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introduction

Careers on Hold

by w. mark leader, editor

In June 2020, an issue of the Newsletter focused on Careers must acknowledge that COVID-19 has put the careers of many cell biologists in a state of suspended animation. While educators have been frantically busy coping with the challenges of teaching online, researchers—including graduate students and postdocs—have been locked out of their labs.

How should the research enterprise be relaunched when the pandemic is under control? Not “swiftly, quickly, and fast,” but rather “respectfully, safely, and kindly,” argues Sharon Milgram, who was interviewed for the Career Navigator column (p. 27). How much will the relaunch cost (p. 25)? And what should a graduate student who is stuck six months shy of completing a PhD do? Labby has advice (p. 30).

The road back to the lab may be even harder for international students and scientists who want to resume their research in the United States as pandemic-related restrictions ease. The Trump administration has been putting up roadblocks for these researchers, including a freeze on the issuance of new H-1B, H-2B, J, and L visas that ASCB has called “reprehensible” (p. 23).

Perhaps this time away from the bench can be an opportunity to assess your career plans. Those considering an academic career will want to read ASCB President Eva Nogales’ enthusiastic account of her life in academia (p. 6). And whether or not you aspire to become a department chair anytime soon, ASCB Secretary Kerry Bloom’s account of the transition from professor to chair is a great read (p. 10). If you’re looking for a way to continue in research without dealing with the pressures of being a PI, you’ll want to read about Jennifer Bagwell’s life as a laboratory manager (p. 27). In this month’s Member profile (p. 32), you can read about newly elected ASCB Council member Casper Hoogenraad’s experience doing research in industry.

Finally, how should we cope with the uncertainty and fear that we’re all experiencing in the pandemic? Stay the course and look forward, suggests Labby.
ASCB Fellow **Sandra L. Schmid** has been named as the first Chief Scientific Officer at the Chan Zuckerberg Biohub, a nonprofit research organization practicing collaborative science to cure, prevent, or manage disease. Schmid was previously at University of Texas Southwestern Medical Center, where she served as chair of the Department of Cell Biology and held the Cecil H. Green Distinguished Chair in Cellular and Molecular Biology.

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Eight ASCB members elected to National Academy of Sciences

On April 27, the National Academy of Sciences announced the election of 120 members and 26 international members in recognition of their distinguished and continuing achievements in original research. International members are nonvoting members of the Academy, with citizenship outside the United States.

The following ASCB members were among those elected:

Yifan Cheng: investigator, Howard Hughes Medical Institute; and professor, Department of Biochemistry and Biophysics, University of California, San Francisco

Lawrence S. Goldstein: director, Sanford Consortium for Regenerative Medicine and University of California, San Diego (UCSD) Stem Cell Program, and professor, Department of Cellular and Molecular Medicine, School of Medicine, UCSD

James H. Hurley: Judy C. Webb Chair and professor of biochemistry, biophysics, and structural biology, Department of Molecular and Cell Biology, University of California, Berkeley

Anthony Hyman (United Kingdom); director, Max Planck Institute of Molecular Cell Biology and Genetics

Sean J. Morrison; investigator, Howard Hughes Medical Institute; and director, Children’s Research Institute, University of Texas Southwestern Medical Center, Dallas

Kim Orth; investigator, Howard Hughes Medical Institute; W.W. Caruth Jr. Scholar in Biomedical Research, Earl A. Forsythe Chair in Biomedical Science, and professor, Department of Molecular Biology, University of Texas Southwestern Medical Center, Dallas

Michael K. Rosen; investigator, Howard Hughes Medical Institute; professor, Department of Biochemistry, and chair, Department of Biophysics, University of Texas Southwestern Medical Center, Dallas

Sandra L. Schmid: Chief Scientific Officer at the Chan Zuckerberg Biohub
It would be an understatement to say that the last few months have been unlike any others I have experienced. How many times have I said—aloud or in my head—in sheer astonishment at what was unraveling, "Who would have told us a few months ago?" While adjusting to life in a pandemic, I needed to force myself into some quiet introspection, if only to find some inspiration to allow me to write a column for the ASCB Newsletter issue dedicated to Careers. What follows is what I concluded about my own career in science and academia and how it intersects with the careers of others, especially those who are now starting their own.

My job has many facets, and every day is different. I am constantly faced with things that I do not know, so I never cease to have learning opportunities. I am surrounded by intelligent people who never stop questioning how everything works. In my job, people talk, and people listen. They have different cultures and personal histories, come from different places, and may have different accents, but they all feel like kindred spirits to me. We have all embarked on the same journey of discovery, facing the unknown, building on each other’s efforts and the efforts of many others before us. And whatever we discover ourselves will help those who come after us. And the most magical of all: In my job, I age, but most of the people around me are forever young, ever eager, ever driven, and ever fearless.

Teaching through a Pandemic

Today is a Saturday. It could be any other day of the eighth week of shelter-in-place in the Bay Area, now that week days and weekend days are hard to distinguish from one another. I have just finished teaching MCB110 (yesterday I held my last office hour), an in-depth biochemistry course for juniors and seniors at the University of California, Berkeley, in which we dissect the mechanistic principles behind the central dogma of molecular biology. My section of the course deals with the birth, life, and death of proteins: their synthesis, folding, modification, trafficking, and degradation.

This semester, for the first time, I conducted instruction remotely, a scenario that will likely occur again. My Zoom lectures were recorded and only a fraction of the class attended them in real time. The very first lecture felt really awkward. It was not difficult to imagine that the students, even the teaching assistants, had logged in and then left the room, and that I was alone, talking to several dozen screens that no one was actually paying attention to. Then something came through the chat dialogue. A question! At least one student was listening to me!! Clumsily, I managed to read the question, tried my best to answer it, and then got back to my PowerPoint window, heart pumping, voice a little shaky, as I noticed in embarrassment once I listened to the recording later (big mistake!).

As I continued, there were more chat notices, more questions, more than one listener. Amazingly, time
flew by, just like when I give my lectures in the flesh. I wrapped it up and summoned the students, those who I hoped were still there, to join me again in two days. The number of students attending the lecture remained steady through the rest of the semester. I concluded that no one was enchanted by the recordings to the point that they wanted to actually e-meet me, but that at least none of the students attending regularly had gotten tired of the Eva Life. I choose to be content.

Office hours, too, have been a different experience than what I’m used to. Because only between two and eight students come to any one of them, videos and microphones were available to everyone and I could see the students and hear their voices. Let me repeat: I could SEE the students. It is incredible how much something that we take for granted can suddenly gain a special meaning when you have been denied it. I now think that the office hours this semester have been the most enjoyable and meaningful I have ever had. I actually feel that I have bonded with some of those students in a way that had not happened before. There was a special empathic connection that came from realizing that we were all living, together, under very special, challenging circumstances.

Talking about challenges, my students really grilled me. They pushed the boundaries of my knowledge, or what I thought I knew, because they have an enduring capacity to question everything, to see every logical flaw, to detect the missing piece of information, to interpolate and extrapolate from what I, inadequately at times, am able to distill into a 50-minute lecture about complex cellular processes that we still barely grasp. These young people, who are about half my age, are so smart, inquisitive, and alert! They make me really want to rise to their expectations, and this semester, in my home kitchen/office, while dealing with a thousand new challenges brought about by a pandemic, I have worked on my class more than any other year—to the point of forgetting momentarily about COVID-19 (!)—because I wanted to be able to answer their questions, and had to concentrate on little but them until the last day of instruction.

**So Many Hats!**

Teaching undergraduates is just one part of what I do. And it feels like skiing: difficult (I put on skis for the first time at age 42), but thrilling. I could have written this column about the research in my lab and the interactions with my students, postdocs, and researchers; about the struggles and incredible joys of the research pursuit; about the journey, full of ups and downs, and about the magical moments of epiphany. I could have told you about the joy of attending conferences, when I hear about the latest discoveries, meet new people, and sometimes strike up new collaborations, often in truly beautiful places (which I used to love to fly to and now I am scared to think about).

