

SCIENCE EDITOR



A PUBLICATION OF THE COUNCIL OF SCIENCE EDITORS

**FOCUS ON CAREERS IN
SCIENTIFIC EDITING &
PUBLISHING**

IN THIS ISSUE:

HIGHLIGHTS FROM THE 2017 AAAS ANNUAL MEETING
CSE 2017 KEYNOTE SPEAKER MARY CLAIRE KING: PERHAPS IN MY NEXT LIFE
BOOK REVIEW: *GRUNT: THE CURIOUS SCIENCE OF HUMANS AT WAR*



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On the cover: Retina from a hibernating 12-lined ground squirrel with small molecule metabolic markers superimposed on transmission electron microscopy. The degenerated outer segments of photoreceptors are at the top with the ganglion cells at the bottom of the image. Image credit: Bryan William Jones, PhD.



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Connect the Science: Careers with a Mission

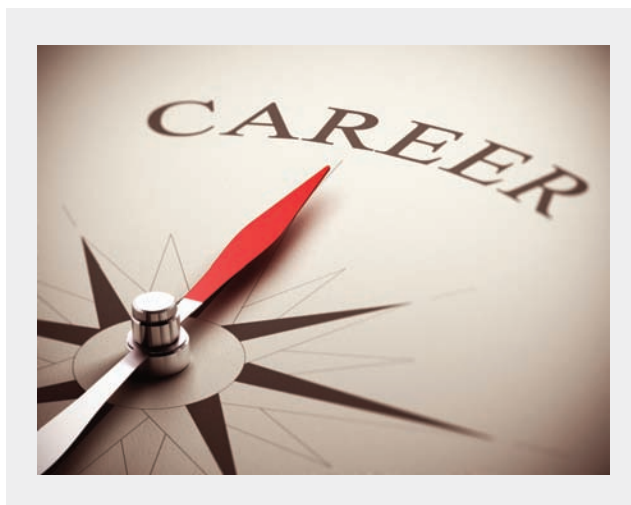
Tracey A DePellegrin

Scholarly publishing and editing reflects an ecosystem as diverse as the research we help to communicate. This issue of *Science Editor* features a focus on careers centered on roles in that scientific ecosystem. While it's easy to perform an internet search and find generic descriptions of jobs, here we offer a glimpse into the firsthand experiences of our colleagues. You'll hear their voices through their words, and without exception each has a unique, fascinating story to tell.

CSE's President, Sarah Tegen, Vice President Global Editorial & Author Services at the American Chemical Society (ACS), reflects a diverse career in scientific publishing. Her team oversees strategic, financial, and editorial operations for over 50 ACS journals with more than 500 scientific editors around the globe. She started her career in scholarly publishing at *PNAS*, where she solicited content in the physical sciences and social sciences and edited the journal's front matter. With an undergraduate degree in biology (from the Massachusetts Institute of Technology) and a PhD in molecular and cell biology (from the University of California, Berkeley), stepping away from the bench took a leap of faith, but Sarah knew she wanted to pursue a career that combined her love of science and meeting people. Combining her scientific expertise and editorial background, Sarah emerged as a leader in our field.

In this issue, we also have the second in our new series called "An Editor's Perspective." Dr. Joseph Loscalzo reflects on his twelve years as Editor-in-Chief of *Circulation*, published by the American Heart Association. You'll also learn more about editorial roles at *Circulation* as Pam Goldberg Smith, Editorial Assistant, presents a first-person piece about the transition to working at home but still discovering colleagues around the world. She vividly discusses the winding path that lead her to making an impact not just at the journal but also in the field of science.

This issue also features a series of illuminating interviews. Did you ever wonder what a consultant does all day? Michael



Clarke of Clarke Consulting offers a keen observation: "Like just about everyone else in the industry, I wound up in STM and scholarly publishing by accident." He talks about working around smart, talented, and dedicated people and the ways in which each organization—regardless of outward appearance—has unique circumstances, culture, and politics. He also makes a few predictions about scholarly publishing's future.

We hear from Maisha Miles, Managing Editor at *mBio*, published by the American Society for Microbiology (ASM). Maisha talks about her experiences working at the American Geophysical Union (AGU) as well as the Society for Neuroscience (SfN). Her career progression and learning experiences include becoming a Certified Association Executive (CAE), and CSE's role in providing exposure to the world of scholarly publishing.

We also have pieces from proofreaders, journal managers, editorial coordinators, executive editors, medical editors, and a senior academic editor (who is also a practicing scientist).

From our annual meeting, this issue features a delightful piece on Dr. Mary Claire King's Keynote Address. Peter Olson, ELS, Senior Copyediting Coordinator at Sheridan Journal Services, goes beyond summarizing Dr. King's talk, and gives us insight into King's own career path that led her to the discovery and identification of the breast cancer gene *BRCA1*. We read King's elucidations on the "three classes of challenges" shared by scientists and journal editors, and about her passion not just for science but also for language, peer review, and maintaining quality and integrity in scientific publishing.

TRACEY A DEPELLEGRIN is the Editor-in-Chief of *Science Editor* and Executive Editor, Genetics Society of America Journals and Executive Director, Genetics Society of America.

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Have you had an observation, conversation, or finding that changed your perspective, process, or policy related to editing, publishing, or the support of your constituents and communities? We at *Science Editor* welcome your story. We intend to share these in paragraph or testimonial format, so please submit your ideas or articles at scienceeditor@councilscienceeditors.org.

As part of our mission, the Council of Science Editors “aims to improve communication in the sciences by educating authors, editors, and publishers.” We’re excited to announce our upcoming issue on Peer Review. Stay tuned for details and deadlines.

Interview with Michael Clarke, Consultant

Tracey A DePellegrin

Name: Michael Clarke

Title: President

Company: Clarke & Company

Number of years in current position: 5

TD: You're well known in the publishing sector. How did you end up in your role as a consultant?

MC: Like just about everyone else in the industry, I wound up in STM and scholarly publishing by accident. I was in graduate school at the University of Chicago and knew I was interested in publishing. I was thinking about moving to New York, but before I did I fortunately stumbled into a position at the University of Chicago Press (UCP), which in those days was far ahead in terms of electronic publishing tools and technologies. UCP gave me an invaluable grounding in digital publishing that I still draw from today, though of course the technology has moved on. The leap into consulting was more recent, though it was a transition that I had been contemplating for some time. Since founding the firm nearly 5 years ago with my colleague Pam Harley, I have not looked back. It has been a rewarding experience.

TD: What's a typical day like for you?

MC: I walk to the office most days unless I am traveling to meet with clients or to an industry event. I usually start the day with correspondence. Most days I have several phone calls. I often read about the death of the phone call but at our firm it is alive and well as I spend several hours a day on the phone. These are typically client calls, research interviews, internal calls with remote colleagues, or calls related to industry service (I am often on committees or boards for CSE and other associations).

Often I have lunch or coffee with clients who are local (I live in DC) or in town for meetings or events. Most days I spend part of the day working on either a proposal for new work or a deliverable for an existing client. And just about every day I read—a lot. Most of my reading is research related to specific client engagements, but I also read to keep current with developments in the information industry writ large.



Michael Clarke

TD: What are the most interesting parts of your job?

MC: Meeting so many interesting people. This industry has a surfeit of smart and talented people doing such interesting things. From our clients, my colleagues, and the many researchers and librarians we speak with regularly, I am surrounded by interesting people and fierce intellects. We have a saying at the firm whenever we walk into a client meeting, board discussion, or other similar situation: Assume you are the dumbest person in the room, because you are probably are.

TD: What are the most challenging aspects?

MC: There is a lot of juggling. We typically have somewhere in the vicinity of 20–25 active engagements at any time. That is a lot to keep track of. In addition to all of the client assignments, my colleagues and I are quite active in the industry. For example, I serve on the board of Silverchair Information Systems and am active in a half-dozen industry associations. I also write for the Scholarly Kitchen, produce the Scholarly Kitchen Podcast, and speak three or four times a year at industry events. Beyond that there is managing

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the firm itself—keeping track of finances, marketing, invoicing, and other administrative tasks. We have also begun developing our own events—the first of these was an executive seminar for societies on working with commercial partners, held earlier this summer. I rely heavily on software and my colleagues to make sure nothing slips through the cracks.

TD: What was the biggest surprise to you about being a consultant in this industry?

MC: How different each organization is. Even organizations that appear outwardly similar can have unique circumstances, cultures, and politics. Every assignment with a new client starts with learning about the organization.

TD: What particular skills are critical to be successful in your role?

MC: There are two. The first is being able to communicate well. This is fundamental to my job. This includes proposals, reports, emails, oral presentations, and many other kinds of communication. I often think of Edward Tufte's analysis of the failure of communication in NASA presentations leading to the *Challenger* shuttle disaster. While the stakes for most of our presentations are much lower, being able to write clearly and concisely is nonetheless mission critical.

The second vital skill is the ability to continue learning. This is a meta-skill, in that it enables learning new skills continually. People can sometimes get complacent and neglect what our clients involved in education call "lifelong learning." As a consultant, such neglect is not an option as each assignment brings new challenges. I learn something new with every engagement—this is an aspect of my work that I particularly treasure.

TD: What are the biggest changes you've seen in the publishing industry since you started?

MC: The initial transition to digital in the STM & scholarly sector of the publishing industry was remarkably smooth relative to many other industries (e.g., news, music, magazines, trade books). Scholarly publishers were far ahead of just about any other industry in converting content to structured information (via SGML and later XML), developing digital workflows, adopting new technologies and tools, and so forth. Publishers were also (critically) able to transition from print subscriptions to site licenses without losing a beat. This was largely because the Internet, and the explosion in electronic media unleashed by Tim Berners Lee and the World

Wide Web, originated with the research community. Research universities and government laboratories were early adopters of the Internet, and the Web was designed explicitly for scientific communication. The challenge publishers are now facing is that technological developments are being driven by consumer-facing technology companies whose platforms were not designed for scholarly information or for scientific and scholarly use cases.

TD: Do you have any predictions for the future?

MC: We have reached peak subscription (Jan Velterop coined the term during an SSP panel I moderated a few years ago). I subsequently wrote a piece in the Scholarly Kitchen on this topic. What I mean by this is that library budgets are stagnant and there are no new markets left—publishers have already sold into all the major research institutes in China, India, South American, Eastern Europe, and the Middle East. The Big Deal is a mature product. This means that publishers must come up with new sources of revenue. Open access (OA) is part of this equation, but the OA market has not grown as fast as many predicted. This would ordinarily lead to a spate of acquisitions, but there are not many independent publishers left other than societies, and they are not selling their publications (though they are increasingly licensing them).

This environment is likely to put a focus on new product development and acquisitions outside the traditional markets for publishers. And indeed we are already seeing this happen with Wiley's acquisition of Atypon, Elsevier's acquisition of SSRN and bepress, and Taylor and Francis' acquisition of colwiz. While not publishers, Sheridan's acquisition of PubFactory and Clarivate's acquisition of Publons are likewise acquisitions in the same vein.

TD: When you were a kid, could you have imagined yourself doing this job?

MC: My father was a consultant and taught computer science as a college professor, so working as a consultant in the scientific and scholarly sector is the apple falling not far from the tree.

TD: If you had to give one piece of advice to someone who's interested in working as a consultant or in the scholarly publishing industry, what would it be?

MC: Don't be afraid to move around and try different roles at different organizations. You learn a lot that way and you may not know what role you are most suited to until you try a few on for size. A second

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piece of advice is to find a mentor (whether formal or informal)—someone to bounce career ideas off of and who knows you, and your circumstances, well enough to be able to offer more specific advice. Mentors can also be very helpful about opening new doors for you as your career advances.

TD: Can you share a favorite story about one of your clients or your job?

