



SEJournal

Summer/Fall 2015 Vol. 25 No. 2/3

INSIDE STORY: In the Wake of a Whale

Founders Sound Off
on SEJ's Past, Future

Newspaper Takes on
Climate Divestiture Cause



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Summer/Fall 2015, Vol. 25 No. 2/3

To strengthen the quality, reach and viability of journalism across all media to advance public understanding of environmental issues

The Society of Environmental Journalists (SEJ) is a non-profit, tax-exempt, 501(c)(3) organization. The mission of SEJ is to strengthen the quality, reach and viability of journalism across all media to advance public understanding of environmental issues. As a network of journalists and academics, SEJ offers national and regional conferences, publications and online services. SEJ's membership of more than 1,200 includes journalists working for print and electronic media, educators, and students. Non-members are welcome to attend SEJ's annual conferences and to subscribe to the quarterly *SEJournal*.

For inquiries regarding SEJ, please contact the SEJ office at PO Box 2492, Jenkintown, PA 19046; Ph: (215) 884-8174; Fax: (215) 884-8175; E-mail sej@sej.org.

Send *SEJournal* story ideas, articles, news briefs, tips and letters to Editor A. Adam Glenn, adam@a2gmedia.com.

To submit books for review, contact BookShelf Editor Tom Henry at thenry@theblade.com.

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SEJ membership is open to working journalists, students and faculty. Eligibility requirements apply. Access a membership application at sej.org/how-to-join-sej or contact SEJ at sej@sej.org or (215) 884-8174.



A team of state and federal biologists approach a young North Atlantic right whale named Bayla that they helped disentangle from commercial fishing gear off Florida in December, 2010. For more about Bayla, and the Pulitzer Prize finalist who covered her story, see page 11.

Photo: NOAA



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All in One Place at One Time

By JEFF BURNSIDE

Society of Environmental Journalists' founder Jim Detjen and I were sitting together at an SEJ gathering not long ago wondering about the size of the collective readership/viewer/listenership of all of SEJ's members. In essence, what is our potential reach? We calculated that it must be in the tens of millions.

That's power to help set the national dialogue and, in many cases, the global dialogue.

Now imagine hundreds and hundreds of those professional journalists gathering in one place at one time: You have the extraordinary annual conference of the Society of Environmental Journalists. It is the tangible manifestation of the intangible global reach of our members' work.

At an April reception for the SEJ board members in Sacramento designed to build interest in the 2016 SEJ conference there, I was asked to say a few words about the value of our annual gathering. In addition to leading California journalists and our energized hosts at California Public Radio ("Cap Radio"), the audience comprised scientists, NGOs, opinion leaders, faculty and staff from UC-Davis including University Chancellor Linda P.B. Katehi, and many more distinguished guests. Understandably, they knew very little about SEJ.

I remembered my chat with Detjen and relayed it to the group. This audience loosely mirrors the stakeholders of environmental journalism that are drawn to our conferences – and for very good reason. Our conferences provide an unparalleled opportunity for access to the very journalists whose work is helping to frame that national and global dialogue on a broad spectrum of environmental and energy issues. Indeed, the stakeholders who regularly attend our conferences know this.

I could see the light bulbs going off over the heads of people in that Sacramento audience. They realized the value and importance of not only SEJ but our highly-regarded conferences. I made it clear that one of these amazing conferences is coming to their region in 2016 and that they should start ramping up for it.

Journalists need to frequently escape the protected enclave of the newsroom or the home office where our work is created. Whether it's through email or social media, the telephone or snail mail – we must be accessible to the public. Our conferences help serve that purpose.

Clearly, the leading focus of our conference is to advance journalistic skills. Comradery is important too. But learning about potential stories, meeting new contacts or getting story tips is critical. So, creating a venue for us to have access to the public, and for the



public to have access to us, is critical as well.

Indeed, the exhibit tables we have at our conferences always sell out. The fees help keep registration costs down for attendees. Exhibitors love it because it gives them a chance to elevate their messages. And many of them are fascinating and have merit.

SEJ, prudently and carefully, provides other valuable ways to access our members: Advertising in the conference program, paid email blasts to members who opt in, ads in the *SEJournal*. Membership dues provide an extremely small percentage of our budget. Foundation support is waning for all nonprofits and is always difficult. So the earned income we generate is used wisely and miserly.

Right now, the 2015 SEJ conference is gearing up with our hosts at the University of Oklahoma in Norman. Our teams who previously conducted site visits gave rave reviews about the issues that will be front and center

there. Conference co-chairs Sarah Terry-Cobo of the *Journal Record* and Nancy Gaarder of the *Omaha World-Herald* are working closely with SEJ's long-time conference director Jay Letto to bring you another highly regarded journalism conference that we hope will give you more skills and more story tips – perhaps some even filed from the conference itself, as is happening more and more.

I asked a rhetorical question at the Sacramento reception: Think of the last time you held a news conference and total the number of journalists there. Was it three? Five, perhaps? Now allow yourself to realize that the SEJ conference brings together from every state and dozens of nations the bulk of professional journalists who specialize in the very issue these stakeholders care about so much.

And this all happens in one place at one time. Imagine that.

Jeff Burnside is a senior investigative reporter with KOMO television, Seattle's ABC station, and has served on the SEJ Board for eight years. He's been awarded several working fellowships and is the recipient of more than 20 journalism awards. A Seattle native, he has reported on coral reef decline, overfishing, killer whales and biomedical research, from locales like Berlin, Bali, the Arctic Circle, Panamanian jungles, and throughout the Caribbean, Hawaii and the Everglades.

If you haven't registered for SEJ's 25th Annual Conference yet, now is a good time, and what a great way to celebrate SEJ's 25th anniversary. <http://bit.ly/SEJ2015Registration>

Fledgling to Full Grown

SEJ's Impact on Environmental Journalism

With SEJ currently celebrating its 25th anniversary year, we asked some of the society's founders – among them luminaries in the environmental journalism profession – to share their thoughts on what the organization has meant to the field, where SEJ is going next and what they see as the big environmental stories of our time. Here are their insights.

What were you doing in 1990 and what led you to help start SEJ?

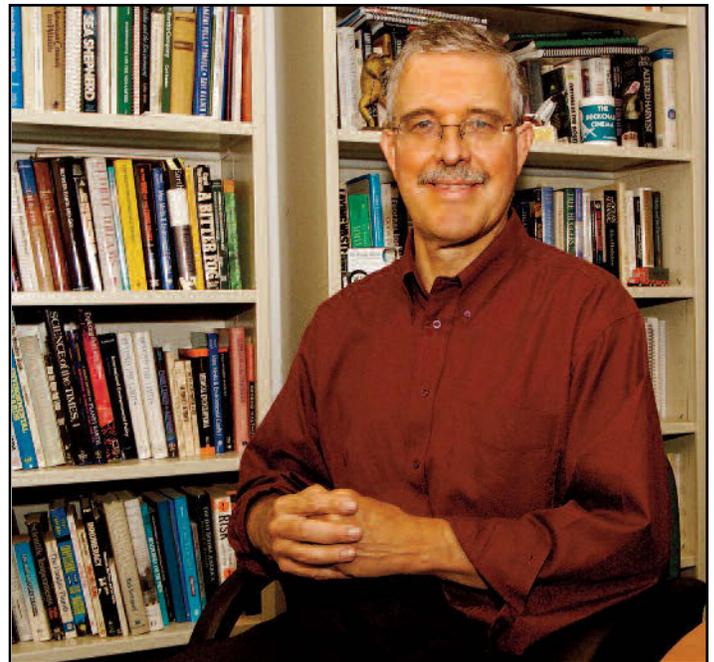
Phil Shabecoff: Covering the environment for the *New York Times*. Like other founders I recognized the environment was insufficiently recognized as a major subject by most media. Also it was clear that there needed to be standards for reporting on the environment.

Jim Detjen: I was a science and environmental reporter for the *Philadelphia Inquirer*. The late 1980s were marked by the Exxon Valdez oil spill, the growing hole in the ozone layer and other environmental catastrophes. We felt that a national organization of environmental journalists was needed to help us communicate about these issues better and to provide support and training for environmental journalists.

Bud Ward: I directed a division of a large nonprofit – National Safety Council. I headed Environmental Health Center and published *Environment Writer* for environmental journalists. I saw a need to better help environmental journalists around the country “network,” and learn from peers. Tom Harris of the *Sacramento Bee* had brought to my attention the value of *EW* in doing this, and the formation of SEJ greatly improved prospects for doing so.

Robert Engelman: I was a science, health and environment reporter for Scripps Howard News Service (SHNS) in Washington. An op-ed I wrote for the *Wall Street Journal*, I've always surmised, brought me to the attention of David Stolberg, a Scripps Howard executive, who was at that point already discussing with Jim Detjen and others about founding SEJ. We knew each other slightly already as he occasionally visited the DC bureau from his base in Cincinnati. David asked me if I would be willing to join the small group and make the DC SHNS bureau a temporary office while SEJ organized itself and applied for 501(c)(3) status. I, of course, was happy to be asked. After meeting with Jim and others in some early organizational gatherings in DC I took on the role of secretary to manage the “office” (my desk) and much of the phonework and paperwork required to get the organization going.

