholesterol to accumulate in lysosomes of cells throughout the body and the children die, primarily from neurological complications. Other labs had traced the genetic defect to a protein called NPC1 that resides in the envelope of the lysosome. Trinh and Lu decided to figure out how NPC1 works.

Brown and Goldstein noted that in the first year of his thesis work, Trinh designed a screen using the CRISPR/Cas9 DNA-editing system to search for genes required for the intracellular transport of LDL-derived cholesterol from the lysosome to the endoplasmic reticulum (ER). He discovered that this transport requires a gene encoding an enzyme that makes phosphatidylserine. When the gene is deleted, LDL-cholesterol leaves the lysosome and reaches the plasma membrane but cannot move from the plasma membrane to the ER. This is the first demonstration that intracellular transport of one lipid (cholesterol) requires another (phosphatidylserine)—a discovery with implications for membrane biology and cholesterol metabolism in animal cells.

The title of Trinh’s talk at Cell Bio Virtual 2020 is “Last Step in the Path of LDL Cholesterol from Lysosome to Plasma Membrane to ER Is Governed by Phosphatidylserine.”
James Olzmann, an associate professor at the University of California, Berkeley, and investigator at the Chan Zuckerberg Biohub, will give a talk on the challenging scientific frontier of “Lipid Droplet Proteome Dynamics and Regulation” at Cell Bio Virtual 2020 as this year’s winner of the Günter Blobel Early Career Award, previously the Early Career Life Scientist Award.

For much of his career, Olzmann studied aspects of protein quality control. But it was after he discovered a connection between endoplasmic reticulum protein quality control and lipid droplets while doing his postdoc in biology at Stanford University that he was “hooked” and ever since has remained fascinated by the biology of lipid droplets and the mechanisms cells employ to maintain cellular lipid homeostasis.

In his letter of support, Stanford professor Ron Kopito wrote that “James’s lab has defined new pathways that regulate lipotoxic cell death in cancer,” advancing scientific understanding of the fundamental mechanisms that regulate the composition of lipid droplet proteomes. “Beyond his research, James is also a leader in promoting diversity, equity, and inclusion (DEI) in STEM,” Kopito wrote.

“Recently, we made an exciting discovery of a system that regenerates reduced Coenzyme Q10 (ubiquinol) outside of the mitochondria, providing a potent lipophilic antioxidant that suppresses oxidative lipid damage and ferroptosis,” Olzmann says. “For me, one of the best parts about running a lab is sharing the joy of discovery with the wonderful students and trainees in my lab.”

A University of Michigan biology undergrad, Olzmann’s deeper enthusiasm for biology began when he was a neuroscience graduate student at Emory University and received a travel award to attend the ASCB annual meeting. “This was a formative experience that opened my eyes to the breadth and wonder of cell biology,” he says. “ASCB has always felt like home,” so “to receive this recognition from ASCB and the cell biology community is a true honor.”

A member of the ASCB Minorities Affairs Committee, Olzmann says, “Just as in our research, we must be creative and innovative in our approaches to improve DEI in STEM and beyond.” The death of George Floyd and many other recent atrocities have galvanized “a call to action for us all to participate in change at all levels.”
2020 Porter Prizes for Research Excellence

By Thea Clarke

ASCB’s Award Selection Committee has chosen Matthew Akamatsu, the Arnold O. Beckman Postdoctoral Fellow at the University of California, Berkeley; Gwendolyn Beacham, a PhD candidate at Cornell University; and Kate Cavanaugh, a PhD candidate from University of Chicago, as the 2020 winners of the Porter Prizes for Research Excellence. Akamatsu will receive $4,000, and Cavanaugh and Beacham will each receive $2,000. Each winner will give a talk in a Minisymposium relevant to her or his research. Also recognized as Honorable Mentions are Jui-Hsia Weng, a postdoctoral researcher in the Department of Systems Biology at Harvard Medical School; and Hawa Racine, a postdoctoral research fellow in The Cell and Developmental Biology Center at the National Heart, Lung, and Blood Institute, National Institutes of Health.

Akamatsu’s research combines mathematical modeling, human stem cell genome-editing, and fluorescence microscopy to study how actin produces force to function in cellular membrane trafficking processes. He is currently working on two projects: 1) Understanding the relationship between actin cytoskeletal architecture and mechanical function at sites of mammalian clathrin-mediated endocytosis by integrating agent-based mathematical modeling with cryo-electron tomography in collaboration with labmate Daniel Serwas; and 2) Understanding how SARS-CoV-2 nonstructural proteins manipulate cellular organelle and membrane trafficking processes to make double-membrane replication compartments, in collaboration with members of the Drubin/Barnes, Hurley, Betzig, and Upadhyayula labs (and soon others).