Or I could have told you about what it is like to be division head and herd over 30 brilliant, but sometimes forgetful, sometimes reluctant, faculty who need to hear from me about their teaching and committee assignments. About how as I prepare their merit and promotion cases, I learn about their scientific breakthroughs, their teaching accomplishments, and the service they do for the scientific community. It’s funny to think that not so long ago I was on the other side of the equation, a starting assistant professor too concerned with getting my own science going to think of what my division head had to do to keep things running.

I could have written about working with other scientists at ASCB or the Pew Charitable Trusts, about advising research centers in three different continents, about the thrill of starting a new company. All of these are aspects of what a long life, lived as a scientist, has brought to me. I joke with people that I am a scientist because I lack any artistic talent (which just happens to be the case), but the truth is that I cannot think of a more colorful and wonderful life. I love my
science colleagues—that is the very best part of it. But I even like the adrenaline of the scary parts of being in this business: being evaluated constantly and by everyone—students, peers, reviewers, funding agencies—and being scared of failure and competition, but realizing that even the best among us live under the same fears and that we overcome them.

There are just too many rewards of living the life of the academic scientist to think that they would not come at some cost. To the younger ones reading this column, no matter how stressed and busy we may seem, just ask us and we will tell you this: we LOVE what we do and feel truly privileged.

**Into the Future**

Beyond the little pains and the many joys of being a scientist in academia, it feels good to believe that what we are doing has a meaning, a purpose, and that it can improve the world we live in. I cannot think of many times in recent history when science has had a more important role to play. The world as we knew it is gone, and we have the opportunity and responsibility of building a new and, we hope, better one. The scientific method and the resourcefulness of scientists around the world, in many disciplines, are needed to deal with the health and social challenges we are now facing, and with the devastating environmental threats that will remain long after we have dealt with the present pandemic. We need to learn, we need to inform. We will be part of the solution. At least I am sure that my most inquisitive MCB110 students and the young cell biologists reading this column will be.

ASCB can be an invaluable ally to you throughout your career. Our Society brings many resources to your disposal to help you navigate, one stage at a time, the challenges you need to face, from learning to present your work in the most effective way when interviewing for a position, to writing successful grants, to understanding your rights as a tenure-track faculty member. Many of you may wish to look beyond academia and into industry, policy making, and the many other possibilities that are within your reach as a well-trained scientist. ASCB would also help you navigate those waters.

In this issue, those interested in academic careers can learn about what it’s like to become a department chair (p. 10). Those interested in other career paths can read about a member in industry (p. 32) and another who works as a lab manager (p. 20). No matter what career path you are on, you can’t help worrying how it will be affected by the pandemic. The Career Navigator (p. 28) and Dear Labby columns address how to get through this crisis and how we might emerge on the other side of it.

Beyond what’s available in this issue of the Newsletter, the Career Development page of the ASCB website (www.ascb.org/career-development) lists the many career resources the Society offers for undergrads, graduate students, early-career scientists, faculty, and mid- to late-career scientists.

**Footnote**

1 At the time I wrote this article, George Floyd was still alive. Re-reading this particular paragraph during proofing reminded me of how much I appreciate the differences among us that enrich us, and the goal of scientific truth that unites us. While I decided not to alter the theme of this column, I urge you to read the statement that I and other members of the ASCB leadership signed concerning racial injustice in the United States (p. 13).

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**About the Author**

Eva Nogales is a Howard Hughes Medical Institute investigator; a professor of Biochemistry, Biophysics and Structural Biology at the University of California, Berkeley; and Senior Faculty Scientist at the Lawrence Berkeley National Laboratory.
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On Becoming the Very Model of a Modern Mellow Chair

By Kerry Bloom

The academic profession is unique in many ways. We don’t think of our livelihood as a job; it’s a passion. We’re trained to be critical, evaluate outcomes dispassionately, and provide the community a concise description of our findings. When we finish graduate school and our postdoc and are ready to strike out on our own, we more than likely find ourselves in a job for which we have very little formal training. Becoming a department chair follows this trajectory. When I became chair of the Department of Biology at the University of North Carolina, Chapel Hill, two years ago, I discovered that nothing in my 35+ years in academia had prepared me for the job. Instead it is my experience as a father, grandfather, teacher, and mentor that has been most useful. What follows are a description of my experiences in the first two years and a few principles that are not found in the myriad of literature given to new chairs, but that have given me strength to endure and, hopefully, to lead.

Why did I take this job? I felt an obligation to serve the community that had given me so much when I was young. When we were young professors, the senior faculty members gave us the freedom to grow, and they led by example. Fast forward to present and we find ourselves in a very different world. Notwithstanding COVID-19, the academic landscape has been overhauled. What is a leader in this new world? What are our goals and how do we get there? I did not become chair for personal gain; I am not an executive; I am not an administrator. What I am is a buffer between senior leadership in the university (deans and above) and faculty. What I am is a leader of a huge team that includes faculty, staff, students, postdoctoral fellows, and people of all walks of life. What I want is for all
of them to feel that they are valued and that there is someone at the top to count on who has their best interests at heart. I will use “team” going forward to include the diversity of people within the department.

Strategies
My first lesson was to show vulnerability. I am pretty sure I’ve made every mistake one can in the laboratory, so I’ve learned that holding ourselves to unattainable standards is not productive—it’s not useful to feel constitutively inadequate. Realizing we are vulnerable organisms that feel things and process those feelings in diverse ways is important. Showing those feelings toward each other is a step toward embracing our humanity and reaching a place where we can discuss core values versus posturing for accolades of some form or another.

Listening is an art, the practice of which is woefully underutilized. This is interesting because as scientists we pride ourselves on our powers of observation. However, when it comes to interpersonal interactions, we have a tendency to pontificate rather than empathize. The importance of empathy is well described in a poem by Mary Oliver:

Attention without feeling,
I began to learn

I have told my team that I do not want reports. What I want is to understand the basis for a given request/complaint/demand in order to make sure that we are addressing the core problem.

I have found the practice of role-playing to be very helpful. If I switch roles in a given interaction, how will my words be heard? It never ceases to amaze how my words get “mis”-construed. But I have come to realize that words are not misconstrued. Instead they are filtered through a complex cultural web. The sooner we embrace cultural diversity, the sooner we will be able to talk to one another with feeling and empathy and communicate rather than spar verbally. This is hard work and unfortunately we don’t have the bandwidth to know everyone to the extent required. However, recognizing there are myriad interpretations is a step forward. Putting yourself in someone else’s position and trying out different deliveries is worth the effort.

Don’t tell people what or how to do things. Trust me, I have tried. Even if they follow your advice, this is not a morale builder. In reality, the chair’s job is to help
everyone reach their potential. Instead of telling people things, I ask questions. They are in the form of “What are your goals?” or “Why don’t you try something else?” As chair, I am the conduit to the diversity of research, teaching, and service opportunities within the university. If I can help people continue to find satisfaction in the workplace and contribute in a meaningful way toward the education of the next generation then I am doing the job. The trick is finding the right fit. This gets back to listening to the team, finding out what drives them, and figuring out where they fit within the system.

Embrace ambiguity. This is a hard one for those of us trained as research scientists. We design experiments to distinguish different hypotheses and deduce mechanism. In contrast, university rules and regulations are written to be ambiguous to allow for the diversity of behaviors across, in my case, the College of Arts and Sciences. There is no rule book, and we are nothing if not a body of rule-followers. I rely on my own moral compass, circling back to leadership. (Such ambiguity is also one of the challenges in the COVID-19 crisis. As an unexpected consequence of the pandemic, we have learned that crises are when the natural leaders stand out.)

As chair, leadership is paramount. What does leadership mean? Another voice that gives me guidance is Krista Tippett in her radio show and podcast “On Being.” She recently interviewed Stephen Batchelor, who discussed nirvana as “…the absence of greed, absence of dislike, and absence of egoism….a solitude in which you’re not being crowded out by your attachments and your fears and your egoistic confusions.”2 I am a leader if I am able to listen to all voices on my team, dissociate my personal feelings and desires, and help us become stewards for imparting our lessons to the next generation.