Bowman Cox: I was launching a second environmental publication for a trade newsletter publisher in Washington. After working briefly in local news and association communications in



“The late 1980s were marked by the Exxon Valdez oil spill, the growing hole in the ozone layer and other environmental catastrophes.”

– Jim Detjen

Oklahoma, I had discovered a career path in the trade press where I could write about issues of national importance. I loved my work and I wanted my peers to know there was another option besides local news or PR. I got involved with SEJ to help build connections and facilitate information sharing between the environmental trade press and the general news media.

Julie Halpert: I was working as an environmental journalist at *Inside EPA*, a trade journal in Washington, D.C., my first journalism job out of college. I was approached to start SEJ when I was relatively new to the environment beat. At the time, there was little emphasis on the importance of environmental news. We were still reeling from President Reagan's moves to ratchet down EPA regulations. There was just a beginning of recognition of the importance of public understanding of these issues. I thought the time was ripe for an organization that helped to put these issues in the forefront.

Tom Meersman: Working as a reporter/producer at Minnesota Public Radio in St. Paul. I knew that there were many reporters writing great stories about the environment, but outside of national media, much of the regional work was difficult to access. I wanted to know more about what other environment reporters were doing, who they were and how we could learn from each other.



Phil Shabecoff

What was SEJ's most important contribution over the past 25 years?

Shabecoff: Bringing environment into the mainstream of journalism and providing guidance and standards for a generation of reporters and editors.

Detjen: Creating a network to help support environmental journalists around the world.

Ward: Establishing a sense of community and shared successes and challenges during an especially challenging time for traditional news media outlets.

Engelman: Helping environmental reporters (and reporters occasionally covering environmental stories but interested and wanting to do more) become part of professional journalistic community and gain both pride in their work and needed education for the task.

Cox: Information sharing.

Halpert: Advocating for the importance of making environmental coverage in mainstream publications a priority.

Meersman: Its rich annual conferences, which offer something for everyone, no matter what level of experience they have or what "platforms" of journalism they practice.

What do you think will be SEJ's role in the next 25 years?

Shabecoff: Helping a new generation of journalists keep the public informed about what is happening to the environment and what is being done and not being done about environmental issues.

Detjen: It will continue to evolve as news technologies change. But its central role of assisting environmental journalists and educating the public about critical environmental issues will continue.

Ward: Continuing to adapt to the quickly changing nature of how the public accesses and consumes news and information on environment and energy, natural resources, etc. Help in the transition to an even more digital news culture. Try to keep pace of changes still in their infancy, but certain to continue and to provide daunting challenges.

Engelman: Similar. I expect the work to expand and the stories to grow in number, complexity and breadth – requiring more continuing education and community interaction.

Cox: There will be more information sharing, particularly around sustainable business models for environmental journalism.

Halpert: Trying to adapt to the fast-changing journalism landscape, as publications have migrated online and there are fewer resources

for dedicated environmental journalists. With the significant dwindling of the environment beat, there will be significant challenges for SEJ to tackle.

Meersman: More of the same, I hope, evolving to meet the needs of writers, producers and academics as journalism changes.

What do you think has been the biggest environmental story of the past 25 years?

Shabecoff: No question it is climate change.

Detjen: The growing importance of climate change and its impact worldwide.

Ward: No question – climate change.

Engelman: Climate change, in all its aspects. But I would argue that the environment itself is the real story – the way the influence of human activity has altered global and local environments well beyond changes in the atmosphere and climate.

Cox: How or whether to deal with greenhouse gas emissions from consumption of fossil fuels.

Halpert: The scientific consensus around climate change. Never has science been more certain on an environmental issue.

Meersman: Climate change.

What do you think will be the biggest story in the next 25 years?

Shabecoff: I am afraid it will still be climate change, as well as the continued toxification of the environment.

Detjen: Climate change and its widespread impact.

No question – continued adaptation to climate change and related water resources impacts.

Engelman: More of the above, more intensely (unless scientists are greatly mistaken about the human-biophysical interface). The environmental story seems likely to increasingly interact with more immediately understandable human stories, such as natural disasters, conflict, migration and institutional efforts to grapple with mitigation and adaptation of all kinds.

Cox: How or whether to deal with greenhouse gas emissions from consumption of fossil fuels.

Halpert: I think climate change will continue to dominate the news, as we see the unfolding impacts. But another big area will be transportation, as we try to make our modes of transport more sustainable. Self-driving cars, which can significantly reduce emissions as driving is made more efficient, are on the horizon and that bears tracking.

Meersman: Climate change.

Bowman Cox lives in Rockville, Md., and works at Informa, a multinational publisher based in the U.K.

Founding SEJ president Jim Detjen, retired, is Knight Professor of Environmental Journalism Emeritus at Michigan State University, in Okemos, Mich.

Robert Engelman is senior fellow at Worldwatch Institute in Washington, D.C.

Julie Halpert is a freelance journalist in Ann Arbor, Mich.

Tom Meersman is a reporter at the Star Tribune in Minneapolis, Minn.

Philip Shabecoff is now an author living in Becket, Mass.

Bud Ward is editor of Yale Climate Connections, living in White Stone, Va.



Bud Ward



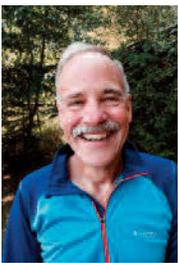
Robert Engelman



Bowman Cox



Julie Halpert



Tom Meersman

Regional Gathering Fuels New Approaches to Storytelling

By MARIA VILLASEÑOR

Innovation in environmental journalism was the key theme of a day-long SEJ regional gathering at New York's CUNY Graduate School of Journalism in July. The event, dubbed "Digital Terrain: Navigating the New World of Environmental Storytelling," brought more than 70 journalists together for a hands-on workshop that focused on collaborative brainstorming of environmental story ideas for digital platforms.

The day began with inspiration from a group of digital innovators — Charles Homans of *The New York Times*, "The Adaptors" podcaster Flora Lichtman, WNYC's Ariana Tobin, Mediastorm's Joe Fuller and Shane Shifflett of *Huffington Post*. With the help of moderator and SEJ board member Meaghan Parker of the Wilson Center, the presenters walked participants through the process behind several of their most creative environmental news projects.

The opening talks were meant to serve as a call for those environmental journalists in attendance to explore this new landscape of storytelling techniques, such as using animation to bring complex ideas to life, interactivity to engage audience and shape a story, and unorthodox video to reach untapped communities.

Despite the availability of countless new digital tools, the speakers warned that innovative techniques should be used deliberately and with good reason. Storytelling and journalism basics still matter; use compelling characters and an arc to tell a story that makes people care, they suggested.

Workshop teams collaborate on innovative story ideas

To put these notions to the test, conference-goers then spent the heart of the day working in team breakout sessions to brainstorm, develop and test out engaging digital environmental stories of their own.

Each team worked with environmental-journalist facilitators to develop a pitch for a story that could be told in an engaging way through digital means. Ideas came fast and furious at first, but then over a couple of hours were pared down to a single cohesive story, with its most compelling components and presentation.

Pitches ultimately ranged from a profile of climate impacts on Miami, the infamous glacial "snow mass" in Boston and drought in Puerto Rico, to the environmental footprint of pets, breaking the plastic habit and the explosion of invasive vines.

To get some rough feedback on their pitches and encourage further refinement, each team gave its idea a trial run with another of the breakout groups.

The real test, though, came in a final "pitchfest" session at the end of the day. Each team got a few minutes of rapid-fire feedback from a panel of top editors such as Kevin Berger of *Nautilus*, Virginia Hughes of BuzzFeed, Brian Storm of MediaStorm, Matthew Schuerman of WNYC and Jennifer Bogo of *Popular Science*, who moderated the discussion.

Berger, for instance, noted that while he sees plenty of environmental and science pitches, he is always looking for something that makes him care about the story. The notion that audiences share



Teams of journalists at the SEJ workshop spent much of the day brainstorming stories, before pitching to a group of top editors. Photo: © Sharon Guynup

the writer's empathy for the subject is never enough, he warned — there needs to be an element of the story that makes a person truly want to read it.

BuzzFeed's Hughes similarly advised writers to make sure their pitches have a sense of immediacy, something that makes the reader feel an emotion very strongly. "The kiss of death for us is the interesting but not urgent story," she added.

Storm said his company takes the opposite approach to BuzzFeed, preferring to tell long-form tales about "interesting things that aren't urgent." He asks himself: Is it universal? Is it something that touches the human condition? And will it be something to talk about 20 years from now?

Medium also matters, as WNYC's Schuerman pointed out, suggesting that for radio one has to be mindful of stories that play well aurally, for instance by incorporating environmental sounds like those of a beach or a bird. And because radio doesn't let listeners re-read sentences about complex topics, he said metaphors can be used to break down ideas and give listeners a visual analogy to better understand the story.

