Institute for Environmental Research

During the past year, a series of meetings has been held to review mechanisms to facilitate environmental research at Penn. As a result of those meetings, plans have been developed to set up an Institute for Environmental Research. The primary goal of the Institute would be to support and enhance faculty efforts to strengthen environmental research activities across the campus. In addition, the Institute would serve an educational role by assisting in coordinating and developing graduate and undergraduate education on environmental questions. Based on current faculty interests, research activities of the Institute would focus on, but not be limited to:

- Earth and Ecosystem Sciences
- Environmental Engineering
- Environmental Policy
- Environmental Toxicology

Faculty who are interested in learning more about the Institute and discussing how it might best serve their own research needs are invited to attend an informal open meeting on Thursday, October 15, at 5 p.m. in Room 358, Hayden Hall, or to contact Irving M. Shapiro (Ext. 8-59) or Robert Giegengack (Ext. 8-519).

AAUP Legislative Alert

The U.S. Senate has overridden President Bush’s veto of the Family and Medical Leave bill. The vote in the House is now critical. It is not at all clear that there is currently enough support to follow the Senate’s example and to override the President’s veto.

The legislation is consistent with policy statements on leave-of-absence developed by the AAUP, and the AAUP is consequently strongly committed to the bill. Indeed, the AAUP believes that this is an idea whose time is overdue.

We strongly urge all members of the University community to contact their Congresspersons and urge them in turn to support the override of the veto. If you need additional information you may call the AAUP 24-hour toll-free hotline, 1-800-424-2973, Ext. 3202.

— Morris Mendelson, President, University of Pennsylvania Chapter, AAUP

Breast Cancer Summit

Penn Med and Fox Chase hosted last week’s Delaware Valley Breast Cancer Leadership Summit, where scientists briefed some 350 legislators and corporate chiefs on education, screening and detection. Shown here, left to right: HUP Executive Director Bud Pittinger; Dr. Barbara Fowlie of radiation oncology; Dr. John Glick, director of the Penn Cancer Center; Keynote Speaker Marilyn Quayle; Dean William N. Kelley; B. Ginsburg of the Cancer Center; and Dr. J. Sanford Schwartz, of the Leonard Davis Institute. Penn’s center is one of eight in the U.S. designated “comprehensive cancer centers” by the National Cancer Institute.

Planning: Susan Shaman, Dan Shapiro, David Morse

The appointments of Susan Shaman as Assistant Vice President for Planning and Analysis and Daniel Shapiro as Director of Institutional Research were announced this week by Rick Nahm, Senