To the Editor:

Response to Ward Dean: I proudly plead guilty as charged to the concern that increased support of biomarker research, as it presently is perceived by Dean and others like him, will divert funds from my "pet projects." My pet projects clearly were indicated as any untargeted pursuit of mechanistic understanding of established phenomena of aging. At least many phenomena of aging now are well established as artifactual manifestations of disease, lifestyle, and a plethora of other behavioral, sociological, and/or humanistic factors about which biomedical investigators know alarmingly too little. In other words, we do not yet have the foggiest notion of what biological aging is.

I have no doubt that our research community possesses the capability to develop the means to modify one or more of an eventually established battery of biomarkers. However, in the light of the present knowledge base, it seems highly likely that modification of one or more biomarkers only will serve to leave unscathed the more pervasive, underlying afflictions or process(es) of aging. The readily conceded exception to my stance applies to those all too few investigators whose primary purpose in biomarker research is to utilize homeostatic perturbation as a means to pursue basic understanding.

I readily reiterate the potential importance of any biomarker research, as long as it is good research. I also remain in support of the established history that continued pursuit of the descriptive at the cost of basic understanding is both less sophisticated and of less societal importance.

Response to Richard Sprott: Sprott is no less a champion of the importance of basic research than I am. Our difference seems to focus on the perceived intent of support for biomarker research. In order to avoid repetition of my response to Ward Dean, I shall limit this response to the issue of NIA funding priorities.

Perhaps typical of gerontological data, Sprott and I interpret the identical data bases differently. In his first of two points on NIA funding priorities, he implies that the mandate of NIA has not changed over the years. I, indeed, am one of several investigators who perceives that the emphasis of NIA has shifted emphatically in support of disease-related research at the expense of investigation of fundamental biological, behavioral, and social processes that are unrelated to disease. In my opinion, there is not even a need for me to develop an argument. Instead, I urge interested readers to examine publicly available, published program priorties of the NIA since its inception and to reach their own conclusions. I concur with Sprott's assertion that the distribution of NIA grant support reflects the results of peer review of investigator-initiated grant applications, a process for which each of us has great enthusiasm. However, in my opinion, he gives far too little credit to the impact of the disease-oriented public relations machinery of the NIA among the general research community.

In his second point, Sprott presents fiscal summaries of NIA grants since 1981 and

indicates the absence of trends. In an alternative approach, I chose to examine printouts of NIA grant support to each individual investigator. My evaluation of these data indicates that NIA support of disease-related research has increased from approximately 25% to nearly 60% of the increasing extramural budget during the past five years, and that nearly all of the new money was invested in disease-related research. Such analyses are susceptible to subjective influence. Therefore, I again urge interested readers to examine the publicly available information and to reach their own conclusions.

This type of interaction is healthy, important and necessary. I continue to have enormous appreciation for the support of the basic science community by the NIA. However, it is most appropriate to air such differences in opinion with respect to the budgetary and intellectual emphases of any federal funding agency, such as they relate to research on biomarkers or other aspects of aging.

RICHARD C. ADELMAN
Institute of Gerontology
The University of Michigan
Ann Arbor, MI
48109

Received 14 *December* 1987