“I am so pleased and honored to have been chosen to receive the Keith Porter award for postdocs this year. Keith Porter’s fearless exploratory spirit is an inspiration to all of us who take on exploratory projects aimed at understanding intracellular architecture and function,” said Akamatsu. His talk at Cell Bio Virtual 2020 will be on “Mechanisms of actin force production in clathrin-mediated endocytosis revealed by integrating mathematical modeling with in situ cryo-electron tomography.”

Beacham studies how clathrin-mediated endocytosis relies on adaptor proteins to select the cargo to be internalized and assemble components of the vesicle coat. In many instances, this is accomplished by the Adaptor Protein 2 (AP2). She is interested in learning how AP2 is regulated to ensure that endocytosis occurs with precision.

Beacham has taken on several efforts aimed at improving the diversity and climate of academia. She has held multiple leadership roles in Cornell’s Graduate Women in Science and has worked with other student groups and diversity councils across campus to initiate
programming geared toward community building and allyship.

In his letter of support, Gunther Hollopeter from Cornell stated: “Gwen is one of those rare students that can do it all, with excellence and grace that inspires all those around her to elevate their own level of play. I am confident she will be a future scientific leader that ACSB will be proud of.”

Beacham’s talk at Cell Bio Virtual 2020 is titled “C. elegans reveal a connection between the tissue organizers MLT-4/inversin and the clathrin adaptor AP2.”

Cavanaugh is trying to understand how spatiotemporal RhoA regulates cell–cell junction mechanics. She uses optogenetics and cell culture in a bottom-up approach to understand (and recreate) the morphogenetic phenomena we typically see in embryogenesis.

She spent her undergraduate years at Northwestern University, and then was awarded an Erasmus Mundus Fellowship to obtain a master’s in comparative vertebrate morphology under the Erasmus Mundus International Program EUCOMOR.

Cavanaugh is the recipient of many honors and awards, including an HHMI Gilliam Fellowship (2018–present) and a Ford Foundation Predoctoral Fellowship from the National Academy of Sciences (2017–2018).

“I can’t even begin to say how humbled and honored I am for this award! I want to thank everyone in my lab, especially Margaret [Gardel], for giving me incredible support and freedom with my project. My PhD at UChicago has been a profound educational experience and honestly it has been a blast,” said Cavanaugh.

The tentative title of her talk at Cell Bio Virtual 2020 is “Heterogeneous regions of RhoA elicit an asymmetric junctional mechanoresponse.”

MariaElena Zavala to Present 2020 Mentoring Keynote

By Mary Spiro

MariaElena Zavala, professor of biology at California State University, Northridge, has been invited to present the 2020 Mentoring Keynote at Cell Bio Virtual 2020–An Online ASCB|EMBO Meeting. The title of her talk will be “Changing the Face of Science.” The talk will premiere on December 2 from 11:45–12:30 ET.

Zavala said she was very excited to be asked to present the ASCB Mentoring Keynote.

“Very excited actually, I was floored!” she said. “I learned that I was being nominated after someone asked me for some information about me. I had to ask why this was needed. Having served on the selection committee in the past I knew that the competition for this honor is fierce. In reality, I was honored to learn that I had been nominated and being selected was icing on the cake.”

As a mentor, Zavala said a goal of hers is to try to determine what types of interventions or opportunities are effective in broadening participation in science careers. Mentors have been critical to her success, she added.

“My path to the degree and beyond has been smoothed and paved by mentors,” Zavala said. “I aspire to serve science and the community of marginalized and minoritized people by preparing them to use their
creativity and problem-solving skills to address the ‘hard’ questions in science. I have mentored hundreds of students, and it is a thrill when our former students achieve their professional goals!

In her research as a plant biologist, Zavala is looking for ways to produce plants with improved nutritional qualities and produce plants that require fewer inputs.

“I use plants to probe basic questions in plant development,” Zavala said. “My contributions in that field of research include the first localization of a plant hormone in situ. I have worked to develop systems to improve plant nutrition and plant productivity.”

Zavala earned an AB from Pomona College and a PhD from the University of California, Berkeley, and completed her postdoctoral training at Indiana University and Yale University.

She recently received the Presidential Award for Excellence in Science, Mathematics, and Engineering Mentoring and is a Fellow of ASCB, the American Association for the Advancement of Science, and the American Society of Plant Biologists. She has also been co-lead PI for the National Science Foundation Hispanic Serving Institution STEM Resource Hub, as well as co-PI for a National Institutes of Health Innovative Programs to Enhance Research Training grant.

“I am the first Chicana [American of Mexican descent] to have earned a PhD in my field from UC Berkeley and someone told me that I am the first Chicana PhD in my field nationally,” Zavala noted. “I am the first member of my family to earn an undergraduate degree and a PhD. I was the first female president of Society for Advancement of Chicanos/Hispanics and Native Americans in Science.”