The gathering concluded with a wrap-up and a meetup for a dozen or more participants at a nearby watering hole, including many of the workshop's organizing team, which was led by *SEJournal* editor and CUNY faculty member Adam Glenn, board members Bogo, Parker, Kate Sheppard of *Huffington Post* and Gloria Gonzalez of Crain Communications, freelancers Sharon Guynup and Jenny Chen, Rene Ebersole of *Audubon* and Lois Parshley of *Popular Science*. Freelancers Sam Eaton and Emily Gertz also served as breakout team facilitators, along with Chen, Glenn, Guynup and WNYC's Tobin.

María Villaseñor is a former print reporter and now is a freelance multimedia journalist. She recently completed a master's at the CUNY Graduate School of Journalism and is currently reporting on an investigative series covering mold in NYC public housing for the NY Daily News. Contributing to this report were Rene Ebersole of Audubon and Gloria Gonzalez of Crain Communications.

Controversial Newspaper Campaign Takes on Climate ‘Fatalism’

By JAMES RANDERSON

“We were tenacious, it’s true. When we started a campaign we would persist to the point that the issue became unignorable, and so became a problem, and so had to be resolved.” — Harold Evans, former editor of *The Sunday Times*, whose long-running campaign at that newspaper several decades ago eventually won compensation for the victims of thalidomide and their families.

It was Harold Evans that Alan Rusbridger — the editor-in-chief of *The Guardian* until June this year — had in mind when, in the run up to Christmas, he began musing on how the newspaper could embark on a truly impactful editorial push on climate change. That push was to become the paper’s Keep it in the Ground campaign (see <http://j.mp/GuardianCampaign>).

It was now or never. In early December, the news had leaked that Rusbridger would end his tenure in charge of the paper after two decades. Now, at home and over a glass of Christmas Eve cheer, he emailed a group of journalists from across the organization with a challenge:

“Sometimes there’s a story so enormous that conventional journalism struggles to cope with it, never mind do justice. The imminent threat to the species is the most existentially important story any of us could imagine telling — for our sakes, for our children and for their children. But, as journalists, we also know that we sometimes tire of telling, and that people tire of reading.”

Despite the scale of resources that *The Guardian* has thrown at the environment beat — more specialist reporters and editors than any other mainstream newspaper in the world — Rusbridger could not help feeling a sense of regret that the paper had failed to really get to grips with the subject.

Partly as a result of the media’s failure, politicians around the world still don’t treat the subject with the seriousness it deserves and many readers have disengaged from the topic.

Rusbridger wanted to have one last crack at changing that. “[I] have an urge to do something powerful, focused and important with the *Guardian* while I’m still here. And it will be about climate change.”

Editors sought edge, direction for climate reporting

What followed were a series of meetings and discussions that cast a wide net across the editorial staff — not just environment reporters but the comment desk, designers, coders, the social media team, investigative reporters, business desk and many more.

Rusbridger wanted us to pool our skills and create new ways of telling the climate story that would engage readers afresh.



An extensive social media campaign was key to a newspaper’s climate campaign; to date its divestiture petition has been signed by nearly 230,000.

Photo montage: courtesy of James Randerson, *The Guardian*

The direction of travel was clear but what would we actually do? An editorial campaign was one option but we knew it would be controversial. Would it be better to stick to what we are good at — reporting, revelation, uncovering and presenting new facts to the world?

The Guardian had recently seen great success with its international campaign against female genital mutilation. Just 19 days after it launched, the UK’s education minister had delivered on the campaign’s main ask — despite initial reluctance. Could we do something similar with climate?

We all knew that in the well-trodden territory of climate campaigning a win would not come so easily. But the consensus was that a campaign would give an edge to our reporting and provide a clear direction around which we could hang the broader editorial push.

Campaigning journalism is not unusual in the UK. *The Times*,

for example, has campaigned for safer cycling provision in U.K. cities; the now-defunct *News of the World* campaigned for the introduction of “Sarah’s law” to allow parents to know the identity of convicted pedophiles; and the *Daily Mirror* has campaigned against the far-right British National Party.

But taking an overt stand on an issue is much more alien to the U.S. journalistic tradition, and it is here that the campaign encountered most raised eyebrows, bafflement and sometimes mild hostility. That exoticism, however, has worked to our advantage and helped to get *The Guardian*’s coverage noticed.

Zeroing in on divestment

The next question was what to campaign for.

There were many suggestions on the table: Some wanted to influence the agreement that governments would sign at the U.N. climate talks in Paris for example. Others wanted the paper to come out in favor of nuclear power.

After much discussion, we opted to back the global fossil fuel divestment movement — a rapidly-growing group of institutions that had taken the bold decision to move their investments out of fossil fuel companies.

The logic behind the cause was simple. The reserves of coal, oil and gas around the globe are already enough, if burned, to tip us far over the two degree centigrade threshold for “dangerous” climate change — in fact there’s three to five times more than would take us past the limit.

And yet, in a fit of collective madness, the fossil fuel industry is continuing to search for more coal, oil and gas. Shell’s push into the

Continued on page 20

The Art of the Pitch

Tips for Crafting Successful Feature Story Queries

By SUSAN MORAN

Let me set the record straight: I don't like pitching.

Don't get me wrong. I loved having freelancers pitch me. When I was an editor at a magazine years ago, it made me feel important, wanted, abundant with options.

But I hate feeling obsequious and solicitous toward editors when I pitch, knowing my position (bottom) in the professional hierarchy. I also don't like to admit how easily I fall into the ego trap of pitching. My mental tape goes like this: "Editor X accepted my pitch, ergo, I'm OK." Conversely, "Editor Y rejected my pitch, ergo, I suck."

As a journalism instructor at a university for seven years I cautioned students repeatedly that they must have thick skin, that they shouldn't go into journalism to be liked.

Still, nearly three decades into this profession — the past 12 as a freelancer — I sometimes leave my "thick skin" at the front door. For me, the hardest part is not the rejection but the silence.

"Waiting for an editor's response takes me back to sitting against the wall at seventh-grade sock hops," says fellow freelancer Jane Braxton Little. "And while the proverbial nudge often gets results, I find it humiliating to have to do it."

If you have worked with an editor successfully before and earned their trust, you might get away with brainstorming story ideas via email or phone.

But for those who are launching their freelance career — and for that matter, for most veteran writers when they try to crack a new publication — you can't escape writing a refined, convincing, colorful query letter, aka, The Pitch.

Taking the time to craft a well-reported and elegant pitch has an important upside: You've done a good chunk of the work upfront, mapped out your course. Assuming you get the green light from the editor, you can now use your time more efficiently. You can let your creativity and curiosity loose and have more fun.

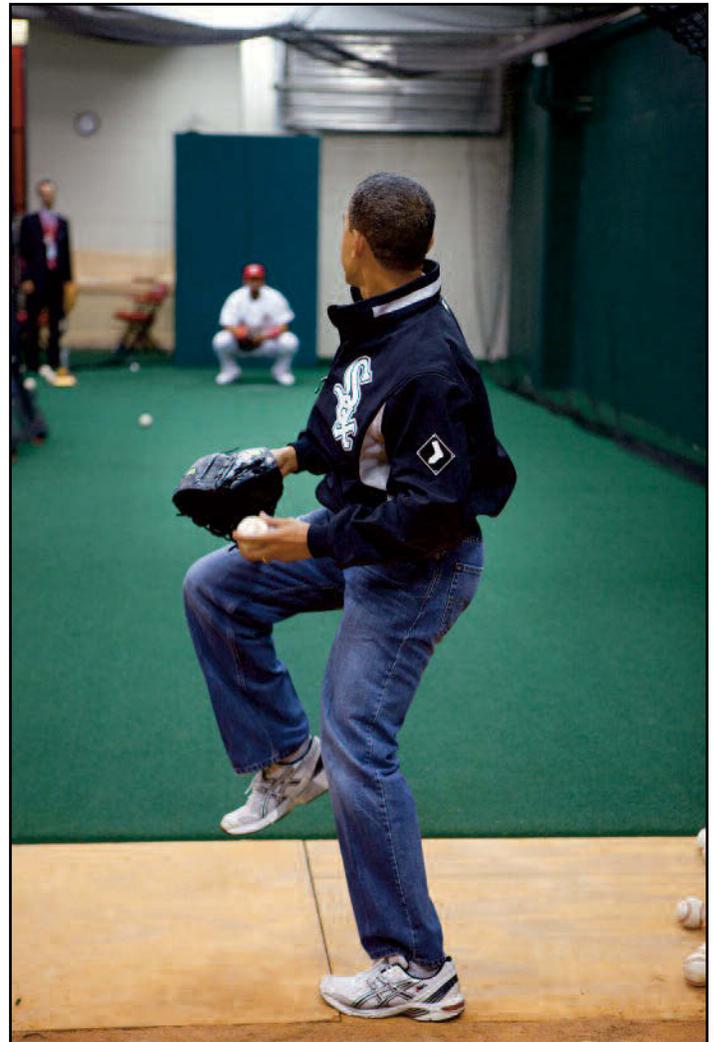
Pitch a story, not a topic

Finding a story within a topic is for me still the most challenging step in pitching.

