Making science news

Public affairs practitioners can serve as a vital link between scientists and the public

At the end of a busy day, Jane Jones, a science writer in the public information office at State University, leans back in her desk chair and leafs through the latest issue of Science. Suddenly, she emits a strangled cry. She has just discovered that Dr. Betty Baker, a biologist at State U., has a rather interesting article in the journal. So why is Jones dismayed? Because if she had known about Baker's upcoming publication she could have written a news release that might have garnered some media coverage for Baker's research—as well as some positive publicity for the university.

Why didn't Baker notify the public information office of her upcoming publication? There are many possible reasons: She may have been new to the university and may not have known what the public information office did—or even that it existed. She may have been afraid that her colleagues would view her as a publicity hound. Or she may have wanted to avoid media coverage because she felt burned by a reporter who wrote an inaccurate story about her work in the past.

The case for communicating

Despite concerns such as Baker's, there are many reasons for scientists to communicate their research results to people other than their peers—including the public, the media, and policymakers. "We live in an age of increasing demand for accountability," says biologist Jane Lubchenco, of Oregon State University. "Most scientists receive funding from public sources.... I think it's reasonable for the public to expect in return not only the generation of new knowledge but also the communication of that knowledge, and that communication should not be limited to scientific publications."

In addition, policymakers and the public are increasingly turning to scientists for advice in dealing with a host of issues related to science and medicine, ranging from genetically engineered foods to global warming. The public is also just plain interested in news about science, medicine, and technology, and scientists can help educate and inform the public by being willing to communicate with diverse audiences.

Scientific organizations, too, are encouraging their members to communicate with the public. The Ecological Society of America, for example, recently announced the establishment of the Aldo Leopold Leadership Program, which will train 20 environmental scientists each year over the next three years to be effective communicators.

"The immediate impetus for establishing the program was the increasing pace of requests that many of us get for more information," says Lubchenco, who chairs the program's steering committee. "Those requests come from...the media, politicians, agencies, and citizens groups." The program's organizers hope to increase the number of environmental scientists who can respond effectively and credibly to these requests. Lubchenco says that they also hope to teach participants how to minimize the risks inherent in communicating with a broader audience, "but also to understand that it's a valuable thing to do even with the risk."

Despite the many arguments in favor of communicating with the public and the media, some scientists still fear being perceived as publicity-seekers by their peers or having their work described incompletely or incorrectly. Others may believe that communicating with nonscientific audiences is not worth their while because the scientific reward system does not value such efforts, Lubchenco says.

But these attitudes appear to be changing. "I have seen a massive sea change in the 20 years since I have been staring at this process," says Sharon Dunwoody, Director of the School of Journalism and Mass Communication at the University of Wisconsin–Madison. When she was a science reporter, in the late 1960s and early 1970s, Dunwoody had a hard time getting scientists to talk to her. Now, she says, "what I've seen much more commonly are scientists who understand that public visibility can have pronounced benefits."

Indeed, Dunwoody says, surveys show that "scientists fervently believe that their success in getting money is linked to public visibility." Although the evidence for such a link is anecdotal, many public information officers at universities and other research institutions can cite cases in which publicity for a scientist's work resulted in new funding for that research.

And Tom Rickey, a science writer and editor in the public relations department at the University of Rochester, notes that publicity in the popular press has been shown to increase the number of citations of the publicized work in the scientific literature (The New England Journal of Medi-
“While perhaps some scientists would like to believe that coverage in the general press does not affect the scientific process or their careers, it definitely does,” Rickey says.

Lubchenco, too, has noted a new awareness among scientists about the benefits of communicating with the public. “There has most definitely been an increased realization that the continued provision of funding is in part dependent on showing that the research is resulting in something. But I think it’s also changing because more and more credible scientists are becoming active, good communicators,” she says.

Valuable allies

Although many scientists do not realize it, Rickey and other science writers known variously as public information officers (PIOs), public relations people, or public affairs people can serve as valuable allies for scientists who want to communicate with a broader audience. “I would advise scientists to consider their PIOs as colleagues or peers on the same team,” Rickey says. “Their own PR people want them to be successful.”

