CAREERS

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S. STAFFORD

OUTREACH

Field hospitality

Hosting guests on research trips can give scientists a chance to showcase their work — but it can also cause distractions.

BY LUCAS LAURSEN

Early in his career, Paul Olsen sat in front of a television, expecting to see his own image. He had hosted a television crew on a research expedition to Manicouagan Crater in Canada, where he and his team were investigating the Triassic–Jurassic boundary in the geological record. Olsen, a palaeontologist at Lamont–Doherty Earth Observatory of Columbia University in Palisades, New York, had spent hours explaining and re-explaining for the camera how scientists used the site to reconstruct ancient ecologies. As the opening credits rolled, Olsen wondered how he would come across on the small screen.

But by the end credits, he was still wondering. All that had appeared on screen was a brief flash of Olsen's disembodied hand, as the documentary focused on other researchers from the expedition. In the decades since then, Olsen has hosted at least a dozen teams of journalists, from National Geographic, the BBC and the Canadian Broadcasting Corporation among others, each time devoting days to assisting them and solving logistical challenges on their behalf. He has learned that a journalist's gratitude does not always translate into a starring role — and nor should it. Although some of his colleagues express disappointment when their hours of storytelling don't make the final cut of a documentary, Olsen acknowledges that journalists must be "fairly ruthless", because "they're there to tell a story". Scientist hosts might find that they're not part of that tale.

Hosting guests such as journalists, policy-makers or teachers during research fieldwork is a gamble. In exchange for a shot at publicizing their work or educating a wide audience, scientists must give up an unknowable amount of time and accept the risk — and the added cost — of taking extra people to a remote location. If it goes well, a visiting teacher might help to spread the word, or a policy-maker might be able to make more informed decisions; but scientists may also end up with recalcitrant or shivering visitors who hole up in their rooms instead of getting close to the fieldwork. To make the most of bringing guests to the field, hosts should plan ahead, communicate their goals, try to head off conflicts and expect to exercise patience.

BE PREPARED

Hosting may give researchers an opportunity to sell their science. "It theoretically helps your career," says Kevin Krajick, a media-relations manager and science writer at Lamont–Doherty, who helps to connect journalists with scientists. "It's a bit of marketing — organizations such as the National Science Foundation love to see media — and it can help educate the general public."

The impact may be more important for general fields of study than for any one researcher's work. "I don't think there are too many benefits directly to the scientist," says Olsen. Yet he continues to host guests owing to a sense of responsibility to members of the public, whose taxes fund most of his work. Jill Baron, an ecologist at the US Geological Survey in Fort Collins, Colorado, says that bringing policy-makers closer to the wilderness helps to persuade them that such places are worth protecting. Visits can also establish useful relationships. "When they need information they are likely to call you," says Baron, who has hosted policy-makers ranging from local air-quality commissioners to US senators.

Communicating science in the field can help to further a cause and even, in rare cases, catalyse research-vindicating policies. In 2007, after decades of visits by Colorado officials to Baron's field sites, a consortium including the US Environmental Protection Agency, Colorado's air-quality commission and the US National Park Service drafted a plan to reduce nitrogen deposition in the Rocky Mountain National Park. Baron says that without such visits, "it's hard for people to actually visualize" environmental threats. She once spent hours explaining to a mayoral staffer from Denver how agricultural fertilizer used on Colorado's plains infiltrated the Rocky Mountains. After walking all day through the Rockies, the staffer stopped and asked her: "'You mean what we do down in Denver makes a difference up here?'" Baron recalls. "You can talk until you're blue ▶

Left, palaeontologist Paul Olsen (kneeling) hosting a camera crew in Morocco. Right, Kevin Krajick, a science writer, (left) on a field trip in Bangladesh.

but until they see it they won't understand," she says.

When David McGee, a climatologist at the Massachusetts Institute of Technology in Cambridge, hosted freelance writer Douglas Fox on a field trip, he expected to teach Fox about the science involved in his work. But McGee was surprised by what he learned from the experience himself. "It improved my ability to talk about what I do," he says. "You get better at breaking out of the jargon and lingo and assumptions about what is important" to outsiders (see *Nature* **468,** 465–467; 2010). McGee took Fox, who is based in San Francisco, California, on a trip to the dry bed of Lake Bonneville, which once covered much of what is now northern Utah. McGee says he was excited that someone was interested in his work and helping to publicize it. The expedition led to a feature story in *High Country News*, a magazine for the western United States (go.nature.com/qiiyqj); McGee now shares the article with prospective graduate students and postdocs.