In her free time, Zavala said she enjoys cooking and reading murder mysteries.

Sylvia Hurtado Invited to Present 2020 Diversity Keynote

By Mary Spiro

“Inclusive Science and Institutional Change” will be the title of the Diversity Keynote presented by invited speaker Sylvia Hurtado for Cell Bio Virtual 2020—An Online ASCB|EMBO Meeting. Hurtado is a professor in the Graduate School of Education and Information Studies at the University of California, Los Angeles (UCLA).

Hurtado’s research centers on the impact that student-centered interventions for underrepresented groups has, not only on the students, but on the institution itself.

“What is the departmental impact of culturally aware mentor training for faculty in the biomedical sciences?” Hurtado wondered. “What is the process of institutional transformation in improving STEM education at the undergraduate and graduate level?”

Hurtado was a professor of education and the director of the Higher Education Research Institute at UCLA for over a decade.

“I have written extensively on student development and college experiences, campus racial climate, STEM education, and diversity in higher education,” Hurtado said. “My current national projects focus on STEM education interventions and diversification of the scientific workforce, institutional transformation, and the impact of culturally aware mentor training for faculty in the biomedical sciences.”

Hurtado grew up in San Antonio, TX, and, she said, “Like many Latinas, I was a first generation college student.” She earned an AB from Princeton University, a Master’s in Education from Harvard University, and her PhD from UCLA.

The Diversity Keynote will premiere on December 3 from 11:45 am–12:30 pm ET at Cell Bio Virtual 2020.
Emerging Voices
Mental Health Resources for Trainees Are More Important Than Ever

By Tim Fessenden

Over the years, my siblings and close friends have sought mental health resources like therapy, psychoanalysis, or psychiatry, so I understood their benefits. When I was a PhD student I even went to therapy, but my counselor and I decided I could do without it. Since I started my postdoc, my stress manifested in new ways, but I managed it well with my usual coping strategies and support. That changed when I got a call one bright December day that my father had died unexpectedly.

It didn’t take long for me to decide I wanted to see a therapist. Thanks to the strong support from my boyfriend, many close friends, and my siblings I was weathering the process as well as one can. But getting professional help seemed like a no-brainer. Even if I felt OK one day, I didn’t trust that I’d be OK the next. I couldn’t see around the corner of this crisis and the emotional trauma it brought. It was too thick and too broad a landscape for me to navigate without help.

I called a number for mental health and counseling at my institution (the Massachusetts Institute of Technology). A triage counselor noted my therapy needs and verified my insurance. She asked what times and locations I preferred, and then searched for an open appointment with a therapist that accepted my insurance. She also informed me that my coverage allowed 12 sessions with no copay, which was a pleasant surprise. The therapist who agreed to see me had very few openings, in part because this all happened in December—the holidays are especially busy for therapists.

I didn’t like interrupting my work day to trot off to therapy. Taking a long break once a week meant I couldn’t run experiments or mentor my student during that time. But I made the sacrifice because my priority was getting the help I needed. Prioritizing mental health over lab work is tough for researchers, especially postdocs. I would never have accepted that kind of weekly disruption before my dad’s passing. But as a former mentor of mine used to say: “You are the most valuable reagent in the lab.” That is truer now than ever before. My first few sessions were on Tuesdays at 2:00 pm.

The author and his father enjoying one of their favorite shared activities. Photo by Leah Fessenden
The afternoon break turned out to be less disruptive than I had feared, since I had just come back to the lab and was working short days. My PI and lab mates had encouraged me to take all the time I needed. Had she asked, I would have told my PI where I was on Tuesday afternoons, but she didn’t need to know my specific daily or weekly schedule, so I didn’t seek her approval beforehand. Coordinating my lab tasks with lab mates thankfully wasn’t an issue since my work is largely independent. But had I needed to, I would have simply let lab mates know that I had an appointment on Tuesday afternoons and would be out of the lab for a bit.

The weeks went by and the benefits of therapy accrued, helping me in large and small ways as I grieved. In mid-March, my therapist followed guidelines and asked all her clients to transition to remote sessions. For me this was easy and sensible, but still a little disappointing. Therapists are professional empaths, among many other things, and doing away with the physical presence and exchange with her was a blow. But since almost all my social interactions became remote, therapy via video felt less odd. Thankfully I didn’t have to move out of state for the lockdown so I could stay with the same therapist during the transition to remote everything without any complications.1

A few weeks into lockdown, I asked my therapist if we had reached the limit of my 12 sessions without a copay. She replied with the good news that my insurance provider had waived all copays for mental health costs due to the pandemic. I had felt that, if needed, I would be OK foregoing therapy at that point. Even with all the disruption of the lockdown I was doing much better emotionally than just after my father’s passing. But in the end I’ve been much happier continuing therapy because it has allowed me to explore areas other than my grief and the memory of my father.