An Important Job. But…

To those who aspire to be a chair: I can’t emphasize enough the importance of a good chair. You are doing a good and necessary deed. It is invaluable for a department to have an advocate for promoting the welfare and professional development of all its constituents. There is true joy in explaining how wonderfully different people perform and why they need a raise/equipment/space/promotion. It is important that departments have leaders they respect and with whom they can openly discuss the diversity and complexity of issues that arise.

When you seek the position of chair, make sure you are doing it for your constituents, because what you give up is not trivial. The most notable loss is the time to think. There is no free time—zero. The speed, intensity, and frequency of questions and concerns from students, staff, faculty, deans, and provosts is simply unfathomable. If your department is one of the largest on campus, and biology departments often are, this is typical of what you will experience. I have learned to let nothing sit on my desk for more than a microsecond. I trust my intuition; I simply cannot do the due diligence that every concern deserves. It is often more important that a decision be made, so people can get on with their lives, and less important which decision it is. Another lesson from COVID-19: There are few things in our daily lives that actually matter. What I care about is humanity. If I can make someone’s life slightly easier, help people assess their goals, and give them the freedom to achieve their goals then we will build morale and provide an environment where people of all shapes, colors, sizes, and desires can thrive.

References


About the Author

Kerry Bloom is Thad L. Beyle Distinguished Professor and chair, Department of Biology, University of North Carolina, Chapel Hill. He serves as ASCB Secretary.
ASCB Condemns Racial Violence, Demands Change

A Statement from the ASCB Leadership

Over the last week, particularly this past weekend, we watched with heavy hearts the killing of George Floyd while in the custody of the Minneapolis police department and the resulting protests. We want to express our sadness and anger, our condemnation of racist violence, and our solidarity with the Black community.

The callous disregard for human life that led to Mr. Floyd’s death and the unjust deaths of so many other African Americans before him is unconscionable. We understand why our fellow citizens, in big and small cities around America, are taking to the streets so that their voices are heard, and with them, we demand change in our country.

The ASCB has a strong commitment to equity, inclusion, and diversity that is reflected in the Society’s mission statement. But we recognize that it is important to do more than just write a pledge. We must do better and look at our own practices and culture to do more to combat systemic racism. With that in mind, we will work with our governing Council and our membership to identify specific actions that the ASCB can take to understand the history of racism in our society & scientific field, to work toward remedies that address the exclusion & inequity established by that history, and to support efforts to prevent the continued perpetuation of racism in our society. To accomplish such a tall order, we acknowledge that we still have much to learn, and are willing to listen.

Throughout the anger and violence of this past weekend, we were heartened and inspired by many moments of hope. The ASCB reaffirms its commitment to make our world more just, equitable, and safe for everyone. We hope you will join us today with your own commitment to this cause so that we can share together our hope of an America rid of racial discrimination once and for all.

Eva Nogales, ASCB President
Andrew Murray, ASCB Past President
Ruth Lehmann, ASCB President-elect
Erika Shugart, ASCB CEO

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ASCBC Honorific Awards

Nominations and Self-Nominations Accepted for All Awards

FOR GRADUATE STUDENTS AND POSTDOCS
ASCBC Porter Prizes for Research Excellence
Who is Eligible: Graduate students and postdocs.
Winner receives: $2,000 for outstanding predoctoral research and $4,000 for outstanding postdoctoral research, plaque, dinner with the Porter lecturer, travel costs of up to $1,000, and give a Minisymposium talk at the ASCBC|EMBO Meeting.
Deadline: Extended to July 31; abstract submission required first.

Merton Bernfield Memorial Award
Who is Eligible: An outstanding graduate student or postdoctoral fellow (at the time of nomination) who has excelled in research.
Winner receives: Plaque, $1,000, meeting registration, economy airfare, up to four nights’ hotel, and up to four days per diem and gives a Minisymposium talk at the ASCBC|EMBO Meeting.
Deadline: Extended to July 31; abstract submission required first.

FOR ESTABLISHED SCIENTISTS
E.B. Wilson Medal
Who is Eligible: An individual who has demonstrated significant and far-reaching contributions to cell biology over a lifetime in science.
Winner receives: E.B. Wilson Medal, meeting registration, economy airfare, up to four nights’ hotel, and up to four days per diem, and gives the E.B. Wilson Lecture at Cell Bio 2020—an ASCBC|EMBO Meeting.
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Give back to your cell biology community by signing up to help younger ASCBC members with online CV review. We are always looking for more volunteers, including ASCBC members in academia and industry, to help review cover letters, CVs, and resumes of young ASCBC 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@ascbc.org.
Hyman to Present 2020 Keith Porter Lecture

By Mary Spiro

Anthony Hyman, one of four founding directors of the Max Planck Institute of Molecular Cell Biology and Genetics in Dresden, Germany, and an ASCB Fellow, will present the Keith R. Porter Lecture at Cell Bio 2020—an ASCB|EMBO Meeting.

Using *Caenorhabditis elegans* as his model organism, Hyman has contributed to the understanding of the mechanism by which centrioles replicate, separate, and trigger microtubule nucleation. The Hyman lab has also elucidated some of the mysteries of spindle assembly and positioning. Over the last two decades, Hyman has become known for using *C. elegans* as a model system to create the “parts list” used in various cytoplasmic processes. While teaching at the Woods Hole physiology course with Clifford Brangwynne and Frank Julicher, Hyman was among the first to witness that cells employ phase separation to create fleeting, non–membrane-bound sub-compartments. Understanding why and how these compartments form, and also what happens if their formation process goes awry, could provide insight into neurodegenerative diseases.

“Tony Hyman has made fundamental contributions to our understanding of the microtubule cytoskeleton and its role in cell division, and has been a pioneer in the study of cellular compartmentalization by phase separation phenomena,” said ASCB President Eva Nogales.

“What stands out for me about Tony’s work is the biophysical rigor he brings to his work in cell biology, in concert with his ability to pioneer conceptual advances,” added Erika Holzbaur, chair of the board of the Keith R. Porter Foundation. “A perfect example is the work on phase separation in cell compartmentalization that Eva mentioned, which has been exciting from both an experimental perspective and a change in the way we view the ways the cell is organized.”

Hyman earned his PhD in molecular cell biology at King’s College, in Cambridge, UK, and was a postdoctoral fellow at the University of California, San Francisco. Prior to his work at Max Planck, he was a group leader at the European Molecular Biology Laboratory in Heidelberg, Germany. His career has been highly recognized, and just this year Hyman was awarded the Wiley Prize in Biomedical Research and the NOMIS Distinguished Scientist Award and was elected to the National Academy of Sciences.

“I would like to dedicate this lecture to my wife Suzanne Eaton, who passed away last year. So much of my progress in science was predicated on her love and support,” he said. “It is a great honor in any cell biologist’s career to be asked to give the Keith Porter lecture.”

ASCB is pleased to present the Keith R. Porter Award, given to an eminent cell biologist in memory of one of ASCB’s founding members, to Anthony Hyman.
Target for Breast Cancer Therapy Prevents Chemo-Resistance

By Mary Spiro

Researchers constantly search for promising ways to thwart the spread of cancer, especially ways that can reduce chemo-resistance. Often, however, the mechanisms cancer cells harness for chemo-resistance are important to processes in healthy cells, too.

As part of the capstone of his doctoral work at the University of the Sciences in Philadelphia, Norman Fultang focused on an upstream regulator for a gene found in both healthy and cancerous cells. What’s special about the regulator is that in healthy cells, it’s mostly found only in embryonic or fetal tissue. The ROR1 oncofetal regulator controls the ABCB1 gene.

“ABCB1 and other drug efflux pumps mostly function in shuttling a wide range of molecules across the cell membrane,” Fultang said. “Anything from steroids to lipids, phospholipids, cytokines, and many more. These make them very valuable to normal cell physiology, [but they present] a particular difficulty when targeting them clinically for cancer treatment.”

So since ABCB1 genes are found in both cancerous and normal tissue, Fultang looked upstream for a target. “The beautiful thing about oncofetal receptors like ROR1 is that they are mostly cancer-specific, making them valuable clinical targets,” Fultang said.