Lubchenco says that “any scientist at a university should definitely get to know his or her PIOs and invest the time to tell them what they’re doing, to share information as it comes up” rather than waiting until they have a newsworthy finding. “I think there is an educational process on both sides, and that takes time,” she says. “Part of the education on the part of the scientists is understanding what’s involved in the process.”

PIOs who specialize in science may work for universities, national laboratories, government agencies, nonprofit organizations, museums, private companies, and other research establishments, as well as for scientific societies and journals. Their training is diverse, but it often includes a background in science, journalism, or communications. Their jobs often include a variety of tasks, such as writing for various audiences and handling media relations. What most science PIOs have in common is a strong interest in communicating science to the public—and a great deal of know-how about doing so effectively.

“There are three distinct roles that I believe an effective public affairs office provides,” says Rick Borchelt, media relations manager at Oak Ridge National Laboratory. First is a translational role—that is, taking complicated scientific information and putting it into language that is accessible to the media and other lay audiences in the form of news releases, reports, or other documents. PIOs can also help provide much-needed context for a story—something that reporters always look for. This means explaining how a piece of research fits into the bigger picture and what it might mean to the general public.

The second key role for PIOs, Borchelt says, is that “we are the in-house media sociologists... I know reporters—I know how they work, what’s of interest to them, what their time cycle is like, and I know how to create a package that’s of interest to them.” The media sociologist role also entails “training our staff to understand how reporters work and how the news process works,” Borchelt says. Such training may include explaining the importance of deadlines (every PIO has horror stories about how a researcher failed to return calls from a national reporter who was on deadline) and conducting mock media interviews with researchers to help them prepare for the real thing.

The third role for PIOs—which Borchelt says is often overlooked but potentially one of the most valuable—is that of “management counseling,” that is, advising administrators about the potential public impact of their actions with regard to communicating science and technology. PIOs are able to play this last role, Borchelt says, “because of our relationship half in the institution and half on the outside.”

Understanding the process

Just as PIO Jane Jones is recovering from the shock of seeing Dr. Baker’s article in Science, she gets a phone call from another State U. researcher, Dr. Steve Smith. “I wanted you to know that I have a paper coming out in a couple of days describing new evidence that birds evolved from dinosaurs,” Smith says. “I thought you might want to put out a press release on it.” Jones groans softly. “I’m glad you thought of calling me, but I wish you had told me sooner,” she tells Smith. “I’m afraid it’s too late to do anything now.”

News releases are one of the most common means used by PIOs to facilitate the flow of science information to the media and the public. PIOs say that ideally they need at least a couple of weeks to a month of lead time to prepare and disseminate a news release. If publicity efforts are tied to a journal publication, the PIO will need time to review a draft of the article. Formulating questions, interviewing the researcher, drafting a news release, and working with the researcher to make sure that the release is accurate also take time. In addition—particularly at government organizations—the science writer often must “clear” the release with administrators. In some cases,
extra time is needed to coordinate publicity efforts with PIOs at other research institutions, scientific societies, or funding agencies.

The PIO also must allow time to distribute the release to media contacts, so that reporters who choose to cover the news have time to research and write their own stories. The timing of publicity efforts is particularly critical when the news release is tied to an article from one of the journals, such as Science and Nature, that have an embargo policy. An embargo means that reporters receive advance notification of an article but agree not to print or broadcast stories before the article is published.

Working with the PIO

The perpetual plea of PIOs to scientists at their institutions is to "let their PR people know of interesting developments in their work," such as new inventions or upcoming meeting presentations or journal articles, Rickey says. Although a few prominent journals will notify the public affairs office if a researcher at that institution is the senior author on an upcoming publication, most journals do not. And a PIO may want to publicize an upcoming article even if the researcher at his or her institution is not the lead author.