As useful as these outreach lessons were, they did cause frustrating and time-consuming complications. One of McGee's Utah field sites was on US military property. McGee had arranged permits long before the expedition — for scientists. But when his military contacts discovered that Fox was joining the trip, they decided that the team would need a military supervisor. They also decided that they were willing to send the supervisor for only one day. So Fox missed out on some of the expedition's scientific research and McGee got stuck with lengthy, last-minute negotiations. "Once you've invited this person along and they've got their plane tickets, you end up with some responsibility to help as an intermediary," he says. "It all worked out in the end, but it was a headache."

McGee also learned that journalists are attracted to the little conflicts that scientists are less eager to broadcast. With Fox around all the time, every prickly exchange among the researchers, no matter how routine, was potential story material. "Sometimes with collaborators you're short about someone's difference of opinion," says McGee. "But that's not the thing you want to see in print." As a result, some of his colleagues were not comfortable with Fox's presence, and McGee now knows that he needs to check with other members of his team before taking a journalist along.

LESSON PLANNING

A proactive approach before the field visit can help to mitigate misunderstandings, says Krajick. "You want to be prepared," he warns scientists before they take visitors on trips. "Be ready to explain your stuff and have a talk over the phone before going on the expedition to make sure you're on the same page." That allows scientists to lay ground rules such as when they will be available for questions; and it gives journalists a chance to explain when in the editorial process they might want to consult the scientist to check facts.

Olsen discusses mutual expectations with all guests ahead of time. He also prepares handouts for teachers and journalists, summarizing the main points of interest of the field site and the objectives of the expedition. Baron and her students and technicians separate groups of policy-makers into different hiking parties, on the basis of their physical abilities. "Don't take staffers or policy-makers or senators, especially senators, anywhere they're going to be cold or thirsty or get altitude sickness," she advises.

It helps for scientists to have some control over who goes into the field with them. "One of the things we have learned in the past is that the researchers need to be able to pick their teacher," says Janet Warburton, an education coordinator at PolarTREC, a programme based in Fairbanks, Alaska, that gives school teachers a hands-on research experience in the polar regions. PolarTREC filters applicants for motivation and the ability to translate their experience into lesson plans; researchers themselves must ensure that the teacher will be able to cope with the challenges of life and work on their field trip. Lack of filtering can cause wasted opportunities: in one unfortunate case, says Warburton, a teacher not up to the physical challenge of the daily walk to a field site remained in the barracks instead of participating in the fieldwork.

Mark Goldner, a teacher at Heath School in Brookline, Massachusetts, learned about research expectations first hand. Goldner was shortlisted for an expedition to the Svalbard archipelago in the Norwegian Arctic last July. Before he could join the trip, he had to pass a thorough interview with the principal investigator — Julie Brigham-Grette, a palaeoclimatologist at the University of Massachusetts in Amherst. "Julie came right out and said, 'Here's some things we expect of you — what do you think?'" Goldner remembers.

"Be ready to explain your stuff and make sure you're on the same page."

As a trip leader, Brigham-Grette always tells potential participants in her field trips about the physical demands of excursions, such as long walks in the cold, and asks them about their ability to handle responsibilities that include blogging about the trip and helping with expedition equipment. She had one teacher who wasn't able to operate his computer or blog effectively on a trip — and because Brigham-Grette considers communication an important part of a visiting teacher's role, she now asks about those skills. "When I'm in the field, I can't help them navigate that," she says.

Meeting in advance can mitigate stress and

T. MARTIN/ARCUS

Tim Martin, a teacher, tags along with palaeoclimatologist Julie Brigham-Grette in Siberia.

distractions once the trip is under way — in the field, it is sometimes hard for scientists to explain the big picture of the research effort because they are so caught up in the mechanical details of data collection. "When teachers are going out in the field, they're seeing only one piece of the process," says Warburton. "The team is usually very stressed collecting data and may not have the energy to explain the big picture in the moment."

