The problem with SESAC's recommendations, however, is that they are not new. NASA's Solar System Exploration Committee proposed all of them a few years ago in its widely praised plan for cost-effective exploration of the planets. Its work was held up by then-presidential science adviser George A. Keyworth, among others, as a paradigm of how scientific planning should proceed. And yet, even before Challenger, the committee's plan was rapidly becoming a shambles. Most notably, NASA's decision in late 1985 to postpone the Comet Rendezvous/Asteroid Flyby mission for budgetary reasons greatly undermined the concept of program stability.

The lesson is clear: "efficiency" in space science is not just a matter of building cheaper hardware. Nor, for that matter, are NASA's overall budget levels and internal priorities simply a matter of administrative fiat. They depend far more on institutional imperatives, year-to-year budgetary upheavals, and politics—factors that no one has yet been able to control.

Thus, one comes to a fourth approach to resolving the crisis: abandon certain areas of space science outright. Leave them to the Europeans, the Japanese, and the Soviets.

Obviously, no one is actually advocating this. Thomas M. Donahue of the University of Michigan, chairman of the National Academy of Sciences' Space Science Board, echoed a palpable sense of anguish in the community when he recently told *Science*, "It simply is not acceptable for this country to give up preeminence in space science." To abandon whole disciplines at this point would be to penalize NASA and the affected research communities for their vigor and success. Furthermore, no one has the slightest idea how to choose which fields to eliminate.

And yet, barring any unexpected upheavals in the budgetary landscape, some kind of drastic action seems inevitable. The alternative of simply muddling through—always the preferred course for a bureaucracy—seems to guarantee stagnation, frustration, and mediocrity for everyone.

"Clearly," write the SESAC panelists, "the decision between these alternative paths [increased funding for space research and sharp reductions] cannot and should not be decided by NASA or by the scientific community alone. It also should not happen by accident. It is a national decision requiring a consensus of the American people, and thus of their representatives in the Executive and Legislative branches of government."

In short, if the choices must be made, then so be it—but *choose*, deliberately and explicitly. ■

M. Mitchell Waldrop

Science Sections in U.S. Newspapers Increase Dramatically in Past 2 Years

The recent demise of two prominent science magazines, the AAAS's *Science 86* and the Hearst Corporation's *Science Digest*, has raised questions about the public's interest in news about science and technology. The question is made harder to answer because daily newspapers have been starting special science sections just at the time when all popular, general circulation science magazines were suffering substantial financial losses because of a dramatic drop in advertising revenue.

A recent survey conducted by the nonprofit Scientists' Institute for Public Information* (SIPI) reveals that between 1984 and 1986, 47 daily newspapers began weekly science sections (defined as at least a page-and-a-half that appears on the same day every week), bringing the total number of science sections to 66. In addition, SIPI reports, 81 daily newspapers now have a weekly science page. The *New York Times*, which was the first with a science section when it launched "Science Times" in 1978, also has the largest circulation at 776,000 readers. The Lewiston, Maine, *Journal*, which started its science section last March, is the smallest with 12,000 readers.

Fred Jerome of SIPI observes that "When so many papers introduce science sections in so short a time, somebody other than university professors and researchers must be interested in reading about science." Indeed, newspapers consistently find a high interest in science and medicine (particularly medicine) when they poll readers about their special interests.

For instance, in an interview in *SIPIscope*, William Randolph Hearst III, publisher of the *San Francisco Examiner*, which recently started a science section called "Spectra," reports that "We knew science, health, technology, and the environment were high-interest areas with readers. They told us every time we asked. Not every reader shares those interests, of course, but those who do have a real passion." Hearst sees the reader who has a real passion as key to newspapers in the future. "In an era when reading is becoming an endangered skill and TV can deliver a truly mass audience, newspapers have to talk about who is reading the paper, not just how many," he says.

Although the majority of the newspapers' sections cover science, technology, and medicine, a significant number focus exclusively on medicine. According to SIPI survey data, in 1984, five or 18% of 28 sections reported exclusively on medicine and health, which veers into articles on fitness. By 1986, 21 of 66 (32%) science sections were really sections on medicine. Carol Krucoff, former editor of the *Washington Post*'s weekly magazine "Health," told *SIPIscope* she thinks the existence of the section has "enhanced and increased" coverage of medical stories in the main news sections of the paper. "That's partly because its focus has brought to the fore the great reader interest in health, so it's increased our awareness of all the health news that's out there."

But enthusiasm for science or medicine sections is not universal, according to SIPI. Some journalists think that the special sections inadvertently "ghettoize" science and end up reinforcing the idea that the subject is special, arcane, apart from real daily news. Lewis Cope of the *Minneapolis Star and Tribune* says "I've been here for 20 years, and one of the things I try to do in a newspaper as a journalist is to make the science news part of the routine, treat it like any other news. I think there's a risk of ghettoizing science coverage with a section. There's a real advantage of having people expect science in the paper every day."

With the exception of the big dailies such as the *New York Times*, which has a dozen writers, the science sections tend to have small staffs of two or three reporters and modest budgets, consistent with the fact that, like science magazines, most of the newspaper sections are more attractive to readers than to advertisers, who remain to be convinced that science pages are the best place to spend advertising dollars.

How science sections will fare in the long run will depend both on reader response and advertising. Although they require advertising support, their expenses come nowhere near those of the popular science magazines with large staffs, four-color art, and substantial promotional costs. (A large mailing of brochures to potential subscribers can run in the millions of dollars for magazines like the late *Science 86* or Time, Inc.'s *Discover*, which has had losses totalling some $50 million since it began.)

Since the SIPI survey was completed, at least two newspapers (the *Albuquerque Tribune* and the *Chicago Tribune*) have folded their science sections and will run science news elsewhere in the paper. Whether this is the beginning of a new and opposite trend is anybody's guess. ■

Barbara J. Culliton

*SIPI, 355 Lexington Avenue, New York, NY 10017.