I am fortunate to have affordable health insurance and the support from my lab and my department. I’m sharing my story with humility and the understanding that not everyone enjoys the privileges I do, and the knowledge that everyone weathers life’s tragedies in their own way. Most importantly, I’m writing about my experience because I believe institutions should be providing mental health resources to their research staff and telehealth is one way to do so.

Since the pandemic began, the number of people reporting anxiety or depression has steadily increased.2 Not being able to continue my therapy by video chat would have ended my therapy too early and contributed to an even greater loss of my well-being, not to mention productivity, than I already experienced due to the pandemic. But as I’ve acclimated to almost all of my social interactions being online, so have I adjusted to the new norm of video calls with my therapist.

Therapy has helped me use my time in lockdown differently, given me some much needed mental space to clear my head sometimes, or at other times allowed me to delve into memories of my father, and a deeper consideration of my childhood with him. It is not lost on me that all of these benefits are the result of a policy change made by my insurance provider. The provider made the right decision to waive copays, so I didn’t have to choose cost over my mental health needs. Telehealth may be one of the few benefits we can all enjoy in a post-COVID-19 world, but it should be made available to all who need it.3

References

About the Author
Tim Fessenden is a postdoctoral fellow at the Massachusetts Institute of Technology.
In what has been viewed by many in the scientific community as just another attack on science and foreign students, the Trump Administration published draft regulations (https://bit.ly/2Uf98n2) that, if enacted, would require international students in the United States to reapply for visas every two or four years. Currently, F (student) and J (exchange) visas are issued for what is referred to as “duration of status” for the length of the visa holder’s academic program. More than 32,000 individuals and organizations submitted comments (https://www.federalregister.gov/d/2020-20845) about the proposed policy change. The ASCB’s comments strongly opposed the proposed policy change.

In its comments (https://bit.ly/3pfAXtw) submitted in response to the Department of Homeland Security’s Notice of Proposed Rulemaking (NPRM), the ASCB said that “Instead of doing anything to improve the scientific visa system, which is already broken, it adds to the problem and makes it worse. It could even end America’s dominance as the world’s biomedical research leader.”

Students from all over the world come to the United States to study, because of the superior academic institutions, world-renowned scientists, and working environment critical to the scientific process that can be found in the United States, something recognized in the NPRM itself.

In a survey of ASCB members in early 2020, 90.77% of those who replied said that their research laboratories have, at some time, included trainees or other young scientists from other countries. Unfortunately, almost 40% of survey respondents said that international members of their labs have decided not to attend a scientific meeting, which are critical to the scientific process, in another country out of concerns they would not be able return to the United States because of U.S. immigration and visa roadblocks. Twenty percent said that they have had members of their lab leave to join labs in other countries because of the difficulty in maintaining their U.S. visa status.

As the ASCB comments said, “Requiring regular interaction with a bureaucratic system that is already a burden to these young scientists may be more than they are willing to put up with. It sends a very strong signal that, in reality, they are not wanted in the United States.”

The U.S. government rulemaking process requires agencies proposing rules to review all the comments submitted in response to each notice. With over 32,000 comments to review, a final rule may take weeks or months to enact.
Career Navigator

Mental Health: The Paradox of Academia’s Neglect of Our Greatest Tool

By Roo Steinberg and Wendy Ingram

In the world of elite athletics, the fitness of an athlete’s body is preserved at all cost. Athletes strengthen and protect their muscles, ligaments, tendons, and bones through rigorous training and strict diet, warm up and cool down stretches, massage, acupuncture, and physical therapy and are under the watchful eyes of staff physicians. If the slightest hint of injury is detected, the injured limb is taped, wrapped, iced, and rested to prevent further injury and help the wounds heal. As injury is par for the course in athletic endeavors, and is acknowledged as a foregone conclusion under such physically demanding circumstances, injury prevention and expedient treatment is of the utmost importance and is addressed accordingly.

It is curious then, if the physical fitness of an athlete can be likened to the mental fitness of an academic, that academia does not take the same care in the prevention and treatment of the mental health challenges experienced by its students, faculty, and staff. As academics, our minds are our greatest asset, a tool honed over years of intellectual pursuit and sharpened by countless hours in the theoretic and experimental trenches. However, just like an athlete’s body experiences wear, tear, and outright injury in the pursuit of their goals, so too academics suffer immense strain on their mental fitness and overall mental health....

[Just like an athlete’s body experiences wear, tear, and outright injury in the pursuit of their goals, so too academics suffer immense strain on their mental fitness and overall mental health....]
Career Navigator

work long hours and conduct grueling experiments in the midst of these intense conditions, suffer adverse consequences to their mental health. In academia, mental health challenges, discrimination, harassment, and bullying have long gone unchecked and unaddressed, and recent studies have found that nearly 50% of graduate students experience depression and/or anxiety, with the COVID-19 pandemic exacerbating these issues further.