MC: One of our recurring assignments is helping the National Academy of Sciences organize a biannual meeting on the scientific journal. Through this engagement, we have had conversations with numerous NAS fellows, a Nobel laureate, the inventor of the graphical user interface, one of the architects of the Internet, and a great many other researchers and technologists doing truly extraordinary work.

Interview with Maisha Miles, Managing Editor

Dana Compton

As *mBio*'s managing editor, Maisha Miles is the backbone of the journal's editorial office. Maisha not only oversees day-to-day operations and manages the peer-review process and editorial staff but also functions as the editor-in-chief's "right hand," developing and implementing content strategy, upholding editorial policy, and creating and maintaining productive relationships with authors, reviewers, and editors.

Maisha earned a liberal arts degree at Virginia Tech, with concentrations in English, communications, and Black studies. She loved to read and write poetry and short stories and aspired to a career in magazine publishing in New York City. After graduation, reality hit and Maisha faced student loan obligations that brought her home to Washington, DC, searching for a job she hoped with some publishing aspect that she could translate into a long-term career. So how did she end up at the helm of a successful open-access journal? I had the opportunity to speak with Maisha about her career path, the highs and lows she has encountered, and her advice for success.

DC: How did your career path lead you to where you are today?

MM: I found a position as a receptionist at a radiation protection company that published manuals but quickly found that what editing work was available would not become a part of my responsibilities. I began searching for an editing job and applied to a copy editor position at the American Geophysical Union (AGU). AGU didn't think I was qualified for the editor job but offered me a publications secretary position, which I accepted. This was my first exposure to scientific publishing; I had no idea this industry existed. I wasn't a science major and didn't really read journals. My role was primarily administrative: data entry, collecting copyright forms, etc.

When an assistant copyediting training position opened up, I was able to get "editor" in my title, but it still wasn't quite what I wanted to do. During my time at AGU, I realized that a lot went into publishing manuscripts. AGU was moving into online publishing and electronic copyediting, and I was asked to train copy editors on editing in Word. I became involved in meetings about online processes and systems. I found that I was more interested in these than the actual copyediting. I really took to the "how" of publishing.



Maisha Miles

I also created a manual for the copy editors I trained. This reinforced my interest in how things are done and where the connections lie.

Eventually I became a senior copy editor for *G-Cubed*, AGU's first successful online-only journal. This role was a little different from the traditional senior copy editor role in that I communicated with the editor on production-related concerns as well. Regardless, after a little over 8 years, I knew that my upward mobility was limited at AGU and, if I wanted more challenges, I'd need to move on.

I interviewed for an assistant managing editor position at the Society for Neuroscience (SfN) that was a bit of a reach, since I didn't have any peer-review experience. However, because I was working on a number of forward-thinking projects at AGU and could demonstrate that I was a quick learner, the managing editor gave me a shot. My position at SfN solidified my desire to learn more about systems and processes: how things work, why they work, how things connect.

I gained well-rounded knowledge in my 5+ years at SfN, including dealing with an editorial board, experience working on a high-impact journal, understanding what's important to authors, reviewers, and readers, and so forth. These skills prepared me for

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my current role at American Society for Microbiology (ASM), where I was brought on board as the managing editor specifically for *mBio*'s launch in 2009.

DC: What's a typical day like for you?

MM: When I came on board, the heavy focus was the launch of *mBio*. Once it was up and running, my role became about managing the journal. At first, it was just me and an assistant managing editor for *mBio*, although ASM has a larger journals program which provided a support team. In the very beginning, I was pushing manuscripts through submission, reviewing proofs, etc.

But as volume increased and pressures increased, I knew I had to step out of the day-to-day role. Now I see myself as a real partner with the editor-in-chief, helping him realize his vision of the journal and what is important to him and the scientists, in keeping with the vision of the society. I keep an eye on where things are, but I do not handle day-to-day tasks. I rely a lot on reporting, and I make sure *mBio* is in line with what other ASM journals are doing.

DC: What are the top three things you enjoy about your job?

MM: First, system and process improvements. I like figuring out how I can make things happen more efficiently and effectively.

Second, reports. This all ties into improvement; reports are the evaluation component. Data show what needs improvement.

And finally, working with my fabulous two-person team, sharing information with them—it's very exciting.

DC: What are the most challenging aspects?

MM: ASM already had established processes and procedures when I came in, but I knew *mBio* was going to be something different. I had to put my head down and charge forward in questioning established policies, asking what the priorities are, and why we are doing certain things in certain ways. I had to ensure priorities like rapid time to publication were top of mind. I had to find my voice and speak up for the journal. I always had the support of my director and the EIC, but I really had to prove myself to myself.

DC: What has been the biggest surprise to you about your career?

MM: I don't see as many people of color in the industry as I would have hoped. When I started, I could count the number of African Americans on one hand at most industry meetings. I've seen some growth in diversity

but not as much as I'd like. It always helps to see people who look like you to know there is a place for you.

DC: What particular skills are critical to be successful in your role?

MM: Soft skills. For example, understanding the language of your boss or your director: What's important to them? What pressures are they facing? What are their priorities? How can you help support them?

I'm also growing more interested in the association at large and how it works. To that end, I studied for (and passed!) the Certified Association Executive (CAE) exam, which tests a person's preparedness to be an executive director. I learned about how associations are run, how they are governed, how they are marketed. The online exam-preparation class I took was essentially a boot camp in association management. It's important to understand your role in the larger society and your organization's goals. This helps you realize the value of your role to the society, how it fits into the mission, and what the members need and want.

And attending the CSE meeting was crucial, along with other industry meetings. CSE was the perfect gateway to get a sense of fundamentals and foundations and to understand scholarly publishing as a whole. Absorbing information, reading, and continually learning by following up on things you don't know or understand are critical skills.

DC: What are the biggest changes you've seen in the industry since you started?

MM: Definitely an increased focus on technology, understanding data, and how technologies talk to each other (e.g., that what comes in during submission can impact everything down the line, to what an author eventually sees in PubMed), and understanding how all of this can be used to advance the science.

DC: Do you have any predictions for the future?

MM: I don't know! There's so much talk of open data, preprints, and peer review no longer being centralized with a publisher. How will this impact the publisher's role and the work we do?

DC: When you were a kid, could you have imagined yourself doing this job?

MM: No, not at all! I hardly connected research and publishing. When people ask what I do, it sounds impressive—I often get a "WOW!" Then I go on to explain what I actually do and that the role we play is

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so critical to the researcher. But it's an industry that is largely invisible to the public.

DC: If you had to give one piece of advice to someone who's interested in working as a managing editor or in the scholarly publishing industry, what would it be?

MM: Take advantage of any opportunity you get. If you're interested in peer review but what is available is a production position, take the opportunity and leverage it into other options. I started as a publications secretary wanting to become an editor.

If I hadn't taken that position, I don't know if I would have followed this path. Studying for the CAE exam also really elevated my thinking for *mBio*. Some of the key principles are to scan the environment, plan and implement, and evaluate. These principles shape the way I now do my work:

- Scan: What is important to readers and editors?
- Plan and implement: Make it happen (this is the part I love to do).
- Evaluate: How well does this work, and how can I change and improve it?

Patty Baskin, Executive Editor: A Journal Is Her Business

Andrea R Rahkola

Patty Baskin is the executive editor of the *Neurology* journals, which consist of two renowned print journals, two open-access online-only sub-specialty journals, three international editions, two curated collection blogs, and a highly successful podcast. Patty undertook management of *Neurology* in 2007. The extensive array of related publications and products were all established under the innovative leadership of Baskin in the executive editor role.

Executive editor positions have increased in prevalence over the last 6 to 7 years. An executive editor is more than a managing editor (Figure 1), with the responsibility of directing one or more journals and applying high-level thinking—strategic planning and other “big-picture” aspects (rather than day-to-day publishing operations). Further, it is typically not the function of the executive editor to decide a journal’s content but to act as an adjunct to the editor-in-chief whose primary responsibility is content (Figure 1). Baskin describes the position as the hub of a wheel—the key contact for everyone contributing to the publications. This central location allows Baskin to set the tone for the journals’ business: collaborating with editors to help establish a journal’s vision and mission, and strategizing how to reach those goals. It is her job to use strategic planning to promote growth (e.g., launching sub-specialty journals), to keep up with the changing landscape in scientific publishing (e.g., open access), and to establish and uphold the journals’ policies. At its core, the business of the journals is the foremost responsibility of the executive editor position.

The “business” of a journal covers many duties, including (but not limited to) upholding policy; strategic planning and decisions, maintaining scientific integrity; solving problems; and staying at the forefront of publication trends and innovation, leadership, and team building. It is the editorial team the executive editor builds and leads that conducts the day-to-day operations of publication and ensures excellence in the resulting product. “Team building for an executive editor is really important,” Baskin stresses. “You can have the vision, you can outline the plans, but when it comes to execution . . . the team are the people who do it.” This role requires inspiring leadership. A passionate, inviting, and encouraging leader who guides and mentors staff and editors alike will ensure the development of a high-quality product by the excellence he or she inspires. The



Patty Baskin

crucial component to all these responsibilities is, unarguably, communication.

Communication among editors, editorial staff, vendors, the host or partnering society, and the publishing industry is the expertise of an executive editor. In Baskin’s opinion, the most essential communication tool is networking. The established network of an executive editor allows him or her to keep up with publishing trends. In the competitive environment of scientific publishing, networking provides a necessary assist to keeping a journal at the forefront and maintaining one’s standing as a professional. Baskin identifies networking as the means to a wealth of opportunities: the ability to reach out to others with problems, to learn alongside others, to receive advice, to advance your career, and to watch and stay ahead of journal trends. Networking is important leading up to the position of executive editor and even more so once in the position. “It’s not suddenly that you get to executive editor and then you start checking out what is going on; you’ve been doing that for years and you’ve been learning,” says Baskin. From talking and problem solving with direct colleagues to attending conferences specific to science publishing, many networking opportunities are available at every stage of a career, allowing anyone aspiring to