In addition, ROR1 is not commonly expressed in healthy adult cells.

“The ROR proteins are highly expressed during development,” he said. “They regulate processes from neurite growth to skeletal and cardiorespiratory development. High expression of ROR1 is typically observed during the embryonic and fetal developmental stages, but levels are minimal in more mature tissue, although there is some ROR1 expression in adult pancreatic, lung, and neural tissue.”

By inhibiting the oncofetal regulator ROR1 using previously established methods, he and his colleagues circumvented the potential ill effects to normal cells that might have occurred by knocking down the ABCB1 gene directly.

“We anticipate this would mitigate some of the negative effects of ABCB1 disruption in normal tissue. ROR1 inhibition itself has been widely studied, with relative success, as an approach for a variety of solid and hematologic malignancies,” he said.

One of the most difficult aspects of this research, Fultang said, was finding the “mechanistic link between ROR1, a cell surface receptor, and disruption of ABCB1 on a transcriptional level. In doing so, we identified an increase in tumor suppressor p53 activity as a result of ROR1 disruption, which is always great news for cancer therapy. We got lucky because p53 is a huge transcriptional regulator of ABCB1.”

Fultang has accepted a postdoctoral position doing immuno-oncology work at the University of Pennsylvania. “I will keep pursuing cancer-specific targets like ROR1, but will also study immuno-regulatory elements that so often impede cancer therapy.” And Fultang, who is Black, added that although no one close to him has suffered from breast cancer, “Breast cancer disproportionately affects women of African descent, so I have a personal stake in studying it and contributing to the effort.”
Lipid and protein dynamics that shape nuclear envelope identity
Shirin Bahmanyar and Christian Schlieker (June 15, 2020)

Freedom of assembly: metabolic enzymes come together
Jacqueline C. Simonet, Anika L. Burrell, Justin M. Kollman, and Jeffrey R. Peterson (June 1, 2020)

From stem cell to immune effector: how adhesion, migration, and polarity shape T-cell and natural killer cell lymphocyte development in vitro and in vivo
Barclay J. Lee and Emily M. Mace (May 1, 2020)

The ABCF gene family facilitates disaggregation during animal development
Sydney Skuodas, Amy Clemons, Michael Hayes, Ashley Goll, Betul Zora, Daniel L. Weeks, Bryan T. Phillips, and Jan S. Fassler (June 15, 2020)
Skuodas and Clemons et al. show that protein aggregation is pervasive during early development and that the ABCF family of soluble ATP-binding proteins, which are encoded by animal genomes and expressed embryonically, regulate disaggregation and are instrumental for a normal developmental program.

The splicing-factor Prp40 affects dynein–dynactin function in Aspergillus nidulans
Rongde Qiu, Jun Zhang, and Xin Xiang (June 1, 2020)
We performed a genomewide mutant screen for genes affecting dynein-mediated early-endosome distribution in Aspergillus nidulans, and we unexpectedly identified Prp40A, a homologue of the yeast splicing factor Prp40. Prp40A and its higher eukaryotic homologues may represent new factors affecting the assembly and function of dynein-dynactin.

Proteomic analysis of desmosomes reveals novel components required for epidermal integrity
Kwabena A. Badu-Nkansah and Terry Lechler (May 15, 2020)
Desmosomes are cell-cell adhesion structures that are required for the integrity of the skin and heart. Here, we have used a proteomics approach to identify novel desmosome-associated proteins. Ablation of Crk and Crkl, two such proteins identified, results in desmosome defects, epidermal fragility and neonatal lethality.
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Application Deadline: October 7

These informal sessions focus on hot topics within the scientific community. Attendees can grab their lunch and join a topic of discussion important to them and network with their peers. Table leaders are responsible for facilitating the topic discussions.

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.

Pennsylvania Convention Center, Philadelphia, PA
www.ascb.org/cellbio2020 | #cellbio2020

Attendees and presenters who cannot join in person will be able to join the meeting digitally.

IMPORTANT DATES AND DEADLINES

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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

THE GENOME
Tracks: Cellular Genome and Physical Cell
Wendy Bickmore
MRC Human Genetics Unit, Edinburgh, UK
Leonid Mirny
Massachusetts Institute of Technology

GROWTH, PATTERN AND FORM
Tracks: Communal Cell and Physical Cell
Hiroshi Hamada
Center for Developmental Biology, RIKEN, Japan
Kristy Red-Horse
Stanford University

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
Emerging Voices
Jennifer Bagwell Balances Lab Manager and Research Scientist Responsibilities

By Vaishnavi Siripurapu

Each month, the ASCB Committee for Postdocs and Students (COMPASS) profiles a cell biologist on the ASCB Post. The featured cell biologist in this column is Jennifer Bagwell, a lab manager in the Department of Developmental Biology in Michel Bagnat’s lab at Duke University Medical School in Durham, NC. The Bagnat lab studies the cellular and physiological mechanisms controlling morphogenesis. They use zebrafish as a model to study the development of the notochord. The Bagnat lab recently discovered how sheath segmentation provides a template for spine patterning in the notochord. Recent work in the lab has also revealed how sheath cells invade the inner layers of the notochord to repair internal damage. Understanding how the notochord forms is crucial to understanding the developmental mechanisms of the entire phylum Chordata and may lead to fundamental breakthroughs in basic cell and developmental biology. Bagwell has been a part of the Bagnat lab for nine years and has been an author of almost half of the publications from the lab.

What kind of research do you do?
Developmental cell biology, specifically work around the development of the zebrafish notochord.

What is one word that best describes how you work?
Chaotic (but organized). I wear a lot of hats.

What excites you most about your current work?
I really like discovery. I like the beginnings of a project. I like finding something interesting and going after it. That’s what’s exciting to me. I have had many exciting days since I have started working in the Bagnat lab, one being the day I noticed notochord segmentation. We had no idea at the time that it would turn into a beautiful story, but I knew it was really cool. Being able to watch the notochord develop in and of itself is really exciting and has led to a few really elegant papers. It’s so cool to be able to watch something come together in an animal as it is still alive.

I just fell in love with developmental biology.
Can you describe one experience from your life or training that set you on this path?

My training is in marine biology. From when I was old enough to walk and talk, I said I wanted to be a marine biologist when I grew up. Someone from high school told me that I was the only person they knew who did what they said they would do as a child. Now, I don’t do marine science research anymore. I finished my degree and I needed to find a job. Zebrafish aren’t marine animals, but I saw the research as a stepping stone to get back into marine science. I just fell in love with developmental biology. I think it’s just happenstance that I met the PI of this lab, and we immediately hit it off. His excitement and his mentorship are really what made me fall in love with this type of research. I always thought that I would be working on the Great Barrier Reef or saving the coral reefs or things like that, but studying things on a basic level and figuring out how things form is really interesting to me.

What is one part of your current position or project that you find challenging?

I really struggle with little tiny details to finish a story. I like big-picture work, doing experiments, etc. When it comes to sitting down and writing, that is really challenging for me. Tying up loose ends, I would say, is the hardest part of my work. I think this might be because I really hate to sit at my desk. I love being at the bench and talking and teaching, but sitting at my desk and writing is not my strong suit. This is a reason why my PI and I get along so well, as he is more story-oriented. He is like the brain, and I am the hands. As a lab manager, keeping the lab running and being a researcher is difficult; they can really run into each other and striking this balance is a challenge for me.

For example, when the freezer goes haywire and you have to find a new freezer, that impacts me as a lab manager and as a researcher and can really slow me down.

What’s your best time-saving shortcut/lifehack?

You develop all kinds of little tricks as you go. I try to be as organized as possible. But sometimes when you’re doing so many things, it can be kind of impossible. Being unorganized really slows me down. My life is “organized chaos.” My desk isn’t the tidiest, but I know where everything is, and I know when something is missing. I don’t know if I have a particular trick. One thing my PI taught me when I was just starting was to swirl my cup of zebrafish embryos so that they are all in the center before looking at them under a microscope. To this day, I still use this trick quite often and it has been very helpful.