Borchelt echoes Rickey's concern about keeping in touch with what scientists are doing. "One of the hardest parts of the program here is finding out what we are doing out on the lab benches, and that's true of every public information officer I've ever talked to," he says. In an effort to keep up with what is going on at the bench and find out about potentially newsworthy research, Rickey, Borchelt, and other PIOs spend time talking to researchers about their work. They may visit researchers in their labs or offices, ask those too modest to crow about their own work whether their colleagues are conducting noteworthy research, and attend seminars, thesis defenses, and brown bag lunches. PIOs may also discover what researchers at their institution are up to by looking through journals and meeting abstracts.

Both Borchelt and Rickey say that they understand that scientists have many things on their plates besides getting to know their PIOs and communicating about their research to nonscientists. But "we as PIOs have a job to do, and that job involves going to them and making sure they know what we do, what we can offer them, and how we can make their research better," Borchelt says. "It's the job of the PIO...to make it clear to researchers that the communication of science adds value to the research," he adds.

Although the PIO plays an important role in facilitating the communication of science news, scientists can do many things to aid the process. When working with a PIO on a news release about a scientific paper, Borchelt says, "don't just give [the PIO] your paper and expect them to digest it. Do try to walk them through the principal findings and try to make the results relevant to a general audience."

Scientists also need to understand that "the style of a press release is very different than the style of a scientific paper," Lubchenco says. "A press release should be interesting, lively, accurate, timely, and connect to things that people know and care about, and those are not necessarily things that scientists think of as being desirable," she notes. Scientists may try to rewrite a release so that it includes too many hedge words and long, complicated sentences—neither of which is appropriate in a news release, Lubchenco says. But scientists should also make sure that a news release does not exaggerate the importance or implications of their work, because the ultimate results of such overstatement are likely to be negative.

Rickey says that scientists should "respect the broad knowledge that the PR person brings to the table." He also notes that scientists should "not expect successful interactions with the media or with their public information people without investing time in that. A lot of scientists say they want good relations with the media and the public but they're unwilling to invest the time to make that happen."

The time commitment from a scientist may include granting interviews to the PIO as well as to reporters, working with the PIO to prepare answers to questions that reporters are likely to ask, and taking a call from a reporter even when a grant deadline is looming.

What makes science news?

Poor Jane Jones. This time a researcher, Dr. Bob Brown, has given her plenty of advance notice about an upcoming publication. But Jones' heart sinks when she hears that Brown's article describes the elucidation of a single step in a complex intracellular signal transduction pathway—something that Jones knows from experience reporters will not consider newsworthy. She takes a deep breath and prepares to explain to Brown why she does not think it would be a good idea to write a news release in this case.

"The most important thing for a public information person to do is make good news judgements...and have a realistic expectation and appreciation of what is likely to be important," says Richard Harris, a science correspondent for National Public Radio (NPR). A key point for scientists to keep in mind is that research results that are clearly important to them and their colleagues may not be newsworthy in the eyes of the media or the public. According to Borchelt, "there's a common misperception among research staff that data and results equals news."

However, Rickey points out, "if the newspapers don't care about [a particular piece of] research, that doesn't mean that research isn't important. Conversely, if the news media jumps all over a certain finding, that doesn't mean the work is important," he says.
What is newsworthy? News must have a "hook" that pulls in readers or viewers because it is interesting, important, timely, or novel. Rickey says that newsworthy research includes work that "has an impact on everyday people's lives today" or that is "just really different—very offbeat or unexpected." Also newsworthy, he says, is research "that embodies a trend that people are sensing."

The bottom line

The ultimate decision as to what is newsworthy as far as the public is concerned is made by reporters and their editors, not by PIOs or scientists. Editors and reporters are subject to the same degree of arbitrariness and capriciousness as all human beings, and each media outlet has its own considerations and constraints regarding what is newsworthy.

One key consideration is the audience for that particular news medium—its demographics and perceived interests. What gets reported as science news in the newspaper, in magazines, on radio, or on television may also depend on factors ranging from the need for a "local angle," to what disease the reporter's or editor's mother has been newly diagnosed with, to what the competition is reporting, to what sells newspapers or advertising space. Science news must also compete with other types of news for a limited number of "news holes" available in a publication or broadcast.