To rectify the paradoxical failure of academia to address the mental health needs of its community, we call for the following five domains of mental health excellence to be considered:

**Peer Networks**

Peer networks are a fantastic way to support the wellbeing of all members of the academic community. Peer networks that focus on mental health can be exclusive or inclusive of faculty, postdocs, students, or staff and can be cross-sectional and cross-departmental, depending on the size of a given department. These peer networks should facilitate ongoing peer-to-peer advice through mentoring, newsletters, and peer-recommended mental health resources and content.

Yearly training organized by peer networks can help prepare peers to identify, support, and refer those who are struggling. Some good examples of training include training in Question, Persuade, Refer (QPR); Active Listening; Psychological First Aid (www.coursera.org/learn/psychological-first-aid); and Mental Health First Aid. Events held by peer networks can be used to encourage “real talk” or discussions of tough topics in order to educate and destigmatize mental health struggles and help-seeking. In addition, peer networks can utilize alternative or restorative justice methods of conflict resolution for non–Title IX related incidents.

**Mental Health Literacy**

Instituting regular educational programming on mental health issues and illnesses is another key avenue to ensure your academic community maintains an appropriate level of mental health literacy. This programming should be given to trainees, faculty, and staff as part of the onboarding process and should be culturally competent and representative of the community’s diverse intersectional experiences.

Conducting anonymous surveys of the community’s mental health literacy can aid in obtaining a clear understanding of where mental health literacy currently stands. Regular assessment of knowledge of emergent and non-emergent services, utilization of mental health literacy resources, and community preferences will help to prioritize future education programs and events. This will vastly improve the ability of members of your community to accurately and thoughtfully recognize, speak about, and respond to mental health struggles of their own and their colleagues.

**Skills Workshops**

Another great way to engage your community in mental health initiatives, while helping to prepare them for the challenges of academia, is to offer skills training workshops focused on mental health. These workshops will not only help individuals with their own mental health struggles but can train students, faculty, and staff to support members of their
community through active listening and allyship and by recognizing signs of struggle and referring them to the appropriate resources. Workshops can include skills training for self-management and growth through self-compassion, meditation, active inclusion, and more.

By having skills workshops and conducting yearly assessments of them, you can measure the long- and short-term impact they have on your community and evaluate how they affect outcomes of interest related to student, faculty, and staff mental health, promotion, and success. These workshops are most effective at developing and solidifying these useful skills by interactive programs that include live practice sessions.

**Fighting Against Stigma**

Stigma against mental health struggles is a major barrier to seeking help for those who desperately need it. Hosting yearly events to facilitate opportunities for your community to hear from those with lived experiences of mental health struggles can help fight against stigma and break down the barriers to seeking help. Conducting regular anonymous assessments of the self-stigma and social stigma associated with mental health issues within your community can be a real eye opener as well. These surveys will help you assess the climate of your academic community and determine if the culture of your institution is contributing to suffering and stigma.

Facilitating nonjudgmental community discussions can also help your community to reflect on and challenge stereotypes and stigmas they may hold. Regular visible communication on mental health initiatives and programs will help normalize the incidence of mental health struggles, promote early identification, and encourage help-seeking behavior. In addition, having clear and publicly available policies and procedures for mental health accommodations for all community members will help minimize barriers to access.

**Departmental Committees**

A department can facilitate all of the above by creating a standing committee dedicated to mental health, publicly recognizing it as a priority that is critical to academic success. No one knows the inner workings or demands of a discipline or department like the members of that community. By instituting a departmental committee focused on mental health with representatives including students, postdocs, staff, and faculty, a department will ensure that appropriate priorities are determined and funds are allocated each year to support mental health initiatives.

These committees can work with other experts in mental health such as campus psychological services to conduct yearly evaluations of departmental mental health issues and efforts, gaining important insights into the prevalence, literacy, barriers to seeking care, and stigma against mental health challenges among their community members. To encourage honest feedback, these evaluations are typically best conducted anonymously. If a department is too small to ensure anonymity and protect privacy, then we recommend partnering with other related departments, which will also reduce and share the burden on faculty, students, and staff who serve on this committee.

Yearly evaluation will provide the committee a clearer understanding of the needs of its community and enable it to prioritize goals and initiatives, determine what has been helpful, and decide what next steps should be implemented to improve mental health. This committee could also advocate establishing effective and compassionate protocols for mental health issues such as reporting and responding to mental health policy violations and establishing a postvention plan in the event that a suicide occurs. Far too many communities are ill prepared to respond when crisis strikes, which can lead to lasting damage to survivors. Postvention plans, for example, should include compassionate communication, short- and long-term community support strategies, and
ongoing monitoring of survivor wellbeing. Taking the time prior to a loss will radically improve the often catastrophic impact of losing a community member to suicide and mental illness.

