

Letter From the Desk of David Challinor  
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One of the delightful benefits of being an octogenarian of "sound mind and body" is to reflect on the past and to envision how it can help plan for the future. The risk in doing this is that the accumulated baggage of many years may distort one's judgement so that instead of thinking of new untried initiatives, one falls back on a former idealized regimen that in truth never, or only partially, existed. In this, the first letter of the new year, I accept that risk and suggest that all involved with the Smithsonian support a premise that is as valid today as it has been since the Institution was founded—the nurturing of research, the Smithsonian's primary purpose .

The Institution's origin was as a scientific establishment. Smithson himself was a member of the Royal Society and specifically stipulated in his will the Institution's mandate to foster "the increase and diffusion of knowledge." Knowledge for him, I believe, was to be focused on the world around us, including space. In fact, John Quincy Adams, ex-President and, at the time of Smithson's bequest, a congressman, had visions of using the unexpected one-half million dollar windfall from Smithson to build "a lighthouse in the skies," his term for an advanced astronomical observatory. In any case, the Institution's initial scientific bias continued paramount well into the twentieth century.

The reason for reviewing this early history of the Smithsonian is to emphasize its strong research tradition. Its global reputation and indeed its very character were identified by scientists world-over with the impressive research reputations of its Secretaries: first Joseph Henry's work in electromagnetism; Walcott, the pioneer paleontologist; S. Dillon Ripley, the ornithologist; and on through the ninth Secretary, Robert McC. Adams, a Near Eastern archeologist. Conscious of the importance of maintaining the Institution's international renown, each Secretary successfully lured distinguished scientists to direct its science bureaus and encouraged young pre- and post-doctoral fellows to study with the staff.

During my tenure as Assistant Secretary for Science (1971-1983), and later for Research (1983-1988), the fellowship budget grew and in 1991 reached about 1.8 million a year, an amount that supported about 80 fellows, not only in the sciences but also in history and art. The presence of bright young scholars and scientists stimulated the staff and attracted senior scientists who came to work at the Smithsonian for a specified time, mostly from a semester to a year. We were honored to have Subrahmariyan Chandrasekhar and Marten Rees at SAO; Charles Elton, Ledyard Stebbins and David Stoddart at MNH; and many others of equal caliber at STRI, NASM, the Freer, etc. Fellowships for senior scientists were awarded from about 1980 until 1992, when the program ceased. During that period, 46 senior scientists and scholars studied at 12

Smithsonian Bureaus. There are still a few endowed funds restricted to senior scientists, such as the Burch Fellowship awarded biennially for work in theoretic science; however, the Institution's fellowship budget has dropped from 1.8 to 1.1 million today, supporting only about 60 pre- and post-doctoral fellows.

The absence of such distinguished senior visiting scientists as a result of the program's demise not only diminishes the Institution's visibility in the scientific community, but reverses a tradition that goes back to Robert Goddard, the pioneer rocket developer, whose research was directly supported by Smithsonian Secretary Charles Greeley Abbot through the Institution's Hodgkins Fund. The presence of visiting fellows keeps the staff intellectually keen through the daily give and take of young questioning minds that manifest out-of-the-box thinking. Young researchers themselves are often responsible for astonishing discoveries, such as the young resident who first identified HIV, and another one who demonstrated that stomach ulcers were caused by a heretofore unknown bacteria. Other fellows, early exposed to Smithsonian research, often come back later as senior scientists at bureaus where they once worked. An outstanding example was the return of S. Dillon Ripley to the Institution as Secretary in 1964 after being a pre-doctoral assistant curator in the Natural History Museum's Bird Division in 1942.

So important did the Institution consider the support of fellowships that for three years it ran a joint program with the Peace Corps that enabled young scientists to work in their disciplines overseas with host country officials in Fisheries, Game Departments and other similar government entities. In fact, access by Smithsonian scientists to field sites abroad eventually became partially contingent on funding fellowships for host country's young scientists. Perhaps nowhere was this arrangement more successful than in Nepal, where the long-term Smithsonian Tiger Project (1973-1990) produced three Nepali and three American Ph.D.'s through its direct and indirect financial support. A somewhat similar program with Kenya's Natural History Museum was also successful in producing local Ph.D. scientists.