No one wants to read an "information dump." Topics are as plentiful as dandelions on your lawn in the summer. My electronic file cabinet is full of hundreds of them: carbon sequestration, endangered species and nitrogen, for instance. I often add news articles, scientific reports, legislation and other relevant material to these files.

Eventually, some fresh angle, a news peg and/or a surprising and colorful character can become the ticket to turning that broad topic into a real story.

So, how do you shift from a topic to a story? A feature story



Even the most powerful person in the free world has to prepare his pitch carefully. Southpaw Barack Obama practices throwing out the first pitch before the start of the MLB All-Star Game in St. Louis on July 14, 2009.

Official White House Photo by Pete Souza

(news articles are less nuanced and in-depth) contains key journalistic elements: characters, a narrative arc (with a beginning, middle and end) and a news hook.

Let's say you want to write about advances in radio and GPS telemetry for tracking wildlife. You may find that really cool, but it's a topic, not a story.

You need to ask yourself — and explain to the editor — why people would want to read about radio telemetry, and why now?

What's new, in terms of technology, scientific findings, etc.? Are these discoveries changing prospects for declining species, such as tiger sharks in Hawaii?

With more digging you may learn that a new technology is being piloted by a paraplegic scientist who was paralyzed after his surveillance plane was shot down in Afghanistan. In graduate school after the war he developed classified GIS technology, which he had created while serving in the U.S. Army, into a satellite-based tagging device for commercial use. Now a growing cadre of wildlife biologists is using the technology and thanks to it, more wild critters may be saved from the brink of extinction.

Now that's looking more like a story. You've introduced a news hook, a strong character, the broader impact and relevance.

Thomas Hayden, who teaches writing at Stanford University, offers many helpful pointers in his must-read chapter called "Making the Pitch," in "The Science Writers' Handbook: Everything You Need to Know to Pitch, Publish and Prosper in the Digital Age." [Disclosure: I contributed to the book.]

"You won't always know the end of the feature story you're pitching, but you do need to know enough to show that it is a story, not just a hunch," he writes.

Ready, aim...

Before writing a pitch, I find it useful — necessary, even — to identify a particular publication and tailor my pitch to that publication.

For example, some (*Popular Mechanics*, *Popular Science*, *MIT Technology Review*, etc.) are very technology-focused and thus might be keen on a story centered more on technology than on charismatic creatures or a paraplegic Army pilot-turned-marine biologist.

Many publications have an archive search function on their website. Use it. If they don't have one, go to the library and read past editions.

Otherwise, you run the risk of receiving this dreaded reply from editor X: "If you had read the magazine you would have known that we published a similar story a year ago."

Further, if the publication has published something similar in the past year or two, indicate lower down in your query letter how your story is different from those.

Let's say editor X says your pitch is interesting but too similar to something a writer is currently working on. If it were me, I'd take a deep breath, nurse my ego and try to trust that the editor hasn't instead assigned my idea to another writer (freelancers' greatest, but largely unsubstantiated, fear).

Then I would gear up to pitch it elsewhere, while it's still a timely subject.

I call this the "iterative pitch." If at first you don't succeed, try, try again. I take heart in inventor Thomas Edison's praise of failure: "Negative results are just what I want... I can never find the thing that does the job best until I find the ones that don't."

With story pitching, it's not a matter of success or failure,

necessarily, but of finding the right publication (and editor) for your story. And of striking the right blend of "patience, persistence and luck," as colleague Douglas Fox writes in Hayden's chapter in "The Science Writers' Handbook."

Then again, there are great story ideas executed poorly in a query letter, and there are well written query letters about weak story ideas. Sometimes a rejection does mean it's time to fold and move on to the next story idea, or at least let the query sit for a few weeks or months before a new entry point emerges.

Are you a sea urchin or a shark?

Every species has its own long-term survival strategy. Some freelancers pitch several stories a week. Others take several weeks to cook each pitch.

There is no one "right" strategy. Follow the path that plays to your passion, talent and financial needs.

I'll steal Hayden's apt metaphor of sea urchins and sharks. Sea urchins are "famously fecund," casting millions of eggs or sperm into the sea at

once, hoping that a few will collide and grow into mature adults.

By contrast, sharks "are more circumspect." They often brood their eggs internally and give birth to just a few pups in their lifetime.

If you're seasoned and talented enough to write for *The New Yorker* or *National Geographic*, you're likely pursuing more of a shark strategy.

If you're an early-career freelance journalist, and/or you prefer covering news, you likely live more like a sea urchin.

Whichever survival strategy you pursue — shark or sea urchin, or some combination — aggressively hunt story ideas wherever you go, and channel them into query letters. And have thick skin, a child's sense of wonder, and the tenacity of a Chihuahua after a bone

With story pitching, it's not a matter of success or failure, necessarily, but of finding the right publication (or editor) for your story.

Useful resources

- "The Science Writers' Handbook: Everything You Need to Know to Pitch, Publish and Prosper in the Digital Age" (De Capo, 2013)
- The Open Notebook (www.theopennotebook.com) — A website by and for science writers, on the craft of pitching and writing stories. It includes a database of query letters written by freelancers.

Susan Moran is a print and radio journalist based in Boulder, Colo. She covers energy, the environment, agriculture, biodiversity conservation, climate science and business for The New York Times, The Economist, Popular Science, Discover and other publications. She is a host and producer for KGNU radio's "How On Earth" science show and a co-founder of Bracing for Impact, a crowd-funded independent journalism project hosted on Beacon.

Chasing Narrative:

Turning a Scientist's Struggle into a Lyrical, Multimedia Tale

As a feature writer for The Boston Globe, Sarah Schweitzer often writes long form, intimate stories about the people who make news. But in 2014, a different kind of mammal figured prominently in her work. She spent part of last year writing “Chasing Bayla,” about one of the most endangered whales in the world — the North Atlantic right whale — and one scientist’s effort to save it. The end result was a Pulitzer Prize finalist in feature writing, winning praise for “a beautiful story fortified by expansive reporting, a quiet lyricism and disciplined use of multimedia.” (View it online at <http://j.mp/baylabostonglobe>). Schweitzer joined the Globe in 2001 and has covered politics and education. She previously reported for the St. Petersburg Times in Florida and the Concord Monitor in New Hampshire. She grew up in Texas and now lives in Etna, N.H. with her husband and two kids.



Marine biologist Dr. Michael Moore on his 60' sailboat Rosita observing North Atlantic right whales in the Bay of Fundy near Grand Manan Island in August, 2014. Photo by Essdras M. Suarez, *The Boston Globe*

SEJournal: How did the idea of doing a story on scientist Michael Moore and Bayla the whale come about?

Sarah Schweitzer: My editor and I were talking about story ideas and he said he’d love to read a story about whales. He was more musing than directive, but the notion appealed to me and I called Woods Hole Oceanographic Institution on a lark. The public relations person said she had just the person for me to talk with. In our first conversation, Michael Moore said, “I’ve failed.” In that moment, I knew I had to write his story. He was among the most revered scientists in his field. And yet, he felt the sting of failure. How could that be? Along the way, I fell in love with Bayla.



Boston Globe reporter Sarah Schweitzer

SEJournal: The story is notable for keeping on narrative and not getting too deep into, for example, regulation of right whales. Was that challenging to do and, if so, how did you balance narrative and explanation?

Schweitzer: I began the story with a focus on narrative — of telling the arc of how Moore came to his love of whales and his quest to save them. Having this tight narrative focus made it easier to keep the spotlight on Moore and not get deep in policy,

which can be a tough sell in a narrative story. In this way, regulations became the background and necessary only so far as they propelled Moore and his choices.

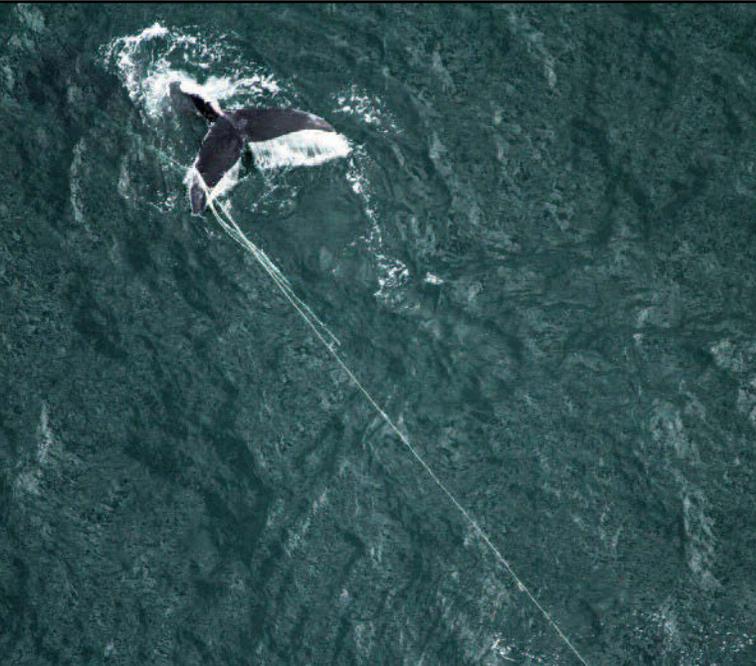
SEJournal: What did it take to make the piece so interactive, from hearing whale sounds to having an entire visual story parallel to the written one?