What’s your favorite to-do list manager (digital or analog)?

I write my to-do lists on Post-it notes and they are just stuck everywhere I need them. One of my to-do’s on my Post-it notes is actually to look for a digital to-do list. For now, though, my Post-it notes really work for me.

What apps/software/language/tools can’t you live without?

I don’t really use a lot of technology. I’m not that techy, but I couldn’t live without imaging software since imaging is my favorite part of the work that I do.

Besides your phone and computer, what gadget can’t you live without? And how do you use it?

I love my coffeemaker.
When/where do you find the most creative inspiration for your research?
In the imaging processes, honestly. You never know what you’re going to see, you’re watching things form live. Most of the exciting and potentially crucial moments of a whole project have come from imaging. I love noticing new things and imaging new lines [of zebrafish].

At some point, you just have to slow down, take your time, look at the details and just pay attention....

What is one thing you never fail to do (in or outside of lab), no matter how busy you are?
Let my dogs out. I have to take care of my dogs every day regardless of how busy I am in the lab. I love my dogs very much; they are a huge source of stress relief for me. I also really enjoy playing pool. I have a lot of competitive energy, and I release it through pool. I don’t like feeling competitive in science. I feel like science should be more collaborative than competitive.

Who is one of your scientific heroes, and what is one quality you admire in that person?
Michel Bagnat, my PI. As a scientist, as a mentor, and as a thinker, he has a brilliant way of taking things that are complicated and telling a simple story. I don’t know anyone who’s better at that than him. As a female scientist, I really admire Blanche Capel. She is always present at talks and always asks probing and helpful questions. She’s a great community member and always has herself together. She is an incredible female role model as a scientist.

Are there any causes or initiatives in or outside of science that you are particularly passionate about?
I used to spend a lot of time working with kids. I worked with the Boys and Girls Club all throughout college. This is something I’ve been meaning to get back into, as it is super rewarding. I think it is important to show at an early age that science is more than just looking at caterpillars. Kids need to understand the depth of science from an early age to develop that love and need to explore. I donate money to different schools, but I intend to donate my time to grow youth and engage minds.

What’s the best advice you’ve received or some advice you’d like to share with trainees?
Just slow down. If you rush, you might miss surprises and miss little things that might take what you’re doing to the next level. At some point, you just have to slow down, take your time, look at the details and just pay attention because you never know when something exciting will pop up.

How do your roles as a lab manager and a researcher interact with each other?
My roles constantly interact with each other. They also at times combat each other. Balancing time can be tricky, especially when we are finishing a paper or working against deadlines. Finding balance can be stressful, and sometimes I feel overwhelmed. But, I work with an amazing group of people who are always willing to help out. That is something I really love about our lab, we come together and work as a team when we need to. I think we owe a lot of our success to that mentality.

About the Author
Vaishnavi Siripurapu is an undergraduate student majoring in Biology and Women’s Studies at the University of North Carolina, Chapel Hill.
Visas for Scientists Part of COVID-19 Debate

By Kevin Wilson

The ability of international trainees and scientists to continue to work in the United States has been one of the major concerns of the ASCB’s Public Policy Committee in the last few months. COVID-19-related lab closures have put a stop to research and the hopes of many international students that they can complete their current project before the expiration of their current visa. In addition, U.S. embassies and consulates are closed just when international graduate students are preparing to come to the United States for the start of fall classes.

In early April, the ASCB (www.ascb.org/covid-immigration) wrote to Speaker of the House Nancy Pelosi, Senate Majority Leader Mitch McConnell, and Senate Minority Leader Chuck Schumer asking “that the next COVID-19-related support bill include visa extensions of one year for F-1, J-1, and H-1B visas for foreign scientists currently here in the United States and working in our biomedical research laboratories.” In addition, we have shared our concerns with the Office of Science and Technology Policy (OSTP) at the White House.

The $3 trillion HEROES Act, passed by the House of Representatives as the next in a series of stimulus bills to rescue the U.S. economy, includes provisions that will address a number of the visa-related concerns the ASCB raised. Regrettably, passage of the HEROES Act by the U.S. Senate, which had seemed unlikely at the start, remains delayed.

At the same time that the United States is dealing with the public health and economic consequences of the COVID-19 pandemic, there are efforts to restrict entrance into the United States by people from other countries. The White House has taken two actions in this direction. An April 22, 2020, executive order (https://bit.ly/2zYx7QP) declaring a 60-day halt to immigrant visas and to the issuance of green cards includes a provision instructing the Departments of Labor, Homeland Security, and State to study whether the President needs to also ban nonimmigrant visas, which include F-1, J-1, and H-1B visas. This executive order was followed several weeks later by another order (https://bit.ly/3hcdchY) prohibiting citizens of the People’s Republic of China (PRC) from coming to the United States for graduate or post-graduate study. This prohibition covers any Chinese citizen who “receives funding from or who currently is employed by, studies at, or conducts research at or on behalf of, or has been employed by, studied at, or conducted research at or on behalf of, an entity in the PRC that implements or supports the PRC’s ‘military-civil fusion strategy.’” In addition, the directive instructs the Secretary of State to consider revoking the visas of Chinese students already in the United States.

At least two groups of Republicans from Congress have sent letters to the White House supporting completely different visa-related policies. In early
May, U.S. Senators Tom Cotton (R-AR), Ted Cruz (R-TX), Josh Hawley (R-MO), and Chuck Grassley (R-IA) sent a letter (https://bit.ly/3cC8IoS) to the president urging him “to suspend certain categories of new guest worker visas for at least the next year, or until unemployment has returned to normal levels.” In their letter, the four senators highlighted H-1B visas and the Optional Practical Training program as two of the programs to be suspended. The senators explained their call for a stop to the H-1B visa program by saying, “There is no reason why unemployed Americans and recent college graduates should have to compete in such a limited job market against an influx of additional H-1B workers, most of whom work in business, technology, or STEM fields.”

Less than a month later, 21 Republican members of Congress wrote to the Secretary of State and the Acting Secretary of Homeland Security supporting the visa programs that allow international students to come to the United States to study. In their letter the group said, “While international students make up only 5.5 percent of overall U.S. college enrollments, they make significant contributions to our communities and help our students develop skills vital to their future success in the global economy.”

Along with these dueling letters, members of Congress continue to introduce bills that, if they were to become law, would impose serious restrictions on Chinese students entering the United States, including requiring security clearances.

It is possible adjustments to nonimmigrant visas for scientists may fall victim to presidential and congressional election year politics. The ASCB will continue to work to see this does not happen.

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**Update added in proof**

**ASCB Calls Visa Freeze “Reprehensible”**

On June 22, 2020, the Trump Administration issued an Executive Order (https://bit.ly/2BvSIR1) freezing the issuance of all new H-1B, H-2B, J, and L visas until December 31, 2020. In the Executive Order, the president said he was freezing these visa programs because the entry of immigrants under these visa programs “would be detrimental to the interests of the United States.”

In a statement, the ASCB called the Executive Order “reprehensible,” saying it “goes against everything the United States stands for and violates the principle that scientific excellence requires collaboration, regardless of nationality.”

The ASCB statement also reminds everyone that the real victims of this Executive Order won’t be the foreign students but American science and scientists. “Without these talented individuals from around the globe, American biomedical research will not remain the world leader it is. If these policies are allowed to remain in place, the United States will no longer lead but will have to settle for the role of runner up.”

The complete ASCB statement can be found at www.ascb.org/society-news/ascb-calls-visa-freeze-reprehensible.
How Will Science Reopen? The Cost of Uncertainty

By Kevin Wilson

In the first few days of the COVID-19 quarantine, as many of us were figuring out where we would set up our “work from home” desk, it was unclear how long we would be home and what role public policy would play as our isolation came to an end. Would this be a two-week, unscheduled “vacation” before everyone went back to business as normal? As time went on, three things became clear: everyone was going to be at home longer than just two weeks, it’s going to be a long time before we return to “normal,” and the costs of closing and reopening science will be high.