Together, these five domains of excellence will begin to raise academia to match the Olympic standards of our elite athletes. When the mental health of the academic community is properly protected and cared for, who knows what intellectual summit we will conquer next!

Far too many communities are ill prepared to respond when crisis strikes....

References

Resources
There are many organizations and resources that can help you address these five domains. Some examples include:

We formed Dragonfly to deal with these issues and welcome you to use our resources. For example, to learn more about starting your own peer network, you can view an introductory workshop for free here: https://youtu.be/ow6_-lOctjg.

An example of a basic mental health literacy seminar recently delivered to Berkeley Labs can be found for free here: https://youtu.be/_7bKwwKK9eY?t=651.

Dragonfly Mental Health offers a variety of skills workshops and would be happy to work with you to deliver one on your campus. Please inquire here: https://forms.gle/NjM9KJhB6LgVGg1H6.

An example of an anti-stigma campaign at University of California, Berkeley, which involved interviewing faculty about their own lived experience, can be found here: https://youtu.be/NMR3Ar9qvGI.

Dragonfly Mental Health is currently working on a postvention plan recommendation for academic institutions that will be posted for free on our website in the coming year. It also offers consulting services to departments wishing to create their own departmental committee: www.dragonflymentalhealth.com.

You can learn more about cultivating excellent mental health in academia at Cell Bio Virtual 2020 this December in a workshop hosted by COMPASS and Dragonfly Mental Health on Friday, December 4, from 1:00–2:30 pm ET.

About the Authors
Roo Steinberg and Wendy Ingram are founders of Dragonfly Mental Health, a nonprofit organization dedicated to cultivating excellent mental health among academics worldwide (www.dragonflymentalhealth.com).
DEAR LABBY

I am going to present my undergraduate research at this year’s ASCB|EMBO meeting, Cell Bio Virtual 2020. I have never participated in a scientific conference, although I have participated in science fairs and a research day at my university. It is my turn to be one of the members of my lab to attend and I was really looking forward to this opportunity. This will be my only chance to attend a national conference as an undergraduate. In the past my research mentor invited two or three students to attend the conference with her. Last year when they returned home from the ASCB|EMBO meeting in Washington, they told me what they did and how great the whole meeting was, although it was both nerve wracking and exciting to present at the undergraduate poster competition. They told me it was so special when one of the authors of a paper that we read in class visited their poster in the exhibit hall. They added that the undergraduate poster competition prepared them for the questions that they were asked when they were on the main floor. This special session also gave them the opportunity to meet and interact with peers and senior scientists and to network. This year I will be presenting my research at the meeting but I am concerned that I won’t get the same opportunities to meet other attendees and/or to discuss my poster with other attendees because the meeting is virtual.

I attend a small university that has fewer students than there would have been attendees at this meeting, and I was also looking forward to visiting a big city, as my university is located in a rural town. Can you help me figure out how to get the most of out of this meeting?

—Virtually Lost

DEAR VIRTUALLY LOST: Welcome to the ASCB|EMBO annual meeting. Congratulations are in order, because not many undergraduates have enough data to present at a national/international conference like this. Labby understands your dilemma, because this virtual format is different for all of us. The pandemic is dangerous and required ASCB and EMBO to change the format of the meeting, while attempting to meet the expectations and needs of the attendees. The most effective way to get the most out of this conference is to plan out your activities for each day. As soon as you can, go on the ASCB website and look at the meeting program and read what the meeting has to offer each day. Then read the abstracts of posters in your field. There will be tools available on the website to help you plan your daily agenda. Labby usually attends the major Symposium talks to learn about other fields, and these presentation are often memorable! There won’t be a real exhibit hall this year, but there will be plenty of opportunities to hear attendees discuss their posters and to “visit” exhibitors. If technical workshops are available, these provide a valuable introduction to the newest methods used to unravel the mysteries of the cell!

Ordinarily, you might have met other attendees by happenstance (at lunch, social mixer, standing in line, etc.), but in this virtual world you will have to be more intentional and the meeting program will help you do that too! While this virtual experience will be different from a face-to-face meeting, the wealth of the sessions and topics covered will most certainly give you the opportunity to meet other scientists, expand your cell biology horizons, and share your research. Labby hopes this meeting is the first of many you will attend as you build your career.

—Labby
About three years ago, former ASCB president (1995) and Professor of Biology Emerita at Washington University in St. Louis (WUSTL) Ursula Goodenough closed down her lab where she had built a career studying the life cycle of *Chlamydomonas reinhardtii*. Today Goodenough, now living on Martha’s Vineyard, hasn’t lost her curiosity about the wonders of nature or her ability to contribute valuable research.