Schweitzer: In my early reporting, I discovered gripping video of Bayla’s rescue and a lot of photographs of Bayla from the start of her life to her end. It was clear, even to me, that there was visual potential. Multimedia people were interested and we bounced around ideas. When I produced the written story, they conceptualized the parallel visual story.

SEJournal: Do you think the fact that you do not cover environment as a beat helped you? Hindered you? How?

Schweitzer: I think it helped in the sense that I approached the story from a narrative angle, which allowed the story to breathe and not get bogged down in policy. That said, regulations were an important backdrop and it took me time to understand them — a step beat writers could have tackled more easily.

SEJournal: How long did the story take to report and write, and



Top, bottom left: During an aerial survey on Christmas Day in 2010, wildlife officials spotted the year-old Bayla entangled tightly in fishing lines.

Bottom center: After sedation, biologists seeking to free Bayla from the fishing gear wrapped around her were able to approach her safely.

Bottom right: Once in close proximity, the team was able to start cutting away the fishing lines entrapping Bayla.

Photos: NOAA





Bayla's size denied her a dignified burial. Only her bones remain, now on display at the Georgia Aquarium in Atlanta. Photo courtesy Georgia Aquarium

"There's something about a right whale's tail that's just gorgeous," Michael Moore says. "Michelangelo could have sculpted it."

Photo by Essdras M. Suarez, *The Boston Globe*

what challenges did you have?

Schweitzer: The story took six months from start to finish, with interruptions for other stories. I spent the bulk of the time reporting – visiting with Moore and other whale scientists, gathering history on Bayla, acquiring video of her rescue from NOAA. There were all the usual hurdles, most of all, getting normally private people to share their lives with the public – a leap of faith if ever there was.

SEJournal: What advice would you give to reporters eager to take on a narrative environmental project but who may not have dedicated time to do so?

Schweitzer: It's great to get dedicated time, but if you can't, allow the story to take over your mind. Talk about your characters with family and friends (to the point of harassment if necessary; ask my husband). Consider your characters' motives while you're exercising; imagine their childhoods when you're falling asleep. The act of thinking about your characters keeps the story alive and hopefully prompts questions to ask of sources and spurs ideas for how best to tell the story. In this way, when you are freed up and have time to plunge back in, you're ready to go.

"Inside Story" editor Beth Daley is reporter and director of partnerships at the New England Center for Investigative Reporting, a nonprofit newsroom based at Boston University and affiliated with WGBH News.

Interview Class Helps Make Science Clearer

By BOB WYSS

It was a magic opportunity to teach, and it happened in one of our first interviews.

A journalism undergraduate student at the University of Connecticut was interviewing a graduate science student about her research into mosses. They were doing the interview live, in front of a class of journalism and science students learning about interviewing techniques.

The researcher said that mosses were natural carbon sinks.

The journalism student paused, and it was clear to some of us that he had no idea what a “carbon sink” was. After a moment, he continued the interview in a different direction.

Afterwards the journalism student admitted he did not know anything about carbon sinks, which trap carbon before it rises into the upper atmosphere and contributes to global warming. He had missed the opportunity for an interesting angle. The graduate student had also erred by failing to see the confusion in the reporter’s face, or if she did see it, not seeking to be more clear about the significance of a carbon sink.

It was, as my colleague at UConn Margaret Rubega pointed out, a lesson so important that it would not matter if students learned nothing else the rest of the semester. They needed to know: Journalists at times have to admit their ignorance; interviewees need to be clear in their communication.

Improving interviewing skills is a concept I have been team teaching for the last few years along with Rubega, a well-regarded ornithologist with a strong interest in communication, and Robert Capers, a former Pulitzer Prize winner at the *Hartford Courant* who left to get a doctorate in botany and is now at UConn.

What we are doing is also part of a growing national trend, especially on the science side. The National Science Foundation insists that the scientists it funds must make their research available and understandable to the public.

Increasingly, journalism schools and professors are developing communication programs for scientists. Instructors at Stony Brook University use acting improvisation to get scientists to be more expressive and clear in their communication. At the University of Miami in Ohio, workshops bridge the gaps sometimes found between scientists and journalists, and the results have even



Science graduate student Chris Field (left) being interviewed by journalism student Caitie Parmelee.
Photo: courtesy Bob Wyss

included poetry and art exhibits.

Teaching how to ask right questions

My goal at UConn was primarily aimed at my journalism students, who rarely seem to get enough training or experience in interviewing. Too often we spend more time on a student’s writing, when the core problem is failing to ask the right questions.

Rubega, an associate professor in the Department of Ecology and Evolutionary Biology, had learned early in her career that she needed help in talking to reporters. The Leopold Leadership Program awarded her a fellowship that provided a range of communication skills including how to do an interview. Now she is a strong advocate for working with both graduate students and mid-career colleagues.

The course, which we’ve developed through trial and error over the last five years, has ranged from one to three credits and often combines an undergraduate journalism course with a graduate science seminar.

The course pairs a journalism student who wants to learn more about interviewing with a graduate science student (and sometimes a science faculty member). The scientist provides some basic background information, either by supplying a research paper or directing the student to a blog or website.

The individuals sit down in a neutral location for a videotaped 20- to 25-minute interview. The student, with assistance from a technician, sets up the camera and hits the record button. Teams use a tripod, a table or lapel microphone and a range of cameras including DSLRs and even mini iPads.

The journalism student then prepares a 500-word news story or a two-minute video report. The story goes through at least two drafts. The video has no voice-overs or B-roll and simply shows what portion of the video would likely be used in a news story. Other students get a copy of the story before class meets again.

In class we review the interview video and discuss what worked and what did not work. For instance, I count the number of questions that were asked, which helps us determine how successful both individuals were in accomplishing their missions. We look for

Continued on page 22

Journalists at times have to admit their ignorance — and interviewees need to be clear in their communication.

Iconic Author, Former Farmer, Plants Seeds for a 'More Attractive' World

"One of the world's most influential thinkers" is how the Washington Post once described Lester Brown. The iconic 81-year-old is recipient of 25 honorary degrees and author of 54 books (although, amazingly, he never learned to type). Brown, in the wake of the recent shuttering of his Earth Policy Institute after a 14-year run, spoke with SEJournal book editor Tom Henry for the latest installment of "Between the Lines," a question-and-answer feature with authors. Brown talked about how he came from a New Jersey family steeped in agriculture, how he developed a passion for reading and writing at a young age despite being raised by parents who never made it to high school and how his farming background and work ethic set the framework for his jet-setting career across the globe.

SEJournal: Looking back, is it hard to believe a modest tomato farmer from New Jersey wrote dozens of books and became hailed as one of the great pioneers of the environmental movement?

Lester Brown: No one ever asks me about my parents. Neither of them ever graduated from elementary school. Being born in this country is good, in that respect. If you could choose a country to be born in, this would be it.

SEJournal: So tell us about your parents and how influential they were.

Brown: Pop was the oldest of four children. When his mother died, he was 12 and dropped out of school and started working as a farmhand to help raise money to support the other three. That kind of put an end to his formal education. Mom made it through seventh grade and grew up on a farm.

One of the interesting things, looking back, is there was never any pressure put on me by my parents to reach certain levels. I was free of all of those expectations. That left me to set my own goals. My goal was to get an education, not just in the formal education, but to get to know the world. My interest went far beyond the local community.

The other thing I see is that growing up on a farm is an education unto itself. You learn a lot. When the opportunity came in 1956 to go to India and live in villages under the auspices of the Interna-

tional Farm Youth Exchange program, I was eager to do that. Those six months, living in three different villages in India, was educational in so many ways.

SEJournal: What drove you to explore and to have a passion for the outdoors?

Brown: As a youngster, I read voraciously. I read a lot of biographies. When I was eight years old, I remember telling myself "I want to be someone." Reading all of the biographies I did began to rub off on me. I began to subconsciously identify with the people I was reading about. The motivation was there thoroughly. I didn't want to be the valedictorian of my class. By that, I mean I had pretty good grades — but I wanted to learn by my own terms. It consisted mostly of reading books, especially biographies and books about history. Every teacher in grades 3 through 8 said the same thing, that I rushed through my assignments so I could read on my own. That and growing up on a farm was a rich combination.

SEJournal: What's made you tick as an adult, even after you achieved so much success?

Brown: I wanted to get to know the world in the broadest sense. When I was at Rutgers majoring in general agricultural science, I remember taking 24 science courses in 19 fields. I resisted the narrowing effect of our educational system. I avoided that by getting three degrees in three fields.

SEJournal: Your most recent book, "The Great Transition: Shifting from Fossil Fuels to Solar and Wind Energy," offers an optimistic view that the transition — while difficult — is happening now and will gain more momentum. But don't you fear that — human nature being what it is and greed coming into play —

the transition will be even rougher than you expect?

Brown: It could be. But one thing that's different now is that this energy shift from coal and oil to solar and wind is, in part, market-driven. That's what changes everything. There are many places where solar panels on a roof provide cheaper power. There also is the development of batteries. There's quite a lot of money going into batteries now in research and development, as well as manufacturing.