In the middle of March, as the lab and office doors were banging shut, the House Appropriations Subcommittee on Labor, Health & Human Services, and Education had just completed its run-of-the-mill hearings on the FY21 budget requests for the U.S. National Institutes of Health (NIH), the Centers for Disease Control, and the National Labor Relations Board. After an almost two-month hiatus, the next hearing the subcommittee held was on the federal government’s response to COVID-19.

In that two-month period, much had changed in the world, including the discussion about federal funding. No longer was the discussion about how much more the NIH would receive this year than last year. Instead, the discussion is now about how much money the NIH will need right now to restart NIH-funded labs after they have been closed for an undetermined amount of time.

As a momentarily bipartisan Congress passed economic stimulus bills with price tags of trillions of dollars, it became clear that the cost of pushing the ON button to start America’s biomedical research labs will be substantial. A joint proposal by the Association of American Universities, the Association of Public & Land-grant Universities, the Association of American Medical Colleges, and the American Council on Education produced a proposal that included a request for $26 billion for all major federal research agencies. This would have meant $8.7 billion for the NIH. NIH Director Francis Collins, when asked at a Senate hearing, said the NIH would need $10 billion. And the Coalition for the Life Sciences, a coalition cofounded by the ASCB, sent a letter to Speaker of the House Nancy Pelosi proposing $34.5 billion in supplemental funding for NIH.
ASCB’s education journal, *CBE–Life Sciences Education (LSE)*, is your source for

- Tried and tested ideas for improving your teaching and mentoring
- Data-driven strategies for improving students’ learning, development, and success
- Evidence-based approaches for engaging students and overcoming everyday teaching challenges
- Valid and reliable assessment tools

Here are some highlights from the June 1, 2020, issue:

**The Tyranny of Content: “Content Coverage” as a Barrier to Evidence-Based Teaching Approaches and Ways to Overcome It**
Christina I. Petersen, Paul Baepler, Al Beitz, Paul Ching, Kristen S. Gorman, Cheryl L. Neudauer, William Rozaitis, J. D. Walker, and Deb Wingert

**The Academic Career Readiness Assessment: Clarifying Hiring and Training Expectations for Future Biomedical Life Sciences Faculty**
Laurence Clement, Jennie B. Dorman, and Richard McGee

**Developing the DELTA: Capturing Cultural Changes in Undergraduate Departments**
Courtney Ngai, Mary E. Pilgrim, Daniel L. Reinholz, Joel C. Corbo, and Gina M. Quan

**Diving into the Details: Constructing a Framework of Random Call Components**
Alex H. Waugh and Tessa C. Andrews

**Signaling Inclusivity in Undergraduate Biology Courses through Deliberate Framing of Genetics Topics Relevant to Gender Identity, Disability, and Race**
Karen G. Hales

Check out *LSE’s Evidence-based Teaching Guides* at https://lse.ascb.org.

Explore the *Anatomy of an Education Research Study* at http://www.ascb.org/annotations and learn about the design, conduct, interpretation, and presentation of education research.

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Career Navigator

How Scientific Trainees Can Navigate the Hurdles Imposed by COVID-19: An Interview with Sharon Milgram from NIH’s OITE

By Maria Fernanda Forni, Caitlyn Blake-Hedges, and Scott Wilkinson

We reached out to Sharon Milgram, the Director of the Office of Intramural Training & Education at the National Institutes of Health (NIH’s OITE), who has been responsible for webinars on stress management and resilience, for advice on how scientific trainees and their PIs can navigate the challenges of a pandemic. We interviewed Milgram on April 21, 2020, and have edited and compiled her insights below.

What are the main skills trainees will need during this pandemic, and how can we better develop those?

Milgram: It’s not only trainees, but the scientific community as a whole, that need to focus on wellness and resiliency in times of crisis. As researchers, understanding the science underlying COVID-19 helps us realize how dangerous this can be, making it an added stressor. This is an unprecedented event affecting humanity, and something so deep and traumatic as this disruption requires that we deal with it with our catastrophizing mind—a natural part of our minds with a tendency to expect the worst—in order to move forward. This is best achieved by taking care of ourselves and focusing on what we can control, while learning to let go of the things we can’t, before they fill our minds and lead to despair and paralysis.

As trainees, you are in a very delicate phase of your careers, and the more flexible and adaptable you can be now, the more successful you will be in the long term. As scientists, we are multifaceted people with a variety of skills, and either learning new skills or creatively reframing old ones can help us traverse this crisis. It is especially important to develop your communication skills as you learn to work with colleagues, supervisors, and collaborators in a new digital format. Maintaining a healthy and lively routine including virtual journal clubs, lab meetings, or discussions with collaborators is vital to stay in contact with science. These newly developed skills will continue to be an asset when you reenter your laboratories and in your future careers.

Coming back to work will not be going back to normal but rather a “new normal” that will take time to evolve. How can we better plan this reentry and make the transition swifter and more effective?

Milgram: Our first response to reopening may be to try to expedite the process so we can compensate for
the “lost time.” As scientists, we are used to quickly generating data to transform into papers and grants. However, one important aspect of a successful transition will be to let go of the words “swiftly, quickly, and fast” and replace them with “respectfully, safely, and kindly.” Life changed so rapidly overnight. We were thinking that we would see people the next day, and yet it’s been weeks or months. Many of us may have been sick or even hospitalized, may have dealt with taking care of our families, or are grieving the loss of loved ones. We will all be, to a lesser or greater extent, more fragile and vulnerable.

Another important aspect of this transition will be how leadership deals with this challenge. Different regions of the United States will surely have different reopening timelines. Every institution, department, and lab will have a different path through the struggle of coming back to work in our laboratories and offices. Ideally, this process will include a broad, open, and respectful discussion between those in charge on how to proceed in the safest way for everyone. Individually, we cannot have the mindset of thinking, “I’m first and going back to work is most important to me.” We will all have to compromise and go slowly, as there will be a lag time to catch up on experiments and produce results. People in leadership positions need to communicate these ideas to benefit trainees. More important than fast, we should think about well-planned!

Are there special issues for our international colleagues and friends and what can we do to help?

Milgram: They are dealing with this crisis on a whole new level. Everyone is having difficulties during this situation, but they are differentially affected. On top of the health concerns we all have to deal with, our international colleagues are worrying about their visas and the communities in their home countries. One of the most important yet overlooked aspects of how to navigate this harsh situation is: All Americans should exert their capacity to be good allies. It’s important to reach out to international students, advocate for policies that are welcoming, stop any bullying or harassment especially that caused by prejudice, and even take a bystander training course to learn how to intervene in situations that unfortunately might arise in this time of crisis. Being thoughtful about how we take care of our international colleagues is of the utmost importance for their well-being, as this builds strength in our community.

As trainees, we are also concerned about funding and fellowship deadlines. How should we tackle trying to publish and get funding right now?

Milgram: Be assured that discussions are happening at the highest of levels about how to support and protect our trainees. Circumstances may not be exactly as we hoped, but there is a collective desire within leadership to thoughtfully work on ways to help us through this situation. Leadership believes you, as trainees, are the future of science. The attitude of people in leadership roles, and whether they reach out in a positive manner, will highly impact trainees. Support comes in many flavors, such as extending fellowships, understanding alternative responses to manuscript reviews, and even, in the future, being understanding of this productivity gap when hiring. Trainees can also take a multitude of actions depending on their situation, so it’s best to reach out to your mentors, your program officers, or your scientific review officers for guidance.
The slowdown caused by the pandemic can be incredibly stressful for postdocs and graduate students looking toward their future career paths, so how can we set a better course of action so this can have as little impact as possible?

Milgram: For graduate students, you can wait out this crisis to avoid dealing with a bumpy hiring scenario. It is best to assess your situation and discuss with your mentor the best option for your career path. For industry and non-bench positions, one strategy could be highlighting the transferable skills acquired during this period. For trainees heading toward academia, apply for positions if the time is right and you have a prepared package. Everyone is aware of the current situation and the impact it has on work, so it is important to be clear about long-term goals and what you accomplished to get back to productivity. Simply state, “Here is where I am now and this is how I managed that.”

What are good mindfulness strategies to deal with the hiring freeze?

