

Tuesday evening saw the 20th anniversary of the George Washington University Science Policy Dinner/Seminars. The guest speaker was E.E. David, President Nixon's Science Adviser, who gave the opening talk two decades ago. A photograph of that 1972 meeting was attached to the list of participants. About 8 of the original participants were present and sat with David for dinner.

David outlined a series of current trends in world events he saw as having big potential impacts on US and world S&T -- some already quite clear, others only incipient. He then made a series of "extrapolations" of the effects of these trends upon US S&T if they were to continue to occur.

1. "Total national investment in R&D will shrink by 25% over the next few years". The Federal budget looks tight for years to come. Industrial R&D has also slowed and will continue to do so because the main growth in the private sector is in the service area, and service industries by and large perform little research.
2. "The Federal Laboratory system will shrink to 30% of its present size". The disappearance of the threat of nuclear war will make it impossible to withstand strong political pressures to reduce them.
3. "Federal research grants will be replaced by contracts. Targeted research will become dominant. Peer review will decrease in its influence." The credibility of the academic and research communities has been seriously damaged by the university administrative problems and by the highly publicized cases of scientific fraud.
4. "Strict guidelines against fraud for Federal research will be established, and administratively enforced. Enforcement mechanisms will be Offices of Inspectors General and the Justice Department. Adversarial relationships between government and universities will increase. S&E's wish the issue would go away -- but it won't"
5. "There will be an increasing oversupply of S&E's -- resulting in a downsizing of academic S&E departments." He claimed that the number of unemployed S&E's was increasing. He also pointed to the influx of S&E's from the former Soviet Union as having a depressing effect upon the US S&E labor market. Nevertheless he felt there was increasing demand for S&E's in certain areas -- such as environmental science, as well as an increasing awareness that general science training can be an excellent foundation for many non-science careers.
6. "Corporate central research laboratories will be abolished". A new model of innovation as an integrated activity is rapidly emerging. Traditional departmentalization in industry is passe, and the various separate functions (R&D, production, marketing, finance) are being combined into mission-oriented teams. This is a direct result of a radical shift in focus of industrial top management to the lead time from concept to market. "Central research laboratories are widely seen as anachronisms, as expensive and unresponsive to corporate business goals." Nevertheless, this leaves open the question of how new science and technology knowledge is to be created. He raised the question of whether this could mean a larger Federal role in 'precompetitive' R&D?

7. "'Industrial Policy' is going to happen". This will be accelerated if there is a change of presidency. The new IP will be formulated and promulgated out of the Council of Economic Advisers and the Domestic Policy Council, as well as out of OSTP and the new Center for Critical Technologies. It will involve the DoComm., and possibly the NIH and NSF. The DARPA may be transformed into a civilianized NARPA. Industrial consortia will be an essential part of this, but they will have to run the gauntlet of Anti-Trust law. David had several uncomplimentary things to say about the role of lawyers in the government.

8. "Technology transfer abroad will require licensing by the Commerce Department". Nationalism and protectionism is growing around the world, and the US is not immune to it.

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David pointed out that noone in the S&T community has yet outlined a new global vision of the role and function of science and technology in the new broader context.

He concluded with the phrase, "I hope I haven't hung too much crepe here -- but it is how things look from Outside-the-Beltway. I admit I've sketched a Draconian view"