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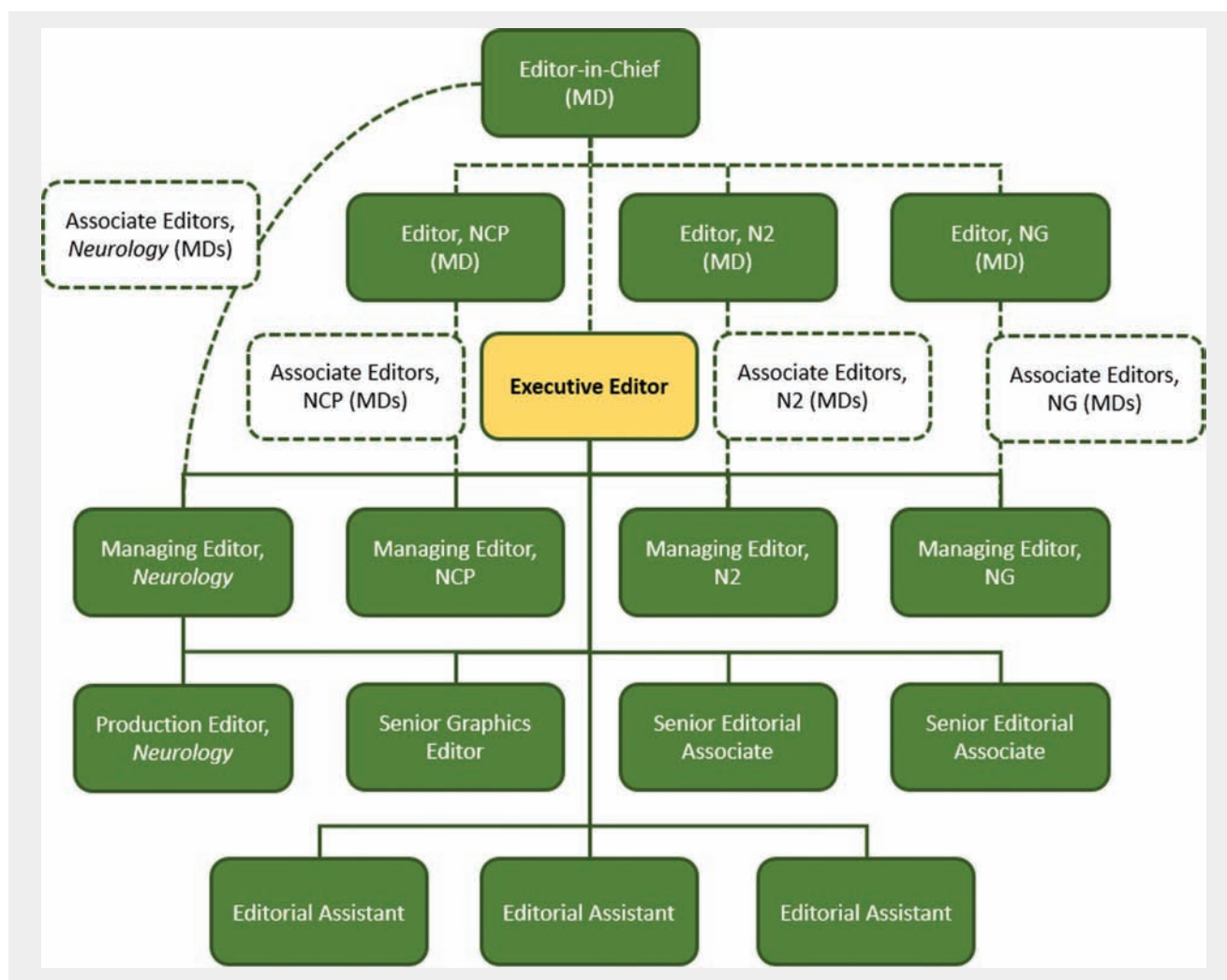


Figure 1. Flowchart of the executive editor's central position at *Neurology*. Dashed lines = directions flow both ways (e.g., from the managing editor to the associate editors; from the executive editor to the editors; etc.); solid lines = directions flow down from the executive editor.

be an executive editor to begin taking appropriate steps immediately.

Education is typically the start of any career trajectory in scientific publishing. Baskin stepped into publishing after obtaining a bachelor of science in biology and physiology and a master of science in genetics from the University of California, Berkeley. After working several years in scientific laboratories, she began “pick-up” work in editing, writing, and preparing papers for publication in specific journals, which solidified her interest in pursuing a career in scientific publishing. Although each publishing professional's career path is unique, many individuals have received a bachelor's degree in English, journalism, or communications. Baskin views her scientific education background as insider knowledge. She is familiar with the scientific academic environment and understands

the perspectives of submitting authors. Further, she feels comfortable working with scientists and is not intimidated by their academic achievements. A science background, in Baskin's words, “increases the credibility that I have with scientists right away, because they know that I'm not naïve about science and science research.” While helpful, a science background is not necessary to pursue a career in scientific publishing. In fact, most scientific publishing professionals learn on the job and gain confidence in working with highly credentialed authors and editors.

Baskin's science education did lack the publishing aspect needed to pursue her interest, so she enrolled in a one-year scientific technical writing and editing course. The certificate course provided tools and opened doors in her chosen profession, including her first position as the associate

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managing editor of the *American Journal of Human Genetics*. Most people entering publishing will begin at an entry-level position, such as an editorial assistant, but then fate and intentional persistence play a hand.

The road to becoming an executive editor requires dedication and passion to learn more, network more, and be open to any opportunity that presents itself. Sometimes, it can be as simple as being in the right place at the right time, but even that involves finding your way to that right place. To attain the position of executive editor, a prospective candidate must seek opportunities to gain more responsibility and find meaningful ways to contribute. "Focus on learning what you can as early as you can; that means going to meetings, networking, talking with other people, being willing to learn from the mentors you have around you," says Baskin. Opportunities abound in today's global world, starting within the office (e.g., what isn't being

done that could be done?) to mentoring programs, such as those provided by the Council of Science Editors. The key is to always pursue continued learning.

Understanding the ins and outs of modern publishing is only the beginning. As previously mentioned, a future executive editor should take actions such as those required in the position: staying open to new ideas, seeing what is and what could be, being brave in the face of innovations, and not setting limitations. With a positive attitude and an eagerness to learn, the pathway to executive editor is there for the taking, and what a pathway it is! The experience required for to the position, and within the position itself, provides a strong foundation for many career moves. Baskin shared that her experience as an executive editor has opened the door to many realms of business. Indeed, the future is bright as viewed from the office of an executive editor.

Interview with Erica Goodoff, Medical Editor

Lindsey Buscher

Erica Goodoff received her bachelor's degree in journalism and Russian language and literature in 2002 from the University of Missouri and continued studying Russian at the University of Kansas from 2005 to 2007 while working full time at Allen Press. She earned her Board of Editors in the Life Sciences certification in 2010 and has worked as a medical editor in the Department of Scientific Publications at The University of Texas MD Anderson Cancer Center for the past six years.

LB: How did you end up as a medical editor?

EG: Before I took this job, I worked for several years for a publisher of scientific journals, in roles ranging from proofreader to managing editor. I knew that eventually I wanted to edit text at a deeper level, and I found that medicine was the most interesting topic I read about as an editor. When my position with the publisher fell through during an economic downturn, I saw a description of my current job (on the CSE job board, actually) and I thought to myself, "that sounds like exactly what I want to do." And it is.

LB: What's a typical day like for you?

EG: My primary job is to edit research papers and grant proposals (e.g., requesting research funding from the National Institutes of Health) written by MD Anderson faculty or postdoctoral fellows. I work in a department with about 15 other editors, and faculty members send us their manuscripts prior to submission (to either a journal or funding agency). The manuscript may be a very early draft, in which case we can call or sit down with the author in person to refine or rework parts of the text, or it may be nearly ready to submit, in which case we mostly copyedit. I would say most manuscripts I see need at least a moderate copyedit and at least one or two suggestions to improve the flow or organization of the text. Most days I work alone in my office, poring over a manuscript. I typically spend about three days on each manuscript, and I usually have about three more manuscripts waiting in my "queue" on a given day. Although most editors work very independently in my department, it is handy to have other editors nearby when questions arise, and we have a strong internal training program in which we review the work of new editors. In addition to



Erica Goodoff

editing, our department offers writing workshops for our authors. I can be found presenting at one of these workshops about four or five times a year.

LB: What are the top three things you enjoy about your job?

EG: First, I like that it is intellectually challenging work. I have found that jobs that challenge me in this way help me stay engaged in doing quality work and improving my skills. Second, as a typical introvert, I like the quiet, independent work setting. Although I enjoy teaching the occasional workshop, the quiet office is definitely a good fit for me most days. Third, I like that I'm in a position to help ease the pressure of getting important research funded and published. Authors send us their work voluntarily and are happy to receive help from someone outside the role of reviewer or supervisor.

LB: What are the most challenging aspects?

EG: Although I appreciate the intellectual challenge, the work is undeniably hard. I do not have any formal training in medicine or science beyond basic undergraduate-level biology, so many of the manuscripts I edit contain concepts that may be

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unfamiliar to me. I have certainly learned a lot from my work, but mostly I have had to cultivate the ability to ask the right question, whether in the form of a Google search or an author query. This is all the more challenging when English is a nonnative language for the author, which is often the case. In addition, just in general, this type of editing requires heavy concentration. I believe my attention span is better than average, but let's just say that some days require an extra cup of coffee.

LB: What has been the biggest surprise to you about your job or company?

EG: To be honest, I didn't know that such a job existed until I read the job description. Many large institutions have editors working in individual departments, usually with some background in a specific field relevant to that department, but ours is one of few institutions with a centralized editing department.

LB: What particular skills are critical to be successful in your role?

EG: Aside from a solid grasp of grammar and attention to detail, which you need in any editing role, this job requires critical thinking and problem solving. Manuscripts in draft form are often missing pieces of information that are key to a reader's understanding of the content. This may be something as simple as a transition word or as complex as a description of a statistical test. Sometimes authors are "too close" to the research and forget that someone who has not been in the lab with them will need to know the right background information to understand why things were done a certain way. Of course, identifying the problem (i.e., critical thinking) is only the first step. The second is to ask the right question, as I described earlier, which is where the problem solving comes in.

LB: What are the biggest changes you've seen in the industry since you started?

EG: Publishers and journals in general have cut back on editing services, for a number of reasons. The internet has also changed the traditional publishing model. Unfortunately, with all of these changes, I think it

is easy to overlook how much work is really needed to produce a high-quality research paper, especially when it comes to editing, which is invisible when done well and notoriously difficult to quantify. Although our department is unusual among institutions, private editing groups with a similar service model have become more common as the "quality-gap" problem has become more noticeable in the world of online publishing.

LB: Do you have any predictions for the future?

EG: You know, despite all the tools and technology we have created to improve communication—from reference management software to autocorrect—I don't think robots will ever completely replace human editors. Language, or at least English, is way too inconsistent. That being said, the type of editing we do may become more complex as these tools are improved to help with the basics.

LB: When you were a kid, could you have imagined yourself doing this job?

EG: Well, as I said, I didn't know this job existed until I applied for it. When I was younger, I vaguely pictured myself working in an office on a daily basis and doing something kind of nerdy, but beyond that I had no idea where I would end up.

LB: If you had to give one piece of advice to someone who is interested in working as a medical editor or in the scholarly publishing industry, what would it be?

EG: Network. This is probably the most cliché answer to this question, and unfortunately many of us find it exhausting, but it is very important. Scholarly publishing is a broad field, but editors tend to spend a lot of time alone. This can make it especially difficult when the time comes to take the next step in your career. I have met a lot of medical editors and others doing similar work who ended up in their jobs largely by chance (or, as one of my colleagues puts it, they have "origin stories"). The best way to find the dream job you didn't know existed is to meet the people who do it.

Pam Goldberg Smith: Editorial Assistant

Coffee in hand, I sit at my work desk every morning to sift through emails from across the world: a lab project completed in Israel, editors' instructions from Kentucky, reviewer inquiries out of Sweden. If I'm careless, some of the dark, liquid caffeine drops on my clothing. It's no matter. Instead of formal business attire, I'm relaxing at home in a pair of jeans.

A work-at-home editorial assistant may not be the most noteworthy occupation, but the position didn't simply fall in my lap. I worked hard to get here and will continue to work hard to help, even in some small measure.

I attended the Pennsylvania State University during a time when the waning newspaper industry made me think twice about pursuing journalism. Instead, I majored in English with a minor in history. Some might consider it a soft, liberal arts education. However, I recognized that mastering the intricacies of language and communication, as well as placing value on historical knowledge, advances society. This decision to focus on liberal arts also greatly benefitted me as it kept many doors open for future endeavors.

After graduation, I relocated to Baltimore, where I accepted a position as an executive assistant for a business that specialized in helping other small- and medium-sized companies grow. I'd answer calls and schedule appointments for lawyers, accept mail on behalf of therapists, and greet the clients of a multitude of businesses in a professional downtown location. It felt like a great risk at the time, but after a few years I left my first post-college job to gain additional experience in temporary positions. What started as simple data entry further affirmed for me the importance of consistency in training and documentation, whether the company specialized in medical equipment or engineering. During this time, I also engaged in online writing opportunities to achieve balance with a creative outlet. I reviewed films, composed how-to articles, and wrote about events and popular places within the Baltimore-D.C. area.