Milgram: Do not focus on the negatives, but be realistic and put your energy into yourself so that your ability to navigate a difficult job search can help you navigate any situation. Don’t define your success this year by your ability to get a job, but by all the things you have accomplished. Practice gratitude to enhance your ability to see the positive in the toughest times. Reach out to your community, because loneliness can impact your health and wellness. Hold on to the notion that we will get out of this together, and take care of yourself. When we come out on the other side, we will have our life intact and work will resume.

Lastly, how can we deal with long-term disruption, grief, and fears?

Milgram: Pay attention during the reentry and see your changed habits. What are you proud of, what are you satisfied with, and what can you let go of? Look toward the ways you communicate with loved ones and the way you work and interact with your colleagues. It’s important to realize how much people matter; in the long run, this impacts our ability to work. Hopefully, we will also learn that the people who clean our labs and the front-line workers are much more important than we might have previously thought, an insight that could lead to positive changes in policy.

And one last note of positivity: Milgram has been in science for a long time, including her work with trainee education, and believes that our generation will change science for the better. We will see positive things happen even in the hardest of times.

About the Authors

Maria Fernanda Forni is a Pew Latin American Postdoctoral Fellow in Valerie Horsley’s lab at Yale University. Caitlyn Blake-Hedges is a PhD candidate in Timothy Megraw’s lab at Florida State University. Scott Wilkinson is a Prostate Cancer Foundation Young Investigator and CRTA Postdoctoral Fellow in Adam Sowalsky’s lab at the National Cancer Institute.

One important aspect of a successful transition will be to let go of the words “swiftly, quickly, and fast” and replace them with “respectfully, safely, and kindly.”
DEAR LABBY

I am a sixth-year graduate student whose research was suddenly stopped by closure of the university due to the COVID-19 pandemic, although personally I have not been affected by it. I need at least six months of full-time work to complete my thesis. However, the university is still closed and I hear rumors that it will open on a shift basis, which will not allow me to complete my work. This will also impact my ability to apply for a postdoctoral position, so I am very worried about my future. What should I do?

—Anxious

DEAR ANXIOUS: We are all in this unusual situation together, and as Labby writes these words in late May most of us don’t know when we will be able to reengage in full-time research, or what the future holds. Since this is a global tragedy; we will all make accommodations. This is what Labby tells students about how to handle the situation: It is very difficult to have perspective about this, but many older scientists have dealt successfully with previous disruptions (e.g., World War II, 9/11). Stay the course and look forward.

Life will eventually return to a new normal, where we can all reengage in unfettered research. For now, think about your long-term research goals; these may become less ambitious because of the circumstances—everyone will understand this. Have a Zoom meeting to ensure you and your committee are in agreement. Then carefully design the short- and long-term experiments, with all the controls, that will be most critical to your project. Carefully plan your time in the lab to be most productive, rather than deciding what to do when you get there. If your research lab reopens with shifts, make use of the time between them to reevaluate the experiments you have done and plan to do. Working in shifts to maintain social distancing provides a wonderful opportunity for collaborative science where colleagues might complete your experiments; you could help them in the same way if their shift prevents their completing necessary work that goes beyond the allotted shift time. Keeping you, your colleagues, and staffers safe is paramount.

At the same time, read or reread papers related to your project and assemble the information into a review that can be the foundation for the introduction to your thesis. Graduate students in Labby’s lab have often wished they had written their thesis introduction earlier as it would have better guided their research. The current circumstances can help you achieve this!

This interruption will inevitably delay completion of research projects. Time to graduate for those impacted by the pandemic will be longer, and everyone...
will understand this. As of now, we don’t know if the country will be subject to a second wave of infections, which could delay research yet further. If this happens, what is expected of graduate students certainly will be reevaluated.

As life returns to the new normal, you will be able to embrace an exciting postdoctoral experience! Now is the time to read widely to identify the best labs where you can advance your career. Prospective PIs will understand the consequences of reduced research and potentially delayed publications, so in your application include a detailed summary of what you have accomplished, and plan to do, before you graduate.

This pandemic is something none of us in three generations has ever experienced before. The uncertainty that comes with it is very unsettling, especially if compounded by tragic personal loss or the terrible hardship that many are enduring. But we are lucky to live in this age. After the polio outbreak of 1916, it took 39 years before the Salk vaccine was available. Now we can hope for a vaccine within a year or two. You will be able to finish your PhD, and seek a postdoctoral position, albeit perhaps on a slower schedule. It is a good time to reflect on the great advances in science that occurred since 1916, and use that history to rekindle your enthusiasm for the privilege of doing research for the betterment of humankind.

Stay safe!

—Labby
Casper Hoogenraad, Vice President and the Head of Neuroscience Research at Genentech in South San Francisco, will become the new industry representative on the ASCB Council in 2021. He is quick to remind you, however, that he is first and foremost a basic scientist and cell biologist.

In 2017 Hoogenraad joined Genentech where he continues his basic research and hopes to leverage the company’s knowledge in drug discovery to translate his basic research findings into potential therapies for neurodegenerative disorders such as Alzheimer’s disease, Parkinson’s disease, and multiple sclerosis. He is also a tenured professor of cell biology at Utrecht University in The Netherlands who recognizes that strong collaborations between basic research and industry are crucial to translating groundbreaking science into transformative therapeutics for the benefit of patients.

“The biotech industry is largely focused on developing medicines for people with serious and life-threatening diseases, but there is so much in basic science that is needed in this process,” he said. “The fundamental discoveries made by scientists both in academia and biotech have been essential to discover and develop new drugs.”

Hoogenraad’s own research sits at the crossroads of cell biology and neuroscience, specifically focused on mechanisms underlying cytoskeleton dynamics and intracellular trafficking that support the development and function of brain cells. “The brain comprises many different cell types, and there is still so much we can discover about their cellular functions and interactions,” he said.

For example, he’s currently exploring how brain cells found in people with Alzheimer’s disease differ from normal brain cells and determining which basic biological processes underlie the initial stages of neurodegeneration. He’s also looking into the interactions of neurons and glia cells of the brain to see how they contribute to neurodegenerative diseases, hoping to one day image them in more physiologically relevant settings, such as in animal models and human brain organoids.

Hoogenraad joined ASCB when he was a postdoctoral fellow at the Massachusetts Institute of Technology nearly 20 years ago. “Before I started my PhD, I was trained in biochemistry and molecular biology,” he said. “The ASCB meeting was always so fascinating and opened my eyes to the world of cell biology. I learned so much.”

Now he says he hopes to make an even greater impact as the Council industry representative. Hoogenraad stresses the importance of coordination between basic science and industry. By working together, he said, “scientists can do what they do best—focus on basic research, discovery, and innovation—and industry can do what it does best: develop medicines.” In that sense, Genentech is the prime example that this concept works.

“The company has long rivaled the world’s leading academic centers in commitment to basic research with the singular goal of making transformative drugs,” he added. As a Council member, he will be working to create more opportunities for basic science researchers to work with the biotech industry.

In addition, the mentorship of young scientists will remain another important area of focus for Hoogenraad.
Through his laboratory at Genentech, Hoogenraad offers a postdoctoral mentoring program where those engaged in genetics and biochemical and biophysical investigations can conduct academic research while learning about the drug development process.

Although he’s been studying and working in the United States for many years, Hoogenraad says he views himself as a “typically” Dutch. “I like riding bicycles; I love flowers, especially tulips; and I like cheese,” he laughed.

If you’re interested in learning more about Casper Hoogenraad’s research, you can check out this Genentech podcast about neurons featuring a conversation with him: www.gene.com/stories/the-polarizing-world-of-neurons.

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LETTER

Misinformation in the Age of COVID-19: What Are Our Responsibilities as Scientists?

To the Cell Biology Community:

We are facing a serious issue in our society: the avalanche of misinformation with which the public is bombarded. Currently we are facing the worst pandemic in our lifetimes, COVID-19. As this virus spreads around the world, spreading faster is the flood of misinformation. Some of the misinformation originates from fringe groups with radical beliefs and some from people, organizations, and politicians looking for advantages in a crisis.