Lester Brown at a European Parliament conference in 2008.

Photo:  Rebecca Harms, European Parliament via Flickr

SEJournal: Will this be your last book now that you've retired and closed the Earth Policy Institute? Or do you expect to do others?

Brown: [Chuckling] Retirement is spelled with a lowercase "r." I live about a mile north of Dupont Circle [in the District of Columbia]. I may look for a place I can affiliate with and still have a desk and maybe an assistant. I'm working on a book about water now, the world water situation. It's in draft. That will be the next book. Beyond that, I don't have a book in mind but I intend to keep writing. I'm in the position of having a network of publishers around the world who will almost automatically publish a new book if I do one. That's a major asset. Most of my books now are published in 20 to 30 languages.

SEJournal: Was there any thought to keeping the Earth Policy Institute open without you being there?

Brown: I was not all that keen about closing it, but I think the board was a little worried. You know, I'm in my 80s. It was created 14 years ago specifically for me — by the foundations that support it.

SEJournal: In a 2013 interview with SEJ board member Kate Sheppard of the *Huffington Post*, you said you never aspired to become an author, don't like writing and still don't — that if you had the choice between speaking and writing, you would be a speaker. But haven't you found writing to be therapeutic over the years?

Brown: Well, it's very satisfying. If you have ideas and want to share those ideas with other people — which I do — you really don't have much of a choice. You not only have to write, but you have to write books. Books are the only segment of the information sector where there is widespread translation into other languages. You can do magazine articles. Sometimes, they'll get translated into two or three languages. But as a general matter, magazine articles do not get translated into other languages. If you want to reach a global constituency, you sort of have to do books.

SEJournal: Has the writing process become easier for you?

Brown: [Chuckling] Well, one would hope so. But I don't think it's changed very much over the years. I mean — you get the outline in mind, you think it through, you share it with colleagues and get their reaction. Once I get that, I take a letter-sized pad and start making notes of what I want to put into the chapter and kind of structure it. I dictate it. I don't know if I've ever written a full paragraph. I guess I'm a dictator, not a writer [laughs].

SEJournal: I think people would be interested in knowing about someone who's written 54 books and has been dictating instead of writing. Is there anything else you can say about your process?

Brown: I don't know if my way of doing it would work for everyone. I don't have a typewriter. I don't know if I've ever typed a paragraph. From the beginning, when I joined the Asian branch of the Foreign Agricultural Service, we had a very progressive branch chief. He hooked up all of the offices with dictaphones and had a couple of secretaries there. Whenever somebody dictated

something, they would put it on paper and get it back to the author. From day one, in the Department of Agriculture, I've always had someone around for dictation.

Incidentally, you mentioned Kate Sheppard. Kate and I grew up in the same community. We're a couple of generations apart. In fact, her father and uncle were tomato growers, as well.

SEJournal: A lot of journalists have ideas for books. What advice can you give them to make some of those books reality?

Brown: One of the important things after you've selected a topic is to get the structure of the book right. Make sure you have that before you actually start writing. It's easy to start writing and not really have that work done. You can get tangled up if you don't do that.

SEJournal: There are obviously many issues facing the planet. Which deserve the most attention and why?

Brown: I think water is the most underrated one. Water, climate change, population growth are the three that would come to the top. We're going to have to restructure the energy economy for climate reasons. But that's doable. People need to understand not being able to use coal and oil is not the end of the world. It may be the beginning of a much more pleasant and attractive world. Think of a city where cars run on electricity. It's much quieter. We take for granted the noise of cities now.

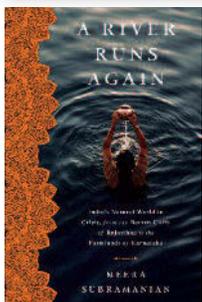
SEJournal: In your 2013 autobiography, you said the yardstick by which you judge yourself isn't by how many books you've written or talks you've given, but whether we are reversing the trends undermining our future. What does the world need to do to get back on track?

Brown: I think the big thing is the energy transition. One of the exciting things about that is the geography of the new energy economy is so much different than the old energy economy. Throughout most of our lives, we've been heavily dependent on energy from halfway around the world — Saudi Arabia and other countries in the Middle East. Now, suddenly, our energy source is above our heads [with solar power]. We're going to see a localization of the energy economy. That's going to affect international relations and a number of economic ties. In China now, they are getting much more energy from their wind farms than their nuclear power plants. That's a big shift now.

SEJournal: What are your future plans?

Brown: I think I can contribute most by writing. I've had the good fortune of getting to know the world, economically and also from the scientific point of view, from climate change to the water economy. One reason for doing "The Great Transition" was to show people there really is a transition and it's under way. I imagine we're going to see a century of change in the next decade. The water issue's going to be a much bigger issue than a lot of people realize. If I had to choose between which would be most disruptive, water or climate change, I would pick water — because it's more immediate. Most people don't realize how much the world is drying out from over-pumping.

— Lester Brown



A River Runs Again: India's Natural World in Crisis, from the Barren Cliffs of Rajasthan to the Farmlands of Karnataka
By Meera Subramanian
Public Affairs, \$26.99

Reviewed by CYNTHIA BARNETT

Three-fourths through her captivating exploration of environmental troubles in India, SEJ member Meera Subramanian is in Mumbai reporting on the catastrophic disappearance of vultures from the skies of South Asia when the director of the Bombay Natural History Society shifts the conversation from the species near extinction to the one that seems to be able to survive anything, anywhere.

“We’re like pests ... cockroaches, rats, and bandicoots,” Asad Rahmani, bird biologist, tells Subramanian. “You have seen the slums. Look at the horrible conditions we can live under and still have reproductive success. No other species has such huge tolerance.”

Rahmani adds: “For the Earth, that is the unfortunate part. If we had a very narrow tolerance level of pollution and food ... maybe we would take more care of the Earth.”

Subramanian can forgive Rahmani his loss of hope, as he remembers the enormous flocks of vultures of his youth, now nearly wiped out by a veterinary drug in cattle carcasses. The decimation has had cascading results, from swelling feral dog populations to more human disease.

There is even a spiritual toll, upending the Parsi tradition of laying their dead atop towers so that scavenging birds can naturally dispose of the physical remains.

Subramanian’s story of the piling up of bodies at the Parsis’ Towers of Silence in Mumbai — the silence now in the vulture-less skies — is somehow both gorgeous and grim.

Such is the brilliant balance of Subramanian’s first book.

Reporting on what at first seems to be intractable human and natural catastrophes in India, Subramanian never loses her own hope, which is pragmatic enough to keep her readers believing, too.

“A River Runs Again” is a clear-eyed exposé of environmental crises in a nation where six out of ten citizens lack clean water, a third live without electricity and less than half have access to a toilet.

But it is also a reverent homage to her father’s country and a radiant work of solutions-oriented journalism.

The book is well-organized into five major environmental challenges under the five elements of Hinduism: earth, water, fire, air and ether (“akasha” in the Hindu belief system).

With sandals-on-the-ground reporting from small farms to smoky village kitchens, Subramanian gives voice to ordinary Indians as she unearths micro-enterprises that are making a difference and exposes well-meaning efforts that are not.

Reporting on air pollution from home cook stoves — responsible for an estimated four million deaths a year — she cuts through the pricey idealism of multinational NGOs that have spent decades and millions of dollars working to bring “new and improved” cook stoves to Indian women who don’t want them.

“What if all those efforts went instead to finding ways to expand access to the proven technologies already cooking up food in the developed kitchens of the world?” Subramanian asks. Electricity for the six hundred million Indians who live without it

could, for instance, also solve the cook-smoke problem.

From the challenges of chemical agriculture to groundwater depletion, Subramanian’s solutions are generally indigenous, local and small-scale; in energy, the likes of solar, wind, bio-gas and micro-hydro.

Subramanian devotes her section on ether to population growth and the plight of women and girls in Bihar, the state with some of India’s youngest brides and highest fertility rates.

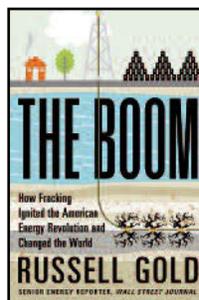
Bihar well illustrates why the education of girls and empowerment of women are such important stories on the environmental beat.

“Multiple studies have shown that the single most influencing determinant for the number of children a woman will have in her lifetime — superseding race, religion, nationality and class — is her education level,” Subramanian writes. “Education as birth control. Education is birth control.”

The book’s title comes from Subramanian’s inspirational section on water, a narrative built around villagers in Rajasthan who replenished their dry wells and brought the Arvari River back to life over many years with water-works projects modeled on ancient water-management techniques: small dams, water-saving trees, catchments that allow monsoon rains to seep back to the aquifer rather than wash away.

When the Arvari River flows again, a sight no young people in the village have ever seen, readers cheer — as we do for all of India by the end of this revolutionary book.

Gainesville-based Cynthia Barnett is a visiting University of Florida faculty member, an SEJ member and author of three books about water, including her latest, “Rain: A Natural and Cultural History,” reviewed in the Spring 2015 SEJournal.