While searching for a permanent position, I interviewed at the Castle, a gorgeous, early nineteenth-century police station in the Hampden neighborhood that had been renovated and turned into various offices and shops. I walked in, obviously overdressed in formal business attire, complete with hosiery and heels. Yet the small, close-knit staff enjoyed my somewhat quirky humor. *Circulation Research* was clearly the place for me.

The global communications at *Circulation Research* never ceases to amaze me. In a day, the staff connect



Pam Goldberg Smith

with people in Australia, Japan, Hong Kong, India, Berlin, London, Canada, and beyond. And all share the goal of understanding, preventing, and curing heart diseases. By assisting these individuals, I could help with this noble goal.

The position began with processing manuscript submissions and sending out decision letters. Many of the papers addressed induced pluripotent stem cells or cardiac hypertrophy or other important, scientific topics. I felt like a child tasked with interpreting Shakespeare. On occasion, I'd inquire about the latest hot topic and my manager would patiently explain the exciting study and how it impacted what was known about heart disease. I'll never forget one of the first papers published after I was hired, which discussed how the stem cells of a mouse fetus aided in repairing the heart of its mother under cardiac stress. This was certainly cutting-edge science.

When the job responsibilities grew to tackling side projects, I knew I was finally making a difference. I helped test a new web platform and suggested changes to preserve

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a user-friendly site. Through WordPress, I updated an image gallery of newly published review articles to increase web exposure. I tracked responses to special articles and invited members to the editorial board.

I am grateful to have made enough of an impression over the years that, when my husband had to permanently relocate to northeastern Pennsylvania for work, I was given the opportunity to take my own work along. Gone was the grueling rush-hour commute, but also the face-to-face interaction with coworkers. Flexible hours replaced the 9-to-5 life. Like many others who work from home, I keep to a schedule. I log on by 8 in the morning and take a brisk walk on my break. To avoid becoming a hermit, I joined a local writers group, where my creativity found a consistent and supportive outlet.

My work responsibilities increased. Most recently, I conducted interviews and wrote profiles for the “Trainees in

the Spotlight” series. It was important for me to communicate with the trainees throughout the editorial process, to request headshots and references, and to maintain accuracy of all published information; it’s a personal pet peeve to find errors in a published piece I’ve written.

If I had been told during my interview at the Castle that I’d eventually work from home and become an a contributor to *Circulation Research*, I would probably have laughed and shaken my head. Yet it paid off to take calculated risks by pursuing my strengths and venturing down the road not taken to find balance in life. While enjoying the benefits of a home office, I look forward to embarking on my first work trip to the American Heart Association’s headquarters in Dallas next year. As one who was raised to always have a thirst for learning and sharpening my skills, I hope to one day go back to school or take a few classes. Moreover, I want to help, even in some small measure, leave the world a better place.

Interview with MaryKate Sullivan, Journal Manager

Mary K Billingsley

Name: MaryKate Sullivan

Title: Journal Manager

Company: Elsevier

Years in current position: about 1½

When I have a question about an article in production, I turn to MaryKate Sullivan. From copyediting to typesetting to proofing, MaryKate coordinates the process that turns sets of accepted manuscripts into published journal issues. What follows are excerpts from my conversation with her about her role as a journal manager for Elsevier.

MKB: How would you describe your role and what you do?

MKS: I'm a journal manager, which means I receive manuscripts and am in charge of shepherding them through productions until they are published online and in print. I work with authors, editorial offices, and internal colleagues to make sure that process happens smoothly.

MKB: How many different journals do you manage?

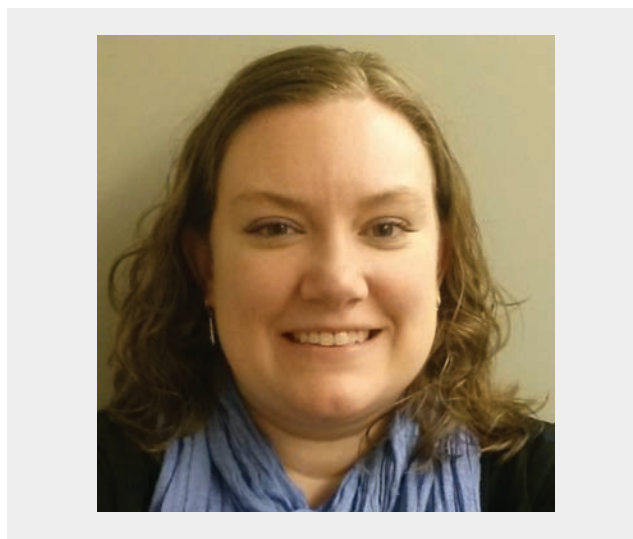
MKS: Right now I have two journals. That is pretty typical. Elsevier really tries to determine how much time individual journals will take up in your day, assign a balanced workload, and make sure you have enough time to spend with each journal.

MKB: How long have you been in the field?

MKS: Almost 4 years.

MKB: How did you end up in this role?

MKS: When I was first out of graduate school, I felt a bit stuck: I had originally gone to get my master's degree in English literature because I wanted to eventually become a professor and teach. Sometime during my two years in grad school, I decided I no longer wanted to teach and then I was faced with looking for a job that I hadn't given any thought to previously. I eventually found a job with a company as a production editor where I worked on various journals in science and the humanities. After I had been there for some time, I was looking for opportunities to grow in my career and I had heard positive things about Elsevier. I looked around, found a job listing for my current role, and immediately applied. I was so grateful they decided to hire me!



MaryKate Sullivan

MKB: What's a typical day like for you?

MKS: I get in to the office and get my coffee (always my first task!), then I open my email. I hate a cluttered inbox, so I try to address the low-hanging fruit and delegate what needs to be sent along to someone else as soon as I come in. I want to make sure authors, editors, and colleagues know that their questions are important to me, so I try to respond within a reasonable time frame. Then, depending on where my journals are in their publication cycles, I may work on article proofs, review copyediting work, or compile an issue. I may have a meeting or two scheduled as well, so I typically have a pretty full day.

MKB: What do you like best about your job?

MKS: I like knowing what I'm doing is making a difference in people's lives. The article proof I'm working on may be helpful to a physician looking for information to help patients. I feel empowered that I'm not just working a desk job—what I do helps people every day. It's rewarding to know I'm doing something that matters. I also enjoy completing tasks and checking to-dos off my list during the course of my day so that when I leave the office in the afternoon, I feel I have actually accomplished something. I consider myself lucky.

MKB: What are the most challenging aspects?

MKS: Personalities. The most challenging aspect of my job is working with people who may not necessarily

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see things the way I do. This is true for colleagues [at Elsevier] as well as authors or editors who work outside Elsevier. Sometimes, I have to step back from an email exchange or phone call with someone in order to try to see a situation from their perspective. Maybe I need to realign my outlook on a certain subject or take a new approach, but it's so rewarding to be able to help someone who thought a problem or issue would not be solved to their liking. In this job, you really have to talk to a lot of people—authors, editors, colleagues—and dealing with other personalities and perspectives can be challenging.

MKB: What was the biggest surprise to you about your job, Elsevier, the field?

MKS: I think the biggest surprise about my company is that it is so caring and concerned for its employees' well-being. I think most people have a view of a large company like Elsevier as a corporate entity whose employees are anonymous and that doesn't care as long as it makes money, and that's not true at all. I feel supported in my role every day here, and I also feel confident in exploring other potential trajectories for my career. Elsevier wants each of its employees to develop skills that will help them now and in the future, whether in their current role or another. I feel valued as an employee, and I think everyone should feel that way in their career. In such a large company, the size is an asset and we have so many human resources available to us—people with other expertise who can answer questions quickly.

MKB: What particular skills are critical to be successful in your role?

MKS: Impeccable attention to detail. I work on manuscripts and articles every day that authors and other editors may have been looking at for weeks or months. In some ways, I'm the last line of defense before an article is published, so it's important for me to approach each article with fresh eyes and to catch what others before me may have missed. Also, good people skills. That sounds incredibly cliché but it's very true! I am an introvert and I never would have thought I would communicate with the number of people I do every day in my job. It was intimidating at first, but I think developing those people skills has helped me grow in confidence.

MKB: What are the biggest changes you've seen in the industry since you started?

MKS: The push for more and better technology. It is becoming so important for Elsevier to provide the best technology for its customers so they are better

equipped to treat patients, prepare for a career in health care, or participate in important research. People ask, with all this technology, am I worried about my role, and I'm absolutely not. Although parts of the process are relatively automated, human involvement and a personal touch adds so much value. We provide the human element that an automated process never will.

MKB: Do you have any predictions for the future?

MKS: Since I've only been working in this industry for a little less than 4 years, it's hard to say whether I have predictions for its future. I do, however, have predictions for my own future: I will continue working to learn new things, improve my current skills, and develop new ones. Who knows where that will lead me! I'll make sure I'm happy and fulfilled in whatever my current role is in my career. I feel happy and fulfilled now and I believe that's what matters.

MKB: When you were a kid, could you have imagined yourself doing this job?

MKS: Not specifically this job, but it became clearer as a real possibility the older I became, especially after talking to people who had worked in the publishing industry before. I love the power of words and I think I just want an opportunity to work with them in every stage of my career.

MKB: If there was something you'd like others in the workflow or pipeline to know about working with a journal manager or production editor, what would it be?

MKS: I would like everyone to have a better sense of what each of us does. For example, I don't really know what the typesetters do. I receive work back from them, but I don't really know how they do what they do, or how articles are posted online, or how files sent to the printer become a print issue. For all of us, it would be helpful to have a stronger understanding of what each of us does and how it affects others throughout the workflow. It sounds like this issue of *Science Editor* may help with that!

MKB: If you had to give one piece of advice to someone who's interested in working as a journal manager or production editor, what would it be?

MKS: Make sure you're well versed in English grammar and pay attention to the details. If you believe you would like a career in academic publishing, try it out. If it's not for you, don't sweat it! This career, like every other career out there, isn't for everyone and it's important for you to be happy.

Interview with Barbara Stoebener Johnson, Proofreader

Beverly Lindeen

Barbara Johnson started working at Allen Press, Inc., as a Proofreader in 1970. She was full time at the company for 8 years before changing from full-time to contract work, also for Allen Press, for 12 years. She became a full time Proofreader again in 1990. In total, Barbara has worked as Proofreader for Allen Press, in some capacity, for 47 years. I asked her about her long career as a Proofreader.

BL: How did you end up in this role?

BJ: I was editor of the school newspaper when I was a senior in high school. A couple of months after graduation, I filled out an application at Allen Press, and the owner of the company at the time took me to the Proofreading Supervisor, and I read out loud to her. The Proofreading Supervisor must have liked the way I read because several days later, I received a call back and was hired.

When I started, the type was set using hot lead, and when there was a mistake, an entire line of type needed to be deleted, inserted, and re-read. That was usually done in pairs. One person read the newly-typeset article, tapping on the desk every time there was a capital letter. The other person followed along in the manuscript, tapping each time there was italic text. Revisions were also read in pairs. Most of the proofreaders worked individually and read the article word-for-word, including punctuation, into a tape recorder and then played the tape back against the newly-typeset article, stopping to mark mistakes. Back then, proofreading was a task performed by two people seated beside each other.

BL: What's a typical day like for you?

BJ: When I get to work, my first task is to check e-mail. Afterwards, I move on to checking the passes (a job that I have already read and sent back to the Typesetting Department to have corrections made) for any jobs that I finished and sent on passes the previous day so that those jobs can be sent to the customer. I then move on to any jobs that I started the previous day and need to finish. Once I have finished any jobs that I had in process, I move on to choosing a new job from our electronic job queue. In addition to actual proofreading, I field questions from coworkers



Barbara Stoebener Johnson

both within and outside the department throughout the day. I also have the opportunity to participate in department and division projects on occasion, and help training new Proofreaders.