News releases are far from being a reporter's only source, although some reporters rely on news releases more than others. Science reporters may also get story ideas by attending scientific meetings, by pursuing topics in which they have a particular interest, by reading journals, through personal contacts with scientists, and even via tips from trusted PIOs.

Much of science news these days—particularly daily news—is linked to the publication of an article in a peer-reviewed journal. "In terms of daily news on science I rely much more heavily on the journals than anything else," NPR's Harris says. Reporters may receive advance copies of some journals, as well as embargoed news releases put together by a journal's own public affairs staff. Often these releases highlight a subset of articles that have been deemed the most newsworthy by the journal's editors and public affairs people. News releases from universities and other research institutions are also often "pegged" to an article in a peer-reviewed publication.

Rickey notes that although presentations at scientific meetings used to receive a fair amount of media coverage, nowadays "peer-reviewed publication in a journal like the Journal of the American Medical Association or Science or Nature is seen as sort of the gold standard for the basis of publicity." In fact, a relatively small group of prestigious journals seems to dominate in setting the science news agenda. "Journals have for a long time held sway over what is science news," Harris says, "and they've been refining that...with the more sophisticated releases that they're putting out in addition to advance copies of the journals themselves."

This tendency to rely on perhaps a dozen prominent journals may in fact unduly influence the reporting of science news. However, Harris notes that "there is a process of natural selection going on also, in that a scientist who thinks he has a really hot research finding is going to try to get it published in one of the top journals.... We [reporters] are counting on the journals and the scientists to be selecting the most interesting stuff." Harris concedes that this selection process is not perfect. Certainly not all research that appears in the top journals is newsworthy, and much important and newsworthy research does not make it into the most prestigious journals. In the latter case, a news release from a university or other institutional PIO might draw a reporter's attention to
a study that would otherwise have gone unnoticed.

In some cases, Harris says, "the media are guilty...of picking up stories that are overblown...that are in the journals and are being overinterpreted." But, he notes, "the role of the media is to air ideas—we are not the final arbiter of what [scientific] ideas are going to float or sink." And when a science reporter covers research that is controversial, Harris says, "these are great stories because it's an opportunity to talk about how science operates, and...how new ideas come up and how they get battered around."

Can PIOs make a difference?
The scientific journals (and, for some, their public affairs offices) clearly have great influence over what gets reported as science news. But PIOs at universities, government research facilities, and other scientific organizations can also influence the news process.

Dunwoody believes that "scientific organizations themselves, be they journals or universities [or other organizations], have an enormous amount of impact on what becomes news." She describes journalism as "an inherently reactive process that...goes out and says 'has news occurred on the landscape?'" rather than searching for interesting issues to cover. "As long as you're in that kind of response mode," she says, "people who are good at signaling to you will have a lot of power."

Harris says that he doesn't get too many story ideas from news releases because many releases are based on articles that he learned about through the journals. But occasionally a news release does provide a story idea, and in some cases, he says, a news release may cause him to take a second look at a journal article that he initially thought "wasn't that big a deal."

William Allen, a science writer at the St. Louis Post-Dispatch, gets "a significant minority...of my story ideas from PIOs." Perhaps because he covers local science news—although "local" in his case refers to a large chunk of the midwestern United States—and perhaps because he was a university PIO himself at one time, Allen is receptive to contacts from a trusted group of PIOs at research institutions in the region that he covers.

Allen realizes that PIOs are paid to publicize research from their institutions, but he sees them as being similar to journalists in that they are "one of the many gatekeepers on the way to communicating science to the public." Good PIOs, he says, "have their fingers on [the pulse of] the science beat at their institutions, and they find good stories and report them. In that sense, they are extensions of who I am."

For PIOs, building a good relationship with reporters "is a two-way street, and it takes a long time to pave it," Allen says. Most reporters agree that one of the worst things a PIO can do is to hype a story. "Reporters are very good at detecting baloney," Allen says. "If you try to pull one on them one time and you get caught, it's over."

Allen, Harris, and many other reporters, whose mailboxes overflow with news releases vying for attention, say that they are not likely to open an envelope from an institution that has a history of sending out poorly written or non-newsworthy releases. As Allen puts it: "I learn just like a rat press the bar to get cheese, and if it doesn't come I stop pressing the bar on those particular envelopes."