The Boom: How Fracking Ignited the American Energy Revolution and Changed the World

By Russell Gold
Simon & Schuster, \$28.00

Reviewed by JENNIFER WEEKS

The dramatic spread of hydraulic fracturing (aka fracking) for oil and natural gas over the past decade has transformed U.S. energy prospects.

It also has sparked widespread debate over fracking’s environmental impacts at all levels, from backyards to regional water supplies to Earth’s atmosphere.

Wall Street Journal senior energy reporter Russell Gold has written a valuable account of how fracking became such a disruptive technology. In Gold’s view, fracking has benefited the nation by unlocking huge domestic energy supplies, reducing gas prices and generating thousands of much-needed blue-collar jobs.

But he also explores local health and environmental impacts, and the prospect that mining and burning abundant natural gas could worsen climate change.

“The Boom” provides a useful history of drilling for energy in the United States that shows how techniques and regulations have improved since operators first started enclosing wells in California in the early 1900s.

Gold calls the moment when basic fracking technology was patented in 1948 a turning point in energy production. “The age of the wildcatter was drawing to a close. The age of the petroleum en-

gineer had begun,” he writes. “From this point on, the industry would be defined by men convinced they had the tools and science to bend rocks to their will.”

Through the mid-1990s oil companies used thick gels to get more production out of wells drilled in permeable rocks such as sandstone. Then in 1998, Texas-based Mitchell Energy pioneered a new method: “slick-water” fracking, using four or five times the volume of fluid (mostly water) as gel fracks.

Wells fracked with gel might produce at total of 70 or 80 million cubic feet of gas in the first 90 days after a frack; the first well fracked with water produced 1.3 million cubic feet per day for the first 90 days. And the well was drilled in shale, an extremely “tight” rock that trapped oil and gas in tiny spaces.

Oil and natural gas companies quickly started using the new approach across the Barnett Shale in Texas. In 2002, they started combining the water technique with horizontal drilling through shale formations. That approach yielded even higher-producing wells.

But as Gold notes, few engineers could explain why the process worked so well. At a shale gas conference in 2008 where hundreds of engineers took an informal survey, 80 percent disagreed with the statement “I am confident that I understand reservoir drainage” (how gas moves out of shale formations through fractures and up into wells).

Gold visits many regions where fracking is taking place, including Sullivan County, Pa., where his parents own a farm.

He finds many landowners who initially welcomed the income from drilling leases but then were overwhelmed by the traffic, noise and property damage that follows when companies start fracking dozens of wells around them.

Gold described how Pennsylvania regulators scrambled to keep up with impacts from Marcellus Shale development, including millions of gallons of polluted wastewater from fracking operations and aquifers contaminated by sloppy drilling.

Gold also explores the growth of opposition. He recounts how fracking divided environmental groups, with some (notably the Sierra Club under then-president Carl Pope) endorsing natural gas as a bridge fuel that would help speed the shutdown of old, dirty coal-fired power plants.

But he also quotes advocates such as Bill McKibben and Pope’s successor at the Sierra Club, Michael Brune, who call natural gas a half-measure that will not reduce U.S. greenhouse gas emissions quickly enough to avoid disastrous climate change impacts.

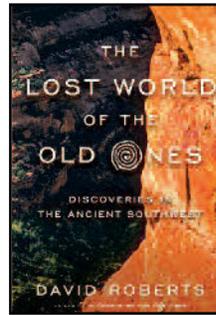
Gold sees natural gas as the best option for the next several decades, until renewables can be scaled up further and battery storage improves.

However, he argues, fracking has to improve. The industry needs better leak-detection tools, more data on public health impacts and more effective methods for reducing methane leakage (methane is a potent greenhouse gas).

“The industry has wanted to move extremely quickly to drill the wells —to beat the ticking clock of lease obligations, to meet or exceed Wall Street’s earnings forecasts and to begin generating a return on the money it invested in wells,” Gold writes. “It’s time to slow down.”

“The Boom” makes a persuasive case that fracking isn’t going away soon, and that understanding how it works is the first step toward reducing its harmful impacts.

Jennifer Weeks is a Massachusetts freelance journalist and former SEJ board member.



The Lost World of the Old Ones: Discoveries in the Ancient Southwest

By David Roberts

W.W. Norton & Company, \$27.95

Reviewed by KAREN SCHAEFER

On a warm May morning in 2005, three explorers traversing a dusty, trackless canyon on a ranch in southern Utah caught sight of a squat stone building, high on the wall of a thousand-foot sandstone cliff, tucked under an overhanging lip of sheer rock.

Hours later, the three companions — two seasoned climbers and an archaeologist — rappelled out over the cliff face, trying to get closer to the structure. What they saw was an ancient double granary, large enough to store a ton and a half of dried corn, but with no feasible way to access it.

If modern explorers couldn’t reach the site, how had the builders ever hauled stone to make the structure, much less filled and emptied the granary of its harvested corn?

Nowhere else in the United States are the artifacts of ancient cultures so abundant, so well preserved, and so deeply explored as those of the Four Corners region of the American Southwest.

Yet as freelance *National Geographic* travel writer, mountaineer, explorer, and author David Roberts attests in his new book, “The Lost World of the Old Ones,” fundamental enigmas about these early indigenous cliff dwellers still remain.

Chief among them is the still-unsolved puzzle of why the ancestral Puebloans and their northern and southern neighbors, the Fremont and the Mogollon, flourished for centuries, building small cities into the often inaccessible cliffs, decorating remote canyon walls with animals, birds, and other symbols — only to apparently abandon their homes between the 12th and 14th centuries.

Did a changing climate bring devastating drought, famine and warfare? Or were there other factors at work? Roberts lays out a page turner about cliff-dwelling cultures of the American Southwest.

Environmental journalists will appreciate Robert’s deep dive into the realization that past changes in climate may have shifted early Southwestern populations, but didn’t push them out or destroy them.

They’ll also get a close look at how modern challenges of rugged terrain, harsh climate and government bureaucracy are failing to keep these ancient living sites safe from both well-meaning visitors and antiquities thieves.

Among modern-day characters, you’ll meet retired cowboy Waldo Wilcox, who knows more about the abandoned Fremont settlements on his former Utah ranch than many experts.

You’ll also meet Calvin Watchman, a Navajo from Canyon de Chelly, who shows Roberts that even modern indigenous Southwesterners are still the ‘genius’ climbers that Roberts assumes the ancient people must have been.

And you’ll get a firsthand introduction to the still hotly debated theories surrounding the Chaco Canyon culture of New Mexico first posed by archaeologist Steve Lekson in his 1999 book “The Chaco Meridian.”

With its central complex of a dozen massive, multi-story pueblos and a huge network of roads radiating as far as 150 miles away to more than a hundred outlier pueblos, archaeologists have long

Continued on page 21

Feedback ranges from glowing to skewering

Arctic is just the most immediate and public form of this psychosis.

Divesting from these companies is a powerful signal that this state of affairs is unacceptable. It erodes their social license to operate and in the process harms their lobbying power with governments.

This is civil society putting its dollars where its mouth is and showing politicians that it wants radical action.

But there are self-interested reasons for divesting too. If the world gets to grips with climate change and keeps much of the oil, coal and gas under the ground then companies dedicated to extracting it will, all of a sudden, look severely over-valued. Many investors are already opting to get out of this “carbon bubble” before it bursts.

The divestment movement — driven to a great degree by the environmental group 350.org, which *The Guardian* is partnered with on the campaign — continues to gather considerable momentum. Over 220 organizations around the world have signed up including faith groups, universities, foundations and local authorities.

We decided to focus on the two largest health charities in the world, the Bill and Melinda Gates Foundation and the Wellcome Trust. Both of these organizations do vital work funding health research and treatment around the world and understand the threat posed by climate change — the biggest public health threat of the 21st century according to the UCL-Lancet commission.

Despite this good work their vast endowments (over \$60 billion between them) are still invested in fossil fuels. Why, we asked, would they want to see their good work undone by their own investments

The campaign struck a chord with readers.

Within a week, 100,000 people in 170 countries had signed the petition (there are now close to 230,000) and from the start we offered them meaningful ways to get involved. Supporters lobbied the Wellcome Trust board by writing letters, for example; medics around the world got together to demand change and petition-signers appeared in a video appeal to Bill Gates.

The feedback we’ve received from them has been at times moving and heartwarming. “Great stuff; [the campaign has] brought *The Guardian* much closer to me — and I’m sure helped many others gain an increased sense of community,” wrote one. “I was delighted when *The Guardian* threw itself into the fray,” responded another. “I joined the campaign to...give hope to the people of the world,” explained a third.

The campaign fired up supporters but it also kicked off a media debate. *The Guardian* itself became the story, with the campaign element of the project acting as a hook for dozens of TV and radio interviews and newspaper articles, including from CNN, BBC, The Hindu, NPR and Le Monde.

Many applauded the transparency and straightforwardness of our approach, but some argued we had fatally compromised the boundary between news and opinion.

Kevin Smith, a former president of the Society of Professional Journalists, told the web site Salon.com he feared that one side of the argument would not be given a chance to respond.