BL: What are the top 3 things you enjoy about your job?

BJ: (1) I like the daily challenges. There is always something new to see in a job. (2) The continual learning opportunities. Even after this many years on the job, I frequently learn something new. (3) This has more to do with Allen Press than with my specific position within the company, but I really like the people I work with.

BL: What are the most challenging aspects?

BJ: Fewer than 10 years ago, Allen Press's composition process was converted from hard copy to being electronic. This change affected everything from the way Proofreaders read the jobs (now as PDFs), to how work is moved from one department to another. Where stacks of hard copy were once moved physically from one shelving unit to another, now PDFs are stored on a server, and email notifications are sent between departments. The electronic workflow in general is a challenge for me. I didn't grow up with computers, so I had to learn how to use them. For most of my career, I worked exclusively on hard copy. When the company

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decided to change to an all electronic workflow, that change came with a steep learning curve. It took everyone a long time to adapt.

BL: What has been the biggest surprise to you about your job or company?

BJ: In high school, we had a typing class that was not an easy class for me. Now, I work on computers every day. I am able to help my coworkers resolve problems they have with their computers. I have even taken apart my computer at home. I never thought when I started this job that I would be where I am now with regards to my computer knowledge.

BL: What particular skills are critical to be successful in your role?

BJ: It is important that a person have a willingness to learn, and is comfortable asking questions. It's helpful if he/she possesses the ability to forgive himself/herself. I also think possessing critical thinking skills is essential. One should be able to think through a process. And, of course, being detail-oriented is a must in this job.

BL: What are the biggest changes you've seen in the industry since you started?

BJ: The biggest change we have experienced here, as I already mentioned, is converting from a hard copy workflow to an electronic workflow. Not only did that change the tools we use to proofread, but changed the nature of proofreading itself. In the past, we received manuscripts on hard copy with no electronic files accompanying them. We retyped them into our system to prepare the manuscripts for paging,

and because every character was retyped, we read every character to ensure that the retyping did not introduce any errors. Eventually, manuscripts were submitted as Word files that were inserted into the typesetting templates. It was no longer necessary to read jobs so closely anymore because there was very little chance that errors would be introduced into the text. Now most what we do is more of a quality check than a character-for-character proofread.

BL: Do you have any predictions for the future?

BJ: I think things will continue in the direction they are currently going of being in an electronic form and online.

BL: When you were a kid, could you have imagined yourself doing this job?

BJ: I had planned in the fall of 1970 to attend The University of Kansas. It was a tumultuous time everywhere, not just in Lawrence [Kansas, where The University of Kansas is located], and I decided that instead of starting college, I would set out looking for a job. If I had attended college I would have taken classes to earn a degree in elementary education, but I ended up with a lifelong career as a Proofreader instead.

BL: If you had to give one piece of advice to someone who's interested in working as a proofreader or in the scholarly publishing industry, what would it be?

BJ: The most important things for a potential proofreader to have are a willingness to learn, and the ability to keep an open mind.

Karl Broman, Academic Editor

Tracey A DePellegrin

Karl Broman is Professor, Department of Biostatistics & Medical Informatics, University of Wisconsin-Madison; Senior Editor, GENETICS journal, published by the Genetics Society of America; Academic Editor, PeerJ; and Member, BMC Biology Editorial Board.

TAD: Karl! I have questions about genetics and questions about being an editor. So many questions! What's a typical day like for you? I mean, one in which you're performing both editorial duties and one in which you're teaching or doing research.

KB: I keep pretty regular hours, and I tend to get to campus early because my kids leave for school at 7:15. I try to keep meetings packed into particular days so that I can have longer blocks of time for data analysis, software development, writing, or just thinking. I also travel about once a month: to a scientific conference, to give a seminar, to visit collaborators, or to teach at a workshop.

Editorial duties are unpredictable. I might see nothing in a week, or I may get five new manuscripts in a few days. I feel a sense of urgency, so I'll try to fit in a quick read during the day. But I usually leave it to the end of the day or the evening to study more thoroughly, and I might not take action until the next morning.

TAD: How would you explain your science to a layperson? Do you have an elevator pitch?

KB: Saying "I'm a statistician" will close down a conversation pretty quickly. I tend to say that "I help scientists make sense of data," or more particularly, that "I try to find genes contributing to disease, mostly in mouse crosses."

TAD: You've been an Associate Editor for GENETICS for 6 years, and you're now a Senior Editor. What are the most interesting aspects of the editorial role?

KB: I'm not sure about "interesting," though I am fascinated by the politics of academic publishing. I'd say the aspect I find most valuable is helping authors to improve their papers. I've certainly benefited enormously from reviewers' and editors' suggestions over the years. For example, I had a paper at GENETICS that received really terrible reviews. However, rather than reject the paper, the associate editor (Dr. Mary Sara McPeck, from the University of Chicago) spent a bunch of time on it and said basically, "Here's what the reviewers aren't understanding, and here's what you can do to make it clear." I'd like to be able to do that for authors.



Karl Broman

TAD: What are the most challenging aspects of this role?

KB: I often have a hard time making decisions. A lot of this is a matter of taste: Is this work interesting and important enough to be included in GENETICS? Rejecting papers without sending them out for review can be particularly difficult. It is certain to annoy the authors, but should I annoy them now or later, and should I waste reviewers' time when I'm confident that the paper ultimately won't make the cut? With such rejections, I've found it best to say as little as possible. By providing more details, I'm providing more material for the authors to rebut.

Rejections are the most painful part of this business, and I spend the vast majority of my time on mediocre or just plain bad papers. Grading homework or exams is like this, too. The really good papers breeze through; I spend all of my time trying to puzzle through the mediocre ones: What could the authors do to make this better?

TAD: What was the biggest surprise to you about being an editor?

KB: Hmm. I guess it's that you get to see another side of people. For example, people you'd respected may behave badly (get really nasty; fail to meet commitments; or write cursory, empty reviews). Then, others show their

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extreme devotion to making science better, such as editors and reviewers who put a lot of time into helping authors improve their papers. Mark Johnston (Editor-in-Chief of GENETICS) has done amazing work for GENETICS, and Dan Schaid (from Mayo) put enormous effort into improving the journal *Genetic Epidemiology* in the early 2000s, with great success.

I guess the real surprise, regarding academic publishing, was the authors' page charges. I'd thought it was all paid for by subscriptions. As I recall, PNAS used to put a notice on each paper, that it was formally an advertisement.

TAD: What particular skills are critical to being successful as both a professor and an editor?

KB: You've got to really enjoy writing. You need to become skilled at explaining things clearly and simply. To be an editor, you need to really care about people and want to help them to improve and to derive joy from their successes. To be a professor, you need to be creative, identify important problems, and craft solutions (generally in collaboration with others). And, you need to finish things.

TAD: What are the most significant changes you've seen in scholarly publishing over the years?

KB: Back in 1997, when I was a postdoc, it was all on paper. We'd receive hard copies in the mail to review. A couple of times, I was mailed a manuscript to review without even being asked first. Periodically, I'd have to drive to Madison to go to the library and make copies of articles to read (my postdoc was in Marshfield, Wisconsin). So the move to email and the Web, first for the review process and then to be able to get all articles electronically, has been the biggest change.

More recently, I'd say it's the move towards open access, and then the more recent culture of preprints that is finally taking off in biology. In statistics, there's a long history of making articles available in advance, as technical reports. This is largely because the publication process has been so incredibly slow in that field. However, the tech reports were often hard to find or obtain, and there had been no such practice in the biological sciences until now.

TAD: Do you have any predictions for the future (of scholarly publishing)?

KB: Oh, I'm terrible at making predictions. But, I'll tell you what I hope, and that's that the entire scientific

corpus becomes open at the time of publication. It will require a big change in the way we pay for things, but there'll be such an enormous benefit to science and to society.

I personally don't want to do away with journals and the tradition of peer review. I've benefited enormously from peer review, and I appreciate the curation that editors can provide. I'm not particularly enthusiastic about open peer review, because, well, people behave badly. Having just one big repository of manuscripts, with unsolicited "post publication" reviews? I think this will further skew the advantage towards big names at big institutions, with important papers from lesser-known people on less-fashionable topics being largely ignored.

I don't see us breaking the culture that, in hiring and promotion, over-emphasizes publications in flashy journals, instead of, you know, actually reading someone's papers. I guess that's a prediction.

TAD: What role do scientific journals and editors have to play in ensuring published research is reproducible?

KB: I think the big thing is adopting policies that require data and software to be publicly available. Then we need to follow through and double-check that authors have provided all that is needed. For data, this is relatively straightforward. However, just as it's tedious to compile the relevant metadata that documents the data, it can be difficult to check that all of the data and metadata are available in a useable form. Harder still is checking the software: Is it all there, and useable? We need to raise the level of quality of scientists' computational work, and the key there is education and training.

TAD: When you were a kid, could you have imagined yourself doing this job?

KB: For sure not. I didn't really understand how science worked until college, or even graduate school. And I'd not heard of statistics until college.

TAD: If you had to give one piece of advice to someone who's interested in taking a role as an academic editor for a scholarly society journal, what would it be?

KB: Compile a personal list of possible reviewers. It's hard to think of people off-the-cuff; you want a nice long, diverse list of people to browse.

Interview with Nicole Rietmann, Copy Editor

Jessica LaPointe

Name: Nicole Rietmann

Title: Copy Editor

Company: American Meteorological Society

Years in current position: 4.5

JL: How did you end up in this role?

NR: I've been interested in a career in publishing since high school. After graduating with a B.A. in English and a minor in professional writing and psychology, I attended graduate school for an M.A. in English and publishing. During grad school, I had an internship with the Chemical Heritage Foundation in Philadelphia, working on their quarterly magazine, and I found I really enjoyed working with science-based publications. My first job out of grad school was as an assistant copy editor with the American Geophysical Union (AGU). I spent three years in total at AGU (one as an assistant copy editor, two as a copy editor), and after moving to Massachusetts and working remotely for AGU for a year, I was lucky enough to land a copy editor position at the American Meteorological Society (AMS) in Boston not long after AGU announced its plans to outsource most of its publications department.

JL: What's a typical day like for you?

NR: I work at home two days a week and commute into the office the other three. Other than the occasional meetings or events, I spend most of my day at my desk working on manuscripts and proofs. I also do some troubleshooting for LaTeX submissions, and I occasionally edit books or work on other projects.

JL: What do you like best about copyediting at AMS?

NR: I enjoy being able to improve something, which I think is why I prefer editing to writing. I also love knowing the work we are publishing is helping to expand scientific research and knowledge.

"I enjoy being able to improve something, which I think is why I prefer editing to writing."

JL: What is one of the most challenging aspects of your job?

NR: Trying to edit for clarity and style without changing the author's intent or the scientific meaning can be challenging, especially when there is a language barrier.



Nicole Rietmann

JL: What was the biggest surprise to you about this job?

NR: The biggest surprise to me is how often other people (i.e., not copy editors) assume that I absorb and fully understand everything I edit. When I tell someone I edit scientific journals, I often hear a response along the lines of, "Wow, you must learn so much reading all those articles!" It can be hard to explain that I'm not really paying attention to the science so much as I am to the grammar, spelling, and consistency of the style.

JL: What particular skills are critical to be successful in your role as a copy editor?

NR: Attention to detail is the most crucial trait for a copy editor. A love of words and grammar is also necessary, as well as an appreciation for science. Copy editors must also be comfortable spending long stretches of time sitting in front of a computer and appreciate a quiet atmosphere.

JL: What are the biggest changes you've seen in the industry since you started?

NR: The biggest change has been the transition to an entirely digital workflow. Papers can be submitted, edited, and

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published faster than ever, and access to these published papers is far greater than it ever has been.

JL: Do you have any predictions for the future of scholarly publishing?