As the world finds itself embroiled in an “infodemic,” the actions of governments and social media organizations have not been sufficient to stop the spread of misinformation. Much of this misinformation is falsely presented as being embraced by the scientific community. This can range from incorrect and nonfactual explanations of the origins of the COVID-19 virus to ineffective and potentially harmful treatments for afflicted individuals. There are significant issues that people are struggling with, including constantly dealing with sickness and death, a lack of healthcare, increased financial hardship, and a general level of stress during uncertain events. It is understandable that these pseudo-news stories are appealing because they provide immediate hope when sometimes there is none.

In a recent World View article in Nature,1 Timothy Caulfield strongly condemns the misinformation that is running rampant and gives the scientific community places to start to curb the tide. He advocates that more researchers become active in the public fight against misinformation. He singles out the practice of “scienceploitation,” where agenda-driven misinformation and products are peddled by snake-oil salesmen using false claims of approval by government bodies, inappropriately accrediting valid studies, or just downright lying. He appeals to our moral duty as scientists to point out the misinformation and combat it with scientific information that has been rigorously tested. He proposes a “herd immunity” approach of scientists storming social media to protect the public from the pseudoscience and lies.

As part of the cell biology community, I do not disagree with this approach, but find myself overwhelmed by providing scientific information to dishonest actors. These “misinformation trolls” are not interested
in having an honest conversation or increasing their understanding, but are pushing an agenda that is largely anti-science. Advocates of extreme fringe views have built their messages on a foundation of a general distrust of academia and science. When addressing these trolls, in the back and forth, I find myself falling down a rabbit hole of arguments. Their arguments usually boil down to science is not fact, that we are too arrogant to accept other thoughts, and that we are all biased so that we can obtain grant funding. So for every factual tweet or comment on a post, there are five or six comments of misinformation. In trying to address these misinformation trolls, I find myself giving legitimacy to their arguments by giving their lies my attention, and I wonder where the balance lies.

As scientists, we daily seek information and make decisions based on scientific observation, methods, and experimentation. We also police ourselves, with peer review being a strong pillar in the process of disseminating scientific information. Scientific peer review has served the globe for several generations and, while not perfect, has led to unbelievable discoveries that have shaped our society. The peer review process is also a target that anti-vaccination advocates and climate change deniers point to as evidence of our bias. The perceived deficiency of peer review is a talking point that the misinformation trolls routinely use to combat scientific evidence. In these discussions, I find myself with a lack of my own talking points. As scientists, we are genuine in our beliefs and if there is evidence that follows the scientific method, then we would lend credibility to it. However, I am not skilled in debating dishonest actors and my training usually leaves me befuddled on how to respond. Further fostering a sense of futility are the results from the 2012 psychological study by Stephan Lewandowsky, which showed that misinformation persists in individuals even when they are presented with the correct information. Specifically, this study showed that if information is in line with your prior beliefs and makes a plausible story, you are more likely to believe and promote the information even though you are aware that it is incorrect.

So, my question to the cell biology community is: Are we being asked to fight an uphill, unwinnable battle on social media? Not so! Lewandowsky and colleagues offer some guidance about dealing with the indefatigable nature of misinformation. They suggest several approaches including providing people with a narrative that replaces the gap left by the false information, focusing your argument on the facts you want to highlight rather than correcting the myths, making the information you want people to understand simple and brief, always considering your audience and the beliefs they are likely to hold, and finally strengthening your message through repetition. As cell biologists in a time of a worldwide crisis, we are defined by the Peter Parker principle, “from great power comes great responsibility,” and as advocates on social media, it is ever important to know how to effectively tailor our message to combat the ever-present threat of misinformation.

Blake Riggs
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References


It was with great sadness that the cell biology community learned of the passing of Kathryn Howell, who died April 10, 2020, of COVID-19, at the age of 80.

Kathryn’s scientific accomplishments were wide ranging, including major contributions to the development of novel affinity-based methods for isolating subcellular organelles, which allowed proteomic analyses of organellar components. Kathryn also pioneered the advance of new assays to reconstitute in vitro vesicle budding from the trans-Golgi network (TGN) and endosomal fusion events, and used these assays to dissect sub-processes and identify novel regulatory molecules. Some of Kathryn’s most influential work was her three-dimensional analyses of the TGN and the Golgi, as it allowed the formulation and testing of different models of cargo passage and sorting through these compartments. Kathryn published outstanding work in all of these areas, and the impact of her findings is reflected in the many citations of her papers over the years. Kathryn was an active collaborator and maintained long-term associations with many scientists, including Richard McIntosh, John Caldwell, and John Yates, III. Kathryn’s ability to combine molecular, cell biological, tomographic, and proteomic approaches to address a scientific enigma was the most obvious and influential hallmark of her work.

Kathryn obtained a PhD in 1971 from Rutgers University and initiated her postdoctoral training at Rockefeller University with the Nobel Prize winner George Palade in 1972. She subsequently moved with the Palade group to Yale University in 1975. After completing her postdoctoral training, she was promoted to instructor and in 1979 to assistant professor of cell biology at Yale. After only a year in that position, Kathryn was recruited to the European Molecular Biology Laboratory (EMBL) in 1980 as a group leader in the Cell Biology Unit. She was a vibrant member of the EMBL community until 1988, when she accepted a position at the University of Colorado and moved to Denver. In Denver Kathryn rose through the ranks, becoming a full professor in 1996. Kathryn retired from that position in 2012.

Kathryn was an elected Fellow of the American Association for the Advancement of Science, an active member of the ASCB Council, and the inaugural chair of the ASCB Image & Video Library Committee. She was on numerous scientific advisory and editorial boards, and her expertise and fairness were well known at the many review panels for key funding agencies such as the National Institutes of Health and the National Science Foundation.

While making fundamental contributions to science, Kathryn’s other major success was to nurture the next
In addition to her research excellence, alumni of Kathryn’s lab and her many colleagues remember Kathryn for much more than science. She was fun and kind and always eager to share her passion for Inuit Eskimo art, classical music, and Chihuly glass. Remembrances of Kathryn often stress her directness and rigor (often initially extremely intimidating) and her eagerness to help, as well as her love of good food and drink!

She will be missed by all who knew her.

About the Author
Elizabeth Sztul is professor of Cell, Developmental, and Integrative Biology at the University of Alabama, Birmingham.

in memoriam
Theodore Peters, Jr., Clinical Chemist

By Mary Spiro

Theodore Peters, Jr., died at his home in Cooperstown, NY, on March 19. He was 97. Peters was a research biochemist at Mary Imogene Bassett Hospital and was best known for his life’s work on the structure and function of serum albumin. He attended the Massachusetts Institute of Technology, served in the Navy during World War II, and ultimately earned a doctorate in biological chemistry from Harvard University. He later held faculty positions at the University of Pennsylvania Medical School and Harvard Medical School, interrupted by another two years of naval service during the Korean War. Peters was a longtime member of ASCB, and upon retirement became an emeritus member. He also was deeply involved with the American Association for Clinical Chemistry, serving as president in 1988. Peters served as chairman of the Food and Drug Administration Clinical Chemistry Classification Panel and on other panels with the National Bureau of Standards (now National Institute of Standards and Technology) and the Committee on Blood Fractionation. A more detailed obituary may be found at https://bit.ly/3dcn9ca.
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**Matching Gift Lifts up Support for Günter Blobel Early Career Award**

In my last column I mentioned the newly renamed Günter Blobel Early Career Award. In May Peter Walter challenged members to donate to the award and he offered to match up to $10,000! I am pleased to say that a number of donors (indicated by asterisks in the list at left) met and exceeded his challenge, bringing in a total of over $30,000. We still welcome donations that will help us maintain this important award that recognizes early career faculty in cell biology.

I am grateful for all of our donors, volunteers, and members. By being part of the largest society of cell biologists, you help to advance the profession. ASCB has been working hard to keep you connected in these turbulent times, from offering webinars and other virtual programming to extending the memberships of graduate students and postdocs through June. We are here for you.

Thank you for your support!

Erika Shugart, CEO