For teacher trips, pre-planning should entail some thought about how the experience will benefit the classroom. Before his own expedition to Siberia with Brigham-Grette, Tim Martin, a teacher at Greensboro Day School in North Carolina, discussed with her how his web design and photography skills could help to translate her science into useful lessons for his students. He also improved his understanding of her work.

Since their expedition together, Brigham-Grette and Goldner have stayed in touch so that she can share her group's analyses of the data that they collected. "The whole goal of PolarTREC shouldn't be about me, or my trip to the Arctic, it's really about my students and the outreach that I can do," says Goldner. "That ongoing collaboration is really important."

ON THE RECORD

Allowing guests, especially journalists, to participate in expeditions may not be the best choice for every expedition. Anything from precarious logistics to bad weather or sensitive politics might cause scientists to postpone, says Olsen. Krajick adds, "If you're not prepared to go on the record all the time, I don't think you should take someone along." Most fieldwork takes place in too intimate a setting to expect much control over gossip or frayed nerves.

Sharing the experience doesn't have to mean relinquishing all control. Olsen has experimented with one way of dealing with the time demanded by television crews: he has decided to not bother trying to conduct real science for the cameras. Mock observations are enough for television journalists, and not having to worry about botching precise measurements makes answering questions easier.

Indeed, hosting often requires flexibility. "You can't plan which days are for discovery and which are photo days," says McGee. He acknowledges that Fox's visit was rather long at four days, but McGee liked the result — a nuanced depiction of his work.

Field guests can be an asset, even beyond outreach: scientists may be able to put visitors to work and make use of their skills. When Brigham-Grette first offered him a place on her trip, Martin was "ready to mop floors". But the team found more useful things for him to do: he had once worked building houses in needy communities, and had construction skills. On one occasion, Brigham-Grette assigned Martin to work on a drill. He didn't falter when the sub-freezing temperatures chilled the drill's fluids and shut it down. Instead, he assumed the role of foreman. "We brought it inside for warmth," he recalls. "But the exhaust was poisonous, so I built an enclosure to channel the exhaust outside."

Goldner happened to know how to drive boats, so Brigham-Grette asked him to ferry scientists and equipment around. And on a remote field site in Morocco, Olsen once asked a television crew with a large budget to transport some of his team members between sites. When it comes to field-trip guests, he says,"their needs and your needs can overlap." ■

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JOB SECURITY

British prospects grim

Recruitment and job security for early-career faculty members in the United Kingdom will become more uncertain as government funding for higher education declines, says a trade union. The University and College Union (UCU) in London released a study of higher-education revenues on 5 January. The report says that the proportion of university income accounted for by government funding, estimated to be 31.6% for 2010–11, will fall to 15% by 2014–15. That will probably lead to a reduction in long-term, renewable contracts for junior faculty members, says Stephen Court, the UCU's senior research officer. "The shifting pattern of income from the government will make university employment more precarious," he says.

BIOMEDICAL SCIENCE

Jackson Lab to expand

The Jackson Laboratory has completed plans to open a branch in Connecticut. On 5 January, state governor Dannel Malloy finalized an agreement with Jackson, a biomedical research centre based in Bar Harbor, Maine. The lab will initially lease space from the University of Connecticut Health Center in Farmington. Next year, construction will begin on a permanent facility in Farmington that is set to employ 300 scientists and support staff by 2017. Recruitment is already under way in computational biology and systems genomics for the temporary lab, which will have 27 employees, including scientists, by the end of 2012, says Michael Hyde, Jackson's vice-president for advancement.

UNITED STATES

Scientists miss their peak

US biomedical scientists rarely earn their first major grants during their optimum innovative years, concludes a study (K. R. W. Matthews *et al. PLoS ONE* **6**, e29738; 2011). In 2008, the average age of a scientist getting a first grant from the US National Institutes of Health (NIH) was 42, the authors found. But researchers who won Nobel prizes in medicine or chemistry between 1980 and 2010 did their pioneering work at an average of 41 years; 78% did so before 51, the average age of NIH investigators now. Part of the problem is that the NIH is risk-averse and unwilling to fund nascent work, argues Kirstin Matthews, lead author of the study and a science and technology policy fellow at Rice University in Houston, Texas.