NR: I think scholarly publishing is going the way of journalism. The need for publishers to be able to publish a growing number of papers at a constantly increasing pace means there is an overall trend within the industry of a decreased emphasis on editing and quality to meet the demands of cost and time. Many major publishers now outsource their copyediting to companies overseas or rely heavily on freelancers, and smaller publishers are partnering with these major publishers in order to stay afloat.

“Internships and hands-on training are more valuable than having a specialized degree.”

JL: When you were a kid, could you have imagined yourself doing this job?

NR: Definitely. I was always a bookish kid, and the idea of getting to read all day would have appealed to me greatly.

JL: What advice would you give to someone who’s interested in working as a copy editor or in the scholarly publishing industry?

NR: Internships and hands-on training are more valuable than having a specialized degree. My internship experience was working on a quarterly magazine about the history of chemistry, which gave me the chance to research, write, copyedit, and proofread pieces for the magazine, but it also taught me a lot about how small nonprofit organizations function and the ways in which they inform, educate, and interact with their membership and the public. Learning there was this whole publishing world beyond the big corporate publishers also really helped me when I was searching for my first job.

Interview with Elizabeth Fetterman, Editorial Coordinator

Resa A Roth

Name: Elizabeth Fetterman

Title: Editorial Coordinator

Company: Weill Cornell Medicine

Years in current position: 5

Elizabeth graduated from Seattle University with a B.A. in English literature and a minor in business administration. Before her job as an editorial coordinator, she worked as a managing editor for JTE Multimedia (2.5 years) and as a medical copy editor/proofreader for Springer Nature (2 years).

RR: How did you get involved in medical editing/publishing? And what brought you to your current role?

EF: After graduating with an English major/business minor at Seattle University, I decided to move back to the East Coast so I could pursue a career in publishing. My parents lived outside Philadelphia, and I applied for every editorial job nearby. Philadelphia is home to many medical publishers. Like many English majors, I was eager to work in fiction publishing. However, I got attached to medical publishing very quickly, both because of the diversity of the work and the authors/content. In my first two positions (Current Medicine Group and JTE Multimedia), I was trained as a project manager/medical copy editor for book chapters and journal articles. After a few years living in the Philadelphia area, I started to grow restless. It had been an exciting experience moving to Seattle for college, and I was eager to spread my wings again. I applied for positions outside Pennsylvania . . . D.C. and New York were home to many publishers and societies. I'd become very attached to medical publishing and was not interested in switching to a different field. I was lucky to be offered a position by the new editor-in-chief of an otolaryngology journal in New York. It had not been necessary for New York to be my next destination, but it was a great fit—both the job and the setting.

RR: Can you take me through a typical work day?

EF: A jumble of tasks make the day chaotic and interesting. I answer work emails, send out decision letters for papers, proofread the monthly print issue, and run



Elizabeth Fetterman

statistical reports. I also fill my days by selecting articles to publish in the next issue, scheduling journal meetings and conference calls, and developing slide shows for meeting presentations. Additionally, I serve as a liaison between different departments (production, editorial, etc.).

RR: What are the top three things you enjoy about your job?

EF: I love that I help doctors (our authors) publish their research. I also love that by working with medical articles, I am constantly learning about conditions, treatments, etc. And third, I love that I have a career where I'm still able to write and edit.

RR: What are some challenges you run into as an editorial coordinator?

EF: I serve as a 1-person department at Weill Cornell. My colleagues are spread out in different offices (production, editorial, etc.). It can be a challenge to coordinate at all times via phone, our manuscript-processing site, and email.

RR: In order to be successful in your role, what are some vital skills you need to have?

EF: Being organized, attentive to timelines, detail oriented, and able to multitask are important assets. Previous

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training as a medical copy editor has been important, as I serve as a late-stage proofreader for our print issues. Also, being able to work independently and, at other times, with a publishing team (remotely) are important.

RR: Have you observed any major changes to the industry since you started? Do you have any predictions for the future?

EF: Since I entered medical publishing 10 years ago, I've observed medical copyediting is often outsourced to freelancers, etc. Manuscripts are being submitted and peer reviewed via online manuscript sites. There are many online tools (e.g., altmetrics) that help authors get recognized and promote their work. Also, open-access journals are gaining recognition as a new way to publish.

I predict many of the changes I've observed (above) are going to be the new norm.

RR: Can you describe a bit more about your experience in the scholarly publishing industry?

EF: There's a diversity of positions in this field: editing, project management, advertising, production, etc. For me, as a former English major, medical publishing does not inspire creativity the way fiction does. But it does inspire. The articles I help publish are a humble reminder of the innumerable, sometimes heartbreaking conditions that people struggle with. The articles offer

guidance on management and hope for developing treatments. The publishing process can be stressful and monotonous, both for the editors and the authors. But there's an undercurrent of humanity and passionate ambition from our authors that consistently drives me in my work. Just as there are physicists who are making discoveries in space, doctors are making discoveries that further our understanding of ourselves. For those who want to be inspired and motivated in their work, serving as an editor in the medical publishing field is a rewarding position.

RR: Have you had a favorite job over the years? Which job was that and why?

EF: I've loved all the medical publishers I've had the privilege to work for. If I were to go back further in time, I would consider my job at a nonprofit organization that helped foster kids to be a favorite job. There was an energy and a commitment to helping others that inspired me every day. Also, everyone was so friendly. I couldn't wait to get to work in the morning.

RR: When you were a kid, did you imagine yourself in a job like this?

EF: I always wanted to be a fiction writer. Working in publishing keeps me driven in my own creative pursuits. One day, I'll send my Victorian novel (in its second of 20 drafts) to a publisher.

Keynote Address: Perhaps in My Next Life

SPEAKER:

Mary-Claire King, PhD

Professor of Genome Sciences
and Medicine
University of Washington
Seattle, WA

REPORTER:

Peter J. Olson, ELS

Senior Copyediting Coordinator
Sheridan Journal Services
Waterbury, VT

As children, many of us are fairly certain about what we want to be when we grow up. Some of us follow our original path, whereas others forsake it for a very different one—and in still other cases, those paths merge fortuitously somewhere along the way. Such has been the odyssey of this year's Keynote speaker, who from the very beginning of her speech made clear her admiration for the path chosen by her audience.

Dr. Mary-Claire King, a human geneticist renowned for her groundbreaking identification of the breast cancer gene *BRCA1*, once considered an alternate niche for herself. Her natural love of language as a child blossomed further during her years as an undergraduate at Carleton College, and although she was also drawn to the field of mathematics, she recognized that she was “simply not talented enough to be a serious mathematician.” It took a transformative experience at the University of California, Berkeley, to propel her away from journalism toward the field of genetics; yet her two passions became inextricably intertwined years later when her work in the lab led to a life of frequent and extensive collaboration with science editors. It is this union that has since afforded her the insight to identify what she termed “three classes of challenges”—and the resultant responsibilities—shared by scientists and journal editors today.

Dr. King framed these challenges within two basic truths that govern them. First, she praised her audience of scientific journal editors as being “among the most powerful players in the scientific enterprise today,” encouraging them to celebrate their indispensable role in the endeavor to publish valuable, high-quality scientific research. By extension, she emphasized the importance of peer review as a measuring tool for advancement, particularly given that senior faculty on promotion committees may come from fields far distant from those of the candidate. Second, she marked the rise of online publishing as a revolutionary era in the history of the written word that rivals the invention of the printing press and has challenged the idea of what constitutes content. In her assessment, the repercussions of this technological revolution—which have been devastating for mainstream forms of publication—have been mitigated in the world of



Mary-Claire King delivering the Keynote Address.

scientific journals by the central tenets of truth and quality that are universally held by scientists and science editors and are enacted through exhaustive experimentation and review. In other words: Although the tools used to convey truth and maintain quality are being altered dramatically, it is the scientific process itself that has allowed the idea of content to remain unchanged.

The first of Dr. King's three classes of challenges comprise those driven by the technological revolution—or, more specifically, the unintended consequences of open access publishing. Dr. King made it clear that she does not see open access as an inherently problematic venture; in fact, she considers it an acceptable and sustainable business model. Rather, she characterized the challenges as having been “spawned” by the open access movement. Her greatest concern is rooted in the proliferation of fake—or predatory—journals, many of which resemble legitimate journals so similarly as to make them indistinguishable from one another by eager and earnest authors. Although she acknowledged that general awareness of predatory journals is relatively high within the scientific community, she urged vigilance nonetheless, suggesting that all journals should be asked to provide their impact factor to aspiring authors and senior faculty members. She couched this suggestion in a good-natured swipe (“I never in a thousand years thought I would say anything good about impact factors!”) but added that the absence of an impact factor should raise suspicion, with the caveat that some legitimate journals may simply not be registered in the NCBI database (including new and promising journals that are based in Africa).

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Another inadvertent and concerning by-product of open access that Dr. King addressed pertained to “bioRxiv and its kin”—that is, online platforms designed to host unpublished and unreviewed content for the purpose of sharing and honing scientific information. Her misgivings are multifaceted. First and foremost, she said, bioRxiv and other sites like it are based on a model used by mathematicians that is not necessarily translatable to the life sciences; whereas the field of mathematics lends itself to general agreement about the correct interpretation of data, there is a much greater degree of subjectivity in the life sciences that makes public discussion about the research problematic. This format is complicated further by the fact that the posted data can be altered without notice or transparency—and in a visceral expression of concern, Dr. King lamented that these sites are not immune to online bullying, which is particularly devastating to younger, more vulnerable authors. With this in mind, she affirmed the many journals that have adopted a “journal-curated archival system” in which content is posted with the disclaimer “currently under review,” and any changes and comments are controlled by the journal to protect authors from potential abuse.

Dr. King’s second class of challenges included three innate aspects of scientific publishing that have been exacerbated by the technological revolution. First, as the standard time frame of submission to publication continues to shorten, the corresponding level of thoughtfulness allotted for the preparation of data has also changed radically. Gone are the days of Charles Darwin (one of Dr. King’s personal heroes), whose masterwork *On the Origin of the Species* was published 20 years after he collected his data—so how are we to address the current expectations surrounding speed of publication? Dr. King recommended taking the requisite time for the first review of a paper but being more stringent about the second review, perhaps by establishing a firm, 2-week turnaround policy for the latter. Second—and to her great dismay—she has observed an overall decline of competence in writing, perhaps influenced by

the culture of text messaging, including some manuscripts that have copied text messages verbatim. She pleaded with her audience to preview papers for competent writing and to send incomprehensible papers back to authors for refinement before accepting them for publication. Finally, Dr. King proposed that focus groups be assembled to help clean up journal websites, which as a rule are “growing like weeds” and “not being pruned.” The average journal website is fraught with internal inconsistencies, she said, and the best way to identify them is to have a third party attempt to simulate the journal’s publication protocol.

To introduce the third and final class of challenges, Dr. King posed the question, “Should we adapt our expectations of content as a result of the technological revolution?” Her answer was an emphatic “Yes,” followed by a motion that we should in fact raise them. Given the wide spectrum of technological tools at our disposal, she said, it is more than reasonable for journal editors to expect higher quality and less formulaic material despite the current trend away from these principles. She then discussed several positive adaptations for journal editors to consider, including (1) the inclusion of front matter pieces, which are often written by professional journalists and therefore bring an added component of quality of writing; (2) publishing invited memoirs written by prominent scientists; (3) theme issues; and (4) training junior journal staff to be more responsive to authors.

Mary-Claire King’s passion and enthusiasm for the world of scientific publishing and her palpable admiration of scientific journal editors served as a welcome and timely rallying cry from a powerful advocate and ally of the industry. Her love of language permeated a speech that was equal parts insightful, humorous, and urgent, solidifying her status as an ambassador for the critical union between the fields of science and journalism—a union that she herself has embodied throughout an astonishing career, regardless of whether she thought such a thing would happen to her in this life.