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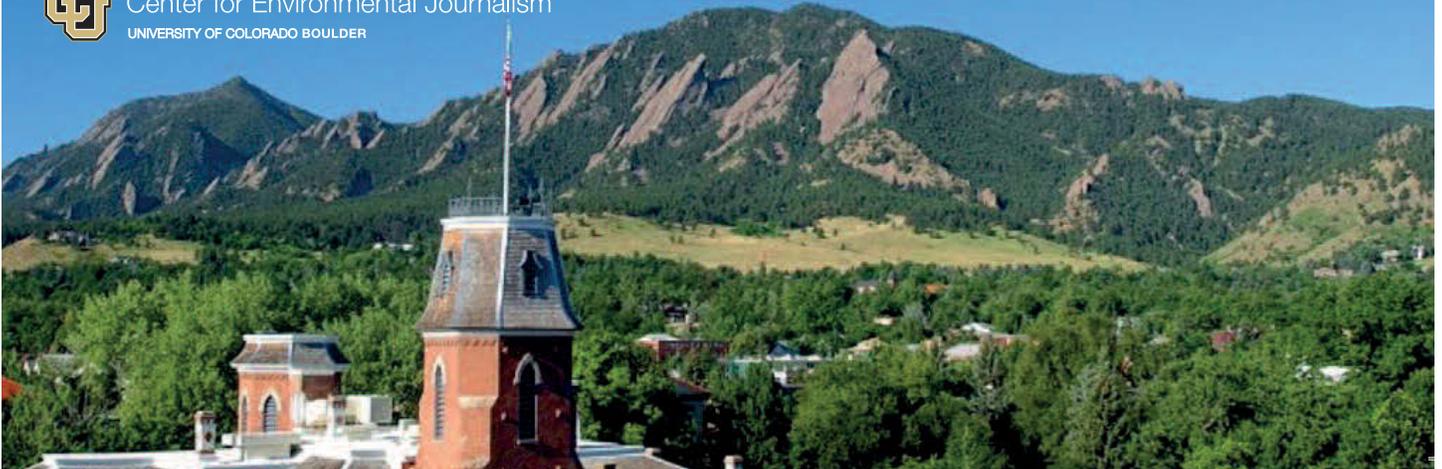
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"I get the sense that they're pointing the fingers at the people they find to be culpable in this. And that's fine," said Smith. "But I think those culpable people at least deserve some sense of opportunity to defend themselves with some kind of evidence to suggest that everything else that's been written or suggested is false."

"I've never seen anything like it," Joe Mathewson, an associate professor at Northwestern University's Medill School of Journalism, told EnergyWire. "It makes me wonder how they will handle business stories in the future dealing with the oil industry and with major companies in it. Will they get the same kind of straightforward coverage in the future, or will the business editor be constrained and play down the coverage of these huge, giant oil companies?"

Nothing could be further from the truth. Yes, *The Guardian* is advocating fossil fuel divestment (and has also decided itself to divest its £800m fund from fossil fuel assets), but even on the central question of the campaign — whether divestment is effective — we have given voice to people who disagree with our approach.

What's more, the campaign has opened up editorial opportunities with the oil majors that would not otherwise have happened. For example, a sit-down podcast interview of more than an hour with Shell boss Ben van Beurden.

Commitment to reporting, engagement

Divestment has been just one part of the editorial push that was born on Christmas Eve.

Alongside it has been a heightened commitment to a range of reporting, multimedia, interactives and investigations. And importantly, all of that journalism has been subject to the usual editorial standards that *The Guardian* applies to all our stories.

There was another part to Rusbridger's challenge though. He wanted to engage new readers and those who have succumbed to climate fatalism. We knew that to do that we would have to approach the topic from new angles and do things differently.

Not all of this experimentation worked first time, but getting out of the usual mode of reporting has yielded some great successes.

Here's some of what the team has produced:

- Collaborations with artists including Antony Gormley to illustrate the launch pieces for the project
- A series of investigations into companies invested in by the Wellcome Trust and Gates Foundation.
- A series of online video interactives about "carbon bomb" fossil fuel projects around the world.
- A futuristic zero-carbon city built inside the online game Minecraft.
- A series of 20 poems by different authors curated by the U.K.'s poet laureate Carol Ann Duffy.

All of this has been achieved under the intense and unusual scrutiny of a 12-part podcast series entitled "The Biggest Story in the World," which gives a genuine, behind-the-scenes insight into the wider project and the decision-making around the campaign.

"Keep it in the Ground" also prompted the launch of the Climate Publishers Network, a content sharing agreement between 33 publishers around the world including *Le Monde*, *El Pais*, *Seattle Times*, *Huffington Post*, *Sydney Morning Herald*, *India Today* and *China Daily*.

What has been achieved?

International coverage of fossil fuel divestment jumped by around a third in the first 10-week phase of the campaign, so it seems we have helped to spread the message.

The divestment movement itself has continued apace with several organizations — including the Church of England, Syracuse University and Norway's \$900 billion sovereign wealth fund — opting to divest from fossil fuels since the campaign began.

Unfortunately, the Gates Foundation and Wellcome Trust are not among them yet. But there's still time for them to change their minds.

At *The Guardian*, we have learned a lot by preventing climate change from being confined to an environment ghetto and engaging the talents and knowledge of journalists from across the organization.

In the process we've experimented with new ways to tackle the subject, which have brought in new readers.

Far from constraining us journalistically, the "Keep it in the Ground" campaign has felt liberating and provided a connection to readers that goes far beyond a click on a website.

The campaign's next move? Sign the petition for updates and watch this space.

James Randerson is assistant national news editor at The Guardian, where he is leading the "Keep it in the Ground" campaign. The campaign can be found at theguardian.com/keep-it-in-the-ground.

BookShelf...Continued from p. 19

debated whether the Chaco culture might have been an incipient empire.

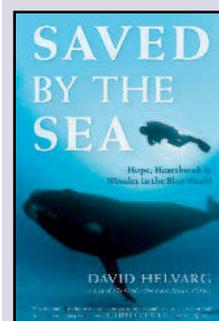
Roberts' book isn't for the archaeologically faint of heart. One of the most controversial practices he promotes would have many archaeologists fuming. His "open museum" principle encourages people stumbling across unexplored sites and undiscovered artifacts to leave them in place, disturb nothing — and tell no one where they are.

Roberts bemoans the loss of public access to many sites of historical significance once they are placed in the hands of state agencies, the National Park Service or tribal groups. With so many sites under inadequate protection, Roberts argues that open access — even for looters — is better than no access at all.

The sheer wealth of ancient Four Corners sites is staggering. Leaving many of these ruins alone and intact gives visitors a real sense of the monumental achievement of these ancient inhabitants — and provides researchers with fresh fields of exploration for generations to come.

Karen Schaefer is an Ohio-based freelance radio journalist and an SEJ member.

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clarity and good quotes, and we stress that both sides must take responsibility to insure the interview's success.

Then we examine the story or short video. It is helpful to have the full video, especially if the science student cites what appears to be a factual error in the story. Sometimes the journalist has made a mistake, but usually it is also clear that the two sides did not communicate very well and that was the cause of the error.

Earlier in the semester we discuss what makes a good interview, such as doing background research, asking short questions and following up on new information. Sometimes there are other course requirements, including doing a longer story or multimedia report.

One of the challenges in teaching the course is how to give students more than one opportunity to do an interview. If the class is large enough, students may not get to do a second round. However, students still learn a great deal simply watching the videos and discussing them.

My colleague Rubega believed that the most important lesson was that the course "gives both science and journalism students a shared sense of responsibility for working and understanding the other side."

Sometimes 'painful' learning experiences

Jargon is a big problem. The scientists must learn to avoid it, and the journalists must ask that it be explained. Plus, both sides must come prepared.

That failed to happen once when the journalist began by asking for an explanation of the graduate student's research. He replied that that was hard to explain. Eventually, under prodding from the journalist, the researcher eventually explained his role, but it took many, many questions.

Another teaching moment was at hand. Rubega said she often has had students come up to her and exclaim, "This is way harder than I thought it would be."

For the most part, students enjoy the course.

"I thought it was one of the most valuable courses that I took," said Caitie Parmelee, who graduated as a journalism major in 2014. "It was really worth it to learn how to interview people in an area that I knew nothing about."

Chris Field, a doctoral student in biology, said the course gave him the opportunity to practice his interviewing skills. "You need a safe place to make mistakes," he said.

On the downside, students may find watching videos of themselves to be painful. "It was definitely challenging," said Gwen Craig, a journalism graduate. "I'm not a fan of the camera."

Bob Wyss is a former reporter and editor at the Providence Journal. An associate professor in journalism, he has been at the University of Connecticut since 2002 and is the author of the environmental journalism textbook "Covering the Environment."



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Facilitators plan story breakout sessions at a day-long SEJ regional workshop that helped some 70 participants bring digital innovation to their environmental storytelling. Left to right, freelancer Sam Eaton, Adam Glenn of CUNY Graduate School of Journalism, freelancer Jenny Chen and WNYC's Ariana Tobin. Photo: © Sharon Guynup