One of the high points of science at the Smithsonian occurred during the centennial of Albert Einstein's birth in March 1979, when a small colloquium was held at the Smithsonian's Museum of American History entitled "The Joys of Research," orchestrated by Wilton Dillon. The audience was primarily young students interested in or already starting research careers. The organizers assembled a stellar cast of nine distinguished scientists including Nobel Laureate Rosalyn Yalow, Tuzo Wilson, Linus Pauling and Ernst Mayr. They all clearly articulated the joy and excitement associated with a scientific vocation. Their very presence at the Institution was further evidence of how its scientific reputation could be exploited to encourage a whole new generation of young students to enter the field. Indeed, one of the great rewards of being a senior scientist is the exquisite pleasure of watching your former students, and those for whom you have been a mentor, achieve prominence in their chosen fields.

The work and intellectual effort expended to maintain and increase the Smithsonian's scientific reputation is now sadly threatened by a proposal recently announced by the Administration's Office of Management and Budget (OMB). The plan is to shift the Smithsonian's federally appropriated funds for the operation of the Institution's Astrophysical Observatory (SAO) with 700 employees and \$20.7 million federal appropriation to the National Science Foundation (NSF) in FY 2003. The following fiscal year the Smithsonian Tropical Research Institute (STRI) and the Smithsonian Environmental Research Center (SERC) would follow. The NSF, an enormous bureaucracy with a budget in the billions, awards competitive grants to scientists and it contracts with various university consortia to operate many of its observatories and other scientific facilities. The Administration's justification is that by having Smithsonian scientists go through the NSF's competitive grant procedure, the Institution's research component would improve. Unacknowledged by the planners in OMB is the fact that although the three Smithsonian bureaus targeted engage primarily in research, they also operate vigorous science education programs as well as having public exhibits. Their scientists have long competed successfully with their university colleagues for federal research funds. The federal salaries and other costs to operate these three facilities came to \$37.5 million out of the Institution's total federal budget of about \$500 million in FY 2000. What is not emphasized in the consideration of this proposal is that Smithsonian scientists in these three bureaus generated \$93.7 million in competitive grants. Further, the Smithsonian has historically done the crucial long-term, often unglamorous research so important for a comprehensive understanding of our universe—work seldom maintained in universities and large government departments.

The Smithsonian has had experience in being forced to transfer a successfully operating facility to a federal department. In 1981, Congress ordered the Smithsonian's trust funded Science Information Exchange (SSIE) to be transferred to the Department of Commerce (DOC). Bereft of the flexibility and support it had enjoyed under the Institution, it and its service vanished from the scene entirely three years after being absorbed by DOC's National Technical Information Service. The details of this transfer are not important here, but the incident does illustrate the maxim "if it ain't broke, why try to fix it?", a query appropriate to OMB's proposal.

I have specifically raised this threat to the Smithsonian because it strikes at the very heart and being of the Institution. Without its research component, the Smithsonian could gradually fade into the amorphous limbo of the rapidly proliferating theme parks, museums and "historic sites" designed primarily to entertain the public. When an organization's intellectual tradition and integrity are compromised, its "raison d'être" is not only threatened, but vanishes. The research component of the Smithsonian is its soul. I close with a quote from my colleague Michael Collins, astronaut, former Director of the National Air and Space Museum, and one time Smithsonian Undersecretary:

"...since 1846 the Institution has believed in research as an intellectual obligation and necessity. Research is a noble way of life. We are one of the few places in the United States with such a long, continuous tradition of supporting and conducting investigations in the physical, biological, and social sciences. We are proud that research has always been an honored word here at the Smithsonian."

I solicit your support to keep it so.

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