Communicating Science in 21st-Century Contexts: Some Highlights of the 2017 AAAS Annual Meeting

Christina B Sumners, Leah Poffenberger, and Barbara Gastel

The 2017 annual meeting of the American Association for the Advancement of Science (AAAS), held 16–20 February in Boston, Massachusetts, included many sessions that addressed, at least in part, communicating science. The following are highlights of sessions that may especially interest science editors and those in related realms.

Communicating Science Seminar Christina B Sumners

The 2017 AAAS meeting included a 3-part seminar on communicating science.

Who's Your Audience?

For the session “Who's Your Audience?”, moderated by Bruce Lewenstein of Cornell University, speakers shared their experiences communicating science to diverse audiences. Kishore Hari of the University of California, San Francisco, suggested sitting down with stakeholders and really listening to them—and then being prepared to act on what you learn. He said science engagement often involves taking two usually separate communities—perhaps scientists and leaders of a Native American nation—and having them interact, leading to deeper connections. Still, it all begins with listening to each other.

Kirstin Dow of the University of South Carolina works on climate change with the National Oceanic and Atmospheric Administration (NOAA) Regional Integrated Sciences and



Assessments (RISA) Program. To her, one problem with communicating science is that scientists and policy makers often talk past each other. Science has to “match” the decision that needs to be made to give policy makers the information they need.

Matt Leighninger, a vice president at Public Agenda, pointed out that in modern Western culture people have little time but considerable resources (such as education, information, and access to each other and to community leaders) available to them when they do make it to the table. Because they have so much information at their fingertips, “people are simply not going to defer to expertise,” he said. Leighninger broke down engagement into “thick” (mapping webs of connections in the community) and “thin,” which is much more superficial. Although thin engagement certainly has its place, Leighninger suggested that thick engagement is far more powerful—and the best form of recruitment is when someone you know and trust asks you to do something or attend an event.

At the end of the session, Lewenstein pointed out that all of the presenters told stories to convey their messages, and suggested science communicators do the same in order to be successful.

Scientist Motivations, Support, and Challenges for Public Engagement

In this session about public engagement, Ezra Markowitz of the University of Massachusetts, Amherst, spoke about how the engagement environment matters. By *environment*, he meant both the institutional infrastructure (support, norms, and expectations) and structural disincentives (for example,

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the perception that one's career might suffer if one pursues science engagement). His suggestions? The academic and scientific communities need to normalize engagement and protect those who do choose to engage. Markowitz said it's also important to celebrate the impact when engagement activities succeed.

Tracey Holloway of the Center for Sustainability and the Global Environment at the University of Wisconsin–Madison observed that public engagement can actually benefit the research itself, with two-way dialogue potentially leading to new research directions. If scientists do go this route, though, users must be engaged at the beginning, middle, and end (so they do not feel as if they are left hanging). “It is absolutely not enough to publish a journal article and hope that they read it,” she said. Instead, scientists need to recognize that the deliverables different audiences need—whether a booklet, a video, or a presentation—can work hand-in-hand with the peer-reviewed journal article. “Look for the win-win,” she advised.

Sriram Sundararajan of Iowa State University spoke about how broader-impacts work—an important section of National Science Foundation grant proposals—is built into the structure of his institution to help faculty members “develop their broader-impacts identity.” When writing such statements, he commented, “don’t say you’re talking to the public, but say you’re talking *with* the public.”

The Online Scientist: Social Media and Public Engagement

“The Online Scientist: Social Media and Public Engagement” addressed how scientists and professional science communicators can meet strategic communication goals through social media.

Raychelle Burks of St. Edward's University initially became involved in social media because she wanted to network and create social connections. “There were various points in my academic career where I felt incredibly isolated,” she said. “The networks I found online with my peers have given me the strength to be here, and I have reaped a bounty of good.” However, she acknowledged that not everyone is as lucky, and institutions differ on whether public engagement is seen as good or bad when considering faculty for promotion and tenure. Still, she explained, “To me, being online is essential to my career.”

Sara Yeo of the University of Utah said that research shows scientists' own perceptions of self-efficacy determine how likely they are to engage, so training them how to communicate well is very important. “As scientists, we want to talk about all the nuances, but sometimes being reductionist is the best way to communicate,” she said, adding it can take practice to learn how to do so while still sharing the necessary information.

Nsikan Akpan, a producer and reporter for PBS NewsHour, acknowledged that developing “science video is very hard.” Still, he thinks people do want to engage with science via this medium, and the site chosen for video content can be key. It is not necessary to be on every platform: Find one that works and then stick to it. For people trying to figure out if a video would work better on Facebook or YouTube, he offered the following advice: Both sites perform but in different ways. On Facebook, audience retention, especially for a longer video, isn't great. “I tend to think of Facebook as advertising,” he said. It might work to interest people, but videos on that platform are unlikely to drive long-term engagement. YouTube, on the other hand, is better for building a community and stronger for building a brand.

To watch a video of any of the sessions, visit the AAAS 2017 Annual Meeting Communicating Science Seminar web page (<https://www.aaas.org/page/2017-annual-meeting-communicating-science-seminar>).

Fake News and Social Media: Impacts on Science Communication and Education **Leah Poffenberger**

“Fake news” has always existed, but it has recently become a cultural phenomenon. At this session, the panel sought to provide insight into how fake news is propagated, why it has become an issue, and how science communication and education are affected. “There are real effects,” stated moderator Seth Borenstein from the Associated Press.

According to Dan Kahan, a professor at Yale Law School, “we need studies that study fake news directly” to measure its effects. Lacking concrete information on fake news, Kahan presented theoretical models to describe how fake news might be propagated. He believes the most accurate model is the motivated-public model, which involves a culturally motivated public demanding misinformation that matches their viewpoints, which opportunistic misinformers supply.

Kahan described, “culturally toxic memes” (widely circulated self-propagating ideas that fuse positions on politically charged issues to individual identities) as increasing polarization among motivated public groups. Kahan worries that Donald Trump's often misinformed tweets on topics such as childhood vaccinations and comments accusing illegal immigrants of spreading Zika virus make Trump a “toxic-meme propagator of unparalleled influence.” Science communication is in danger of being polluted when noncontroversial science is “pulled across the polarizing line” in the current political climate, Kahan commented.

Dominique Brossard, a communication professor at the University of Wisconsin, Madison, said “fake news about science has always existed,” but social media have allowed it to spread much faster. *Narrowcasting*, or the ability to quickly

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share “iffy” news, allows fake news, or just bad science reporting, to spread. However, Brossard observed, “social media isn’t the issue—human psychology is the issue.” Social media just make it easier for users to “cherrypick” information that supports a viewpoint they already hold.

To combat fake science news or just simply incorrect science information, Brossard suggested higher-quality coverage of peer-reviewed research and more training of scientists to communicate science with the public. Brossard cautioned, “Let’s make sure not to oversimplify the science-media environment by dichotomizing. It’s not [scientists] versus [the public].”

Julie Cairo from the University of Rhode Island shared data from five studies demonstrating the challenges students face when analyzing online information. “Eighty percent of middle schoolers believed ads were real news,” Cairo said, “and 30% to 70% of college students could not differentiate between mainstream and fringe sources.” Cairo offered the following four ways to enhance students’ abilities to critically evaluate what they see on the internet.

First, educators should discuss multiple dimensions of critical evaluation, such as analyzing content for relevance and accuracy and examining sources for reliability and perspective. Second, students should be encouraged to use multiple quality indicators to evaluate information, applying the SCAM framework: identify sources, claims, and arguments, and then make a decision. Third, realize the validity of differing perspectives. “Something can be biased without being bogus,” she remarked. Lastly, Cairo encouraged, “teach[ing] students to be critical consumers and critical producers of online information.”

Bringing Scholarly Communication into the 21st Century

Barbara Gastel

Organized by the Royal Society—which published the first English-language scientific journal, *Philosophical Transactions*, in the 17th century—this session addressed moving beyond the traditional journal model to serve 21st-century scientific communication.

Speaker Wendy Hall, professor of computer science at the University of Southampton, United Kingdom, said the scientific community was “paying publishers three times over” by writing the articles for journals, providing peer review, and then buying the journals. She called for not only making papers openly accessible but also taking full advantage of web capabilities; “It’s all about linking,” she commented. Objecting to the jargon *gold open access* (for items openly accessible in a journal) and *green open access* (for items openly accessible elsewhere, such as in a

repository), she stated, “We just want open and fair.” She also advocated what she termed a micropayment method, with users buying individual papers. In addition, she objected to what she described as domination by metrics: “This is not what it’s all about. It skews what we’re doing.”

Next, Neal Young, senior investigator at the National Heart, Lung, and Blood Institute, spoke largely about “the winner’s curse,” an analogy he used in a 2008 paper in *PLoS Medicine* to show how “current publication practices may distort science.” In that paper, he observed, much as the top bidder at an auction tends to pay more than an item is worth, findings in top journals tend to be those that are most striking, thus providing a distorted view of what researchers overall have found. While noting the paper was “definitely the most popular thing” he had published—gaining thousands of hits online, a cover story in *The Economist*, and coverage on National Public Radio (NPR)—he cautioned the auction image was only an analogy. He indicated an economics approach can aid but not suffice in analyzing the complicated interactions of science and publishing.

The final speaker was Jessica Polka, director of Accelerating Science in Publication in Biology (ASAPbio), an initiative to promote the use of preprints in the life sciences. Characterizing preprints as a system complementary to journals, she likened posting a preprint to presenting at a conference, thereby allowing feedback before journal submission. She said the use of preprints (which has long been common in physics) is gaining popularity in biology; some funders accept preprints as documentation of research, and some journal editors read preprints and then invite authors to submit. She also noted some universities consider preprints when recruiting candidates and when evaluating individuals for advancement. Regarding the fear that a preprint culture would result in a deluge of poor papers, Polka offered a solution: the use of technological tools to highlight good ones. Similarly, addressing the concern that releasing preprints would let others scoop one’s work, she believed the visibility of preprints would be a deterrent. A problem, she said, was that multiple preprint sources exist in biology, and she called for community-governed policies for aggregating preprints.

In concluding the open discussion that followed, moderator Philip Campbell, editor in chief of *Nature*, posed the following question: Would you be willing to decrease funding for science to support the items proposed for scientific communication? A respondent noted costs would actually be saved and so funding for science could increase.

The next AAAS annual meeting (meetings.aaas.org/) will take place 15–19 February 2018 in Austin, Texas.

Summary of the African Journal Partnership Program (AJPP) Annual Review and Planning Meeting 2017

Annette Flanagan, Executive Managing Editor and Vice President, Editorial Operations, JAMA and the JAMA Network

The annual meeting of the African Journal Partnership Project (AJPP) was held on May 24–25, 2017, in San Diego, California, following the annual meeting of the Council of Science Editors. The theme of this year's meeting was *Open Science: Access, Transparency, Data Sharing and Reproducibility*, and the information-packed two days offered a variety of detailed presentations and engaged discussions to further explore the challenges and opportunities facing the AJPP journal teams.

Patricia Brennan from the National Library of Medicine (NLM) opened the meeting with a keynote address on open science. Dr. Brennan offered an overview of the NLM and its structure, resources and activities, tools and databases, and how these serve the mission of providing public access to science and research, which together accelerate further research and public policy. The tools and databases of the NLM, e.g., PubMed and PubMed Central, are of interest and importance to the AJPP journals, their growth and discoverability. There were additional presentations on the topics of “public access journals” and “open access journals” by representatives from sponsoring partners that gave insight into the industry definitions of both access models (and how these relate to the access models of the AJPP journals), how open access is managed at Taylor & Francis and the BMJ, and the mechanics of article processing charges (author fees for open access articles). There was lively discussion on this topic and all presenters gave the journal teams much to consider in reviewing their respective models and options for change.