Carol Rogers, a Ph.D. candidate and lecturer at the University of Maryland College of Journalism, says that "public affairs people are really essential to journalists in helping them wade through the mass of information, in helping them to negotiate the bureaucracy—helping them get to the people they need to get to."

Rogers, who previously spent 14 years as director of communications at the American Association for the Advancement of Science, calls the public information person "the practitioner in the middle," and says that a PIO's role is "to facilitate the interaction between the journalist and the expert, in this case the scientist...always keeping in mind that the end goal is to get the information out to the audiences that need it and want it."

Getting the story straight
Even if a reporter gets a story idea via a news release or a tip from a trusted PIO, the reporter must then further investigate that story and decide how to present it to the public. This process is likely to involve interviewing the researcher who did the work, as well as talking to other researchers who can provide perspective on the importance or significance of the findings. "I don't just take a story idea and do a single-source interview and put it right in without some broadening and deepening," Allen explains. Journalists reporting on a science story, Lubchenco says, "should be asking the tough questions and being skeptical and interviewing folks who might have different opinions."

In some cases, a science story may contain inaccuracies, or it may present the research in a somewhat more or less favorable light than it deserves. Factors such as sloppy reporting or a lack of understanding of the science may be responsible, or the deadline may have been too tight for the reporter to investigate the story thoroughly. In other cases, the journalistic emphasis on presenting opposing viewpoints and the desire to provide drama and even conflict in a story may result in an inaccurate slant.

But in some news stories in which
the significance of the research is overstated, Rogers says, the researcher may be responsible. “I think it’s not uncommon for scientists sometimes to talk about the implications of their work in more glowing terms in a news release, and even sometimes in an interview with a reporter, than they would in a meeting with their colleagues...and then [they] may be surprised when they see in print something more optimistic...than they might have intended,” she says.

How should scientists react if they believe a story about their work contains inaccuracies? “My basic reaction is that...if the main point of a story has been mangled, then it’s absolutely legitimate for a scientist to feel quite angry at that particular journalist,” and perhaps even call them to complain, Dunwoody says. However, she advises her scientific colleagues who say they won’t talk to reporters because they’ve been burned in the past “to be very careful not to generalize from an n of 1. There is enormous variation out there, but they’re going to encounter lots and lots of excellent writers.”

Dunwoody also counsels scientists to keep the audience for a science report in mind before getting upset about relatively minor inaccuracies in a story. In the case of a lay audience, she says, most readers or viewers will at best come away with a single main point from a science story. “Scientists should ask: ‘Is the main point of the story generally accurate?’” And, she says, “If the answer is ‘yes,’ I say screw the rest of it.”

A love-hate relationship?

Despite the mutual reliance between science PIOs and science reporters, there can be a certain tension inherent in their relations because PIOs “often are perceived [by reporters] as just pushing the institution as opposed to [being] really credible sources of information,” Lubchenco says. Even researchers themselves may be regarded somewhat warily by reporters. Because more and more scientists and research organizations are eager to communicate with the media, Dunwoody says, “The real concern for me now when I see science stories [is that] I no longer assume that’s strictly the initiative of the journalist. Instead, my first question is, ‘In whose interest is this information?’”

Rogers notes that “one of the things that [reporters] have gotten increasingly sophisticated about over the past 10 or 15 years is that people in organizations do have their own agendas. Just because someone is at a university or a not-for-profit organization doesn’t mean that they’re ‘pure’ and [that] someone at a corporation is ‘impure.’”

Like science itself, little in the area of science communications is ever simple or clear-cut. Harris says the idea that PIOs are selling an institution whereas journalists are objectively presenting science is an oversimplification. Journalists come to a story with their own point of view, he notes. Regarding the differences between science PIOs and reporters, Harris says, “I think there are natural checks and balances operating here.... Much of what a PR person does is really motivated by trying to educate and inform the public,” even though they are being paid to get positive publicity for their institution. “I think we are intellectually very much interested in achieving the same end,” he says.