“Somebody told me that when you retire, you shouldn’t really plan anything for the first year and wait and see what happens,” Goodenough chuckled. So, she says, she spent time fixing up her house, joining a choir, doing hospice volunteer work, hanging out with grandchildren, and other “retiree” kinds of things. But it wasn’t enough. As a leader in the Religious Naturalist movement (http://religious-naturalist-association.org), Goodenough found that an immersion in science and nature is also essential.

“Lucky me, I had a lot of data stored on the computer that I brought here. So I started opening it up and looking around. I thought that’d be a lot of fun,” she said. “Turns out research is more in my DNA than I might have anticipated.”

The “fun” data came from her last federally funded project at WUSTL—a grant from the Department of Energy (DOE) to explore the possible use of algae to produce triacylglycerols, precursors of biofuels.

“We and others found out that they make a lot of the right kind of organic compounds, but the problem with using algae this way is that there are just not enough of them, outdoor cultures get contaminated, and harvesting is difficult,” Goodenough said.

During the latter part of that project, she said, “We also learned that lichens made these lipids. The woman that I worked with, Robyn Roth, proceeded with a lot of lichen electron microscopy, and they were beautiful.”

It is these lichen image files that have sparked Goodenough’s current interest. Lichens are composite
organisms made up of fungi, bacteria, and either an alga or cyanobacteria, living symbiotically. As a cell biologist, Goodenough was intrigued. “Turns out that lichen ultrastructure is terribly difficult to preserve with classic imaging methods, but lucky for us the technique that we used for the DOE project—quick-freeze deep-etch electron microscopy—preserved them perfectly. It allowed us to see the fungi and the algae and bacteria interacting together up close. It’s very exciting.”

Goodenough doesn’t need any funding to support these investigations since the data have already been collected. “I am analyzing the images, reading relevant literature, and writing research papers,” Goodenough said. “It’s kind of like an archaeologist finding a new pile of bones.” The resultant scientific contributions are now being published in *Algal Research*.

Goodenough’s connections to ASCB reach back to its beginnings. Society founder Keith Porter was her graduate thesis advisor. She values the “steady drumbeat in the society to retain the basic research element,” and hopes that because Cell Bio Virtual 2020 is online she can attend parts of the annual meeting.

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**in memoriam**

**Zena Werb: Cell Biologist, Mentor, Friend**

*By Andrew J. Ewald and Mikala Egebald*

Zena Werb passed away suddenly, on June 16, 2020, leaving behind a profound legacy across several subfields of cell biology. She considered ASCB her scientific home: She was a member (from 1976 to her passing), past president (2005), and E.B. Wilson medalist (2007). Zena was professor in the Department of Anatomy at the University of California, San Francisco (UCSF) for over four decades and made seminal contributions to the understanding of proteolysis and innate immunity in developmental biology and cancer research. She was brilliant, with a deep understanding of science, courageous in her choice of scientific problems, visionary in her ability to redefine the possible, and convinced that it is an obligation to make the scientific enterprise more just and inclusive. Our postdoctoral training with her ended more than 10 years ago, but like so many other of her trainees, we had kept in contact with her. We miss her dearly. We remember her with a knowing—and sometimes teasing—smile on her face, informed from the challenges of this world, yet optimistic, and always excited by good science and new ideas.

**Scientific Career**

Zena earned her BSc in Biochemistry and Physiology from the University of Toronto and her PhD in Cell Biology from The Rockefeller University, studying with Zanvil Cohn. She then conducted postdoctoral research at the Strangeways Research Laboratory, Cambridge, England. She began her independent
career in 1976 in the Department of Radiobiology and Radiology at UCSF before transferring to the Department of Anatomy in 1979. She rose quickly through the ranks, earning promotion to associate professor in 1980 and professor in 1983. She was Vice-Chair of the Department of Anatomy from 1999 to 2017, Director of the T32 Postdoctoral Training Program in Molecular and Cellular Basis of Cancer from 2004–2020, Co-Leader of the Cancer, Immunity, and Microenvironment Program (2011–2016), and Associate Director for Basic Science of the Helen Diller Family Comprehensive Cancer Center from 2016–2020. She was highly prolific, with >350 primary research articles and >100 review articles. Collectively, this body of work is among the most cited in the life sciences, with Google Scholar crediting more than 135,000 citations and an h-index of 171 to her.