Following the meeting theme, *Transparency, Data Sharing and Reproducibility*, there were several presentations that provided:

- insights into the best practices for monitoring and reporting journal performance (analytics, metrics, audits, etc.)

- an overview of the EQUATOR Network and its initiatives to “improve the reliability and value of published health research” through “transparent and accurate reporting and “use of robust reporting guidelines”
- how data sharing works at both the *Annals of Internal Medicine* and at *The BMJ*.

In addition, there were presentations about indexing and its importance in improving journal search and discoverability (enhancing open science and transparency).

The meeting also included discussion of operational issues that impact the AJPP journals (e.g., XML conversion services provided by SPi Global, ScholarOne Manuscripts “how to” workshop, review of action items, and financial reporting) as well as updates from two AJPP sponsoring partners: the Elsevier Foundation's Publishers Without Borders Program, and the African Journals Online (AJOL) platform (the latter presenting on the DOI deposit and overall platform metrics).

Of course the meeting would not be complete without specific journal updates, which were presented with the additional context of an extensive review of each journal site done by Kaufman Wills Fusting & Company. The review of each journal site and its digital activities offered a rich and detailed backdrop to better understand the current status of each journal, providing insights into each journal's challenges and opportunities.

We were then treated to a journal “safari” as each AJPP editorial team gave its annual report, citing highlights of the year, plans for the coming year, and ongoing areas of struggle and challenge. Many of the latter were shared across the teams, among them:

- difficulty of finding good reviewers who will respond in a timely manner
- lack of an established scientific writing culture and good English language skills
- engaging and retaining an active, interested editorial board
- availability of personnel resources

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- workflow challenges as they relate to journal management and operations
- getting indexed and improving discoverability

Listening to the reports gave us all profound appreciation for the efforts and commitment of the journal teams and all sponsors, suggesting ideas for continued collaboration and next year's meeting.

All the hard work done by the larger group in preparing, presenting, discussing or listening over the very busy two

days was interwoven with lots of laughter and catching up during the meeting breaks and our meals together. While we were only able to enjoy the beauty of San Diego as we walked in the evenings to and from our group dinners, we experienced the beauty of spirited and human connection in our shared time and confirmation of our commitment to each other and the AJPP. And this was captured in poetic verse by James Tumwine of the *African Health Sciences Journal*, which can be found on the AJPP site at <http://ajpp-online.org/>.

Reflections on My Tenure as a Scientific Journal Editor-in-Chief

Joseph Loscalzo

For 12 years, I had the privilege of serving as editor-in-chief of the American Heart Association's flagship journal, *Circulation*. The experience was highly valuable, both because of what it taught me about cardiovascular biomedicine and because of how it shaped my approach to the many challenges that routinely cross an editor's desk. Here, I would like to share with *Science Editor* readers my thoughts about the benefits and challenges of the editor's role, emphasizing the key requirements for effective editorial leadership from the perspective of my personal experience.

Scope of Operations

Upon reflection, a dominant, lasting impression of the job is that the workload was enormous: ~5,000 manuscripts were submitted to *Circulation* annually, and ~10,000 manuscripts were submitted to the *Circulation* family of journals (*Circulation* and its six daughter journals) annually. By virtue of those numbers, we were privileged to read the very best cardiovascular manuscripts available worldwide. Equally important given those numbers, we also read many weak manuscripts with a variety of shortcomings that commonly distinguish the majority of submitted manuscripts from excellent papers suitable for publication. Clearly, faced with this scope of work, for the enterprise to succeed the editorial team must be well organized and highly efficient. To that end, an effective editorial office staff is absolutely essential for optimal manuscript processing and maintaining smooth general journal operations, and we were fortunate to have had a truly outstanding managing editor and her staff. In addition, the associate editorial team must have a sufficiently broad range of expertise to accommodate the extraordinary diversity of manuscripts submitted to a journal that publishes papers on all types of cardiovascular



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research, from basic science to health outcomes, in all fields of cardiovascular science, from vascular biology to genomics. This editorial team needs to be complemented by a group of highly reliable expert reviewers representing all relevant scientific fields, who approach the review process as objectively as possible, declaring potential perceived conflicts of interest appropriately.

Although the editorial team makes every effort to review manuscripts objectively, scientifically acceptable manuscripts must ultimately be prioritized given the page limitations of most journals. This prioritization begins to move the editorial process away from reasonably pure objectivity toward the informed, but subjective, assessment of the value of a manuscript for the readership. Among the types of questions we consider in this process are the following: Does the manuscript have sufficient appeal for the broad readership? If not, is there a subset of readers—no matter how small—for whom the manuscript may have great scientific importance? If scientifically sound but not a definitive study, is the manuscript sufficiently provocative to move a scientific field in a new direction? These are often

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difficult questions to answer, but with growing experience, over time the editorial team establishes internal standards in its approach to them. In many respects, this prioritization is one of the most difficult—but most crucial—aspects of the job of journal editor.

Approach to Difficult Editorial Decisions

What makes prioritization decisions difficult is, of course, the need to respond to authors who feel rejection of their manuscripts is unjustified based on the scientific evaluation provided in the reviews. Likewise, on occasion, reviewers are offended by the failure of the editorial team to accept their recommendations for acceptance of a sound manuscript. Although the editors make every effort to explain prioritization decisions to the authors and reviewers, and carefully remind the reviewers their job is to advise the editors, who make the final decisions, ill feelings surface not infrequently and must be addressed judiciously and thoughtfully. That authors have strong feelings is not surprising as their manuscripts are a record of their intellectual creations, rejection of which is rarely viewed with complete objectivity. In addition, the authors' perspective is often narrow because most authors have not served as journal editors and, therefore, lack the experience to compare objectively the importance or value of their submissions with all the manuscripts read by the editorial team. To be sure, these are perennial challenges without simple solutions. From my 12 years of experience, I have learned the best way to address these issues with good conscience is to be as consistent as possible in the approach to making decisions and to rely on open discussion among senior and associate editors in the process.

There are many other types of often difficult decisions editors must make throughout the course of their work. The hallmark attribute of an effective editor in this regard is consistency. This is true not only in decisions about the fate of manuscripts but also about a wide range of topics, from the choice of author for an editorial to accompany a published article, to conflicts in authorship that require resolution, to the approach to and disposition of allegations of scientific misconduct. Each of these and many other topics require the development of formal processes that, so far as possible,

objectively facilitate decision-making. Assembling a team of senior editors who can provide counsel and guidance to the editor-in-chief is invaluable in dealing with many challenging editorial issues that routinely confront the journal.

Other Lessons Learned

Yet another important lesson learned in my role as editor is the wide range of uses for invited editorials. Typically, editorials offer a means of clarifying or interpreting a paper for the reader, written as they often are by experts in the field. In addition, however, editorials can be used to place the message of a paper in perspective; for example, considering the long-range implications of a novel therapy on the cost of care, or putting a published finding in appropriate historical context, or suggesting future experiments or trials that seem reasonable and appropriate based on the paper's key results. In addition to these uses of conventional editorials, I have also found editorials written by the editor can serve unique purposes, including addressing a topic of interest unrelated to a published article that the editor believes should be considered by the readership because of its importance to the community, or stimulating the readership to address a particularly pressing issue best dealt with by the broad scientific community. In this way, the editor can take advantage of the "bully pulpit" his or her role provides. The key to this strategy is, of course, not overdoing it. During my tenure as editor, I wrote, on average, one primary editorial annually, hoping that infrequency and the selective nature of topics would indicate a unique emphasis to the readership, stimulating their deepest consideration.

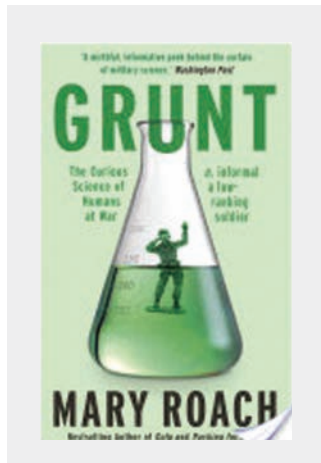
Conclusions

Serving as editor-in-chief of *Circulation* has been one of the highlights of my professional career. The privilege afforded me by leading this premier journal has been unparalleled, both in terms of guiding the cardiovascular community toward the best science its investigators had to offer, and in terms of setting clear standards of quality and of deliberation to help move the overall scientific enterprise forward. The role of Editor is a truly unique and remarkable professional experience I would encourage anyone with appropriate skills, experience, and interest to pursue as an important element of a fulfilling academic career.

Book Review: *Grunt: The Curious Science of Humans at War*

By Carissa Gilman

Grunt: The Curious Science of Humans at War. Mary Roach. New York: W.W. Norton & Company; 2016. 288 pages. ISBN 978-0-393-24544-8.



When 2016 annual meeting keynote speaker Deborah Blum spoke admiringly about her colleague Mary Roach's upcoming book *Grunt: The Curious Science of Humans at War*, it seemed only natural that this be the next selection for our Council of Science Editors Goodreads Book Club.

In her previous best-selling books, Roach has used her unique approach to introduce readers to the unexpected and often wacky science of human cadavers, the afterlife, digestion, space exploration, and human sexuality. Her latest subject, military science and technology, could be considered ill-suited to Roach's characteristic irreverence and witty asides. Perhaps recognizing this, she keeps her focus on the science of keeping soldiers safe, rather than the science of taking human lives more efficiently. As she puts it, "I'm interested in the parts no one makes movies about—not the killing, but the keeping alive." To that end, Roach poses her trademark "dingbat questions" to audiologists, medical examiners, surgeons, entomologists, sleep researchers, and even fashion designers, all of whom work to address the "less considered adversaries" of war.

As fans of her previous work know, Roach shines when examining the obscure or absurd or when shedding

light on aspects of our world that most of us have never bothered to consider. Why are zippers problematic for snipers? Why are injuries to the heel of a soldier's foot so life-altering and difficult to repair? Why do you need to worry more about dirt and sand than shrapnel in a wound caused by an IED? Why are Ziploc bags and kitty litter helpful for long-range surveillance operations? Why do deep-sea submarines have rescue and escape systems when most operate in oceans deeper than crush depth? Why are sharks drawn to life rafts? (And, no, it's not the smell of human blood.)

Roach is the kind of unreserved investigator who will walk up to a Special Ops guy and ask if he's ever had a critical mission impacted by diarrhea. The happy result (besides such gems as "Yes, I have been inactivated because of food sickness") is that she elicits candid, fascinating details from her subject experts, often about topics others might deem embarrassing or not fit for polite conversation.

The book does suffer from some organizational issues, often reading like a series of disjointed essays as Roach jumps from topic to topic. She attempts to insert segues from one chapter to the next, but a few of these efforts seem forced. And as is inevitable with a book like this, some chapters are more engaging than others: the chapter on stress inoculation for combat medics fell flat for me, as did the one on stink bombs. Some readers may also be bothered by Roach deliberately sidestepping darker questions about the military machine and our unending appetite for war. But in the end, Roach's winning style and keen observations overcome such deficiencies.

I should note that if you're a squeamish type who would prefer not to read detailed accounts of genital trauma and reconstruction, the scourge of foodborne illness, or the use of maggots for wound debridement, this is perhaps not the book for you. Roach notoriously relishes in such subject matter rather than shying away from it. But if you're curious about esoteric areas of science and appreciate a healthy dose of levity, Roach delivers another entertaining and eye-opening tour through a world of research that has a profound impact not only on the lives and well-being of men and women in uniform but also on civilians who eventually benefit from the scientific and technological advances driven by military conflict.

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(The STM Report, Fourth Edition)

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