Recognition and Awards
Among Zena’s numerous awards are being named a fellow of the John Simon Guggenheim Foundation, the American Association for the Advancement of Science, the Institute of Medicine (National Academy of Medicine), the National Academy of Sciences, the American Academy of Arts and Sciences, the American Association for Cancer Research, and the ASCB. Her named lectureships include the Charlotte Friend Lectureship and the UCSF Faculty Research Lecture Award. In addition, she received an honorary doctorate from the University of Copenhagen, the Alexander von Humboldt Foundation Prize, the E.B. Wilson Medal of the ASCB, the Women in Cell Biology Senior Award from the ASCB, and the UCSF Lifetime Achievement in Mentoring Award. Zena was not one to rest on her laurels or focus much on them. She took the greatest satisfaction from two areas: establishing new concepts in biology and mentoring the next generation of researchers.

Key Scientific Concepts
Zena is best known for her contributions to revealing the molecular mechanisms by which proteolysis regulates cellular signaling and for uncovering the diverse roles played by proteolysis during development and in diverse disease states. When she began studying matrix metalloproteinases (MMPs) in the 1970s, proteolysis was considered a purely destructive process—a mechanism to eliminate proteins and clear extracellular space. However, she anticipated a broader role for proteolysis, hypothesizing that proteolysis could act as a mechanism of post-translational modification, capable of changing a protein’s function. She had to develop and refine many of the core techniques in the field in order to test this hypothesis. In a series of elegant papers, she demonstrated that MMP cleavage can remove signaling motifs, reveal cryptic signaling motifs, liberate signals from the cell surface or extracellular matrix (ECM), and change the diffusion properties of the protein.

The concept that emerged from these discoveries was that proteolysis regulated a cell’s access to information about its extracellular microenvironment and that this role is critical to the development of most organs. Conversely, dysregulation of proteolytic function underlies the mechanisms of diverse diseases, including diabetes, congenital bone malformations, pancreatitis, and cancer. This work emerged in the context of a multi-decade collaboration with her close friend, Mina Bissell, of the Lawrence Berkeley National Laboratory. One major highlight from this collaboration was the demonstration that transgenic overexpression of MMP3 was sufficient to induce carcinomas in mice.

Zena remained a visionary pioneer throughout her career, fearlessly reinventing herself every few years to work on new technical challenges and to establish new concepts in the field. Over the past 10
years, her focus was chiefly on cancer metastasis, with fundamental contributions to the understanding of how differentiation programs drive invasion and dissemination, the relationship between cancer cells and stem cells, the role of the ECM and immune microenvironment in promoting metastasis, and the application of single cell sequencing to patient-derived xenograft cancer models.

**Mentor and Friend**

Zena was a demanding, yet supportive mentor who saw the unique capabilities of each of her trainees and worked to help them achieve their individual goals. She was in particular a pioneering advocate for women in science, whether for her trainees, for her colleagues at UCSF, or for the wider scientific community through her work with the ASCB and other societies. She vehemently believed that science is hard and needs the best minds, and that we could not predict where we would find the people capable of driving the next paradigm shift. She was a caring person and gracious hostess, inviting us to her home for lovely—homemade—feasts, taking trainees to the symphony and opera, and baking homemade treats for the lab for each of the Jewish holidays. In virtual memorial services and individual conversations, one memory came up again and again as shared by so many of her mentees and friends: that she truly and individually cared for each of us as persons, e.g., asking about our families in a non-intrusive manner each time we met. These personal relationships served as the foundation on which she would push us to achieve more professionally than we thought ourselves capable of doing. What we loved about her was that you knew you would get the straight truth from Zena; if the idea was bad, she would say so. But, if she thought it was a good idea, worth serious investigation, you knew you were on to something, and might even be able to build your career around it.

**The ASCB**

Zena attended numerous meetings and gave hundreds of talks over four decades; her list of keynote lectures alone runs to pages, single spaced. But, reflective of her commitment to her favorite scientific community and to mentoring, she would always make time for invitations from graduate students to give seminars and for the ASCB annual meeting. She considered the ASCB meeting to have the best combination of breadth, rigor, and collegiality of any conference that she attended. She served on the Program Committee eight times, chairing it in 1984. She also served on the Public Policy Committee, the Executive Program Planning Committee, the Publications Committee (1991 chair), the Nominations Committee, the E.B. Wilson Award Committee, the International Affairs Committee (2006 chair), and the Women in Cell Biology Committee (WICB; 1998–2003 chair). As one might expect, it seemed that she knew everyone at the ASCB annual meeting and she literally could not walk 20 feet at the meeting without running into someone she knew. This was, in the end, what she treasured most about her multi-decade relationship with the Society: the personal relationships, the chance to catch up with old friends, meet bright early career scientists, hear the very latest research across her broad and diverse interests—and to bring new ideas back to the lab.

**Closing**

We hope with these few words to have given a sketch of the truly remarkable human being, trailblazing scientist, much-sought mentor, treasured friend, and warm person that was Zena Werb. Her legacy is so much more than her publications, her citations, and h-index. Science is richer and more advanced and our world is a better place because of her devoted efforts to make it so.

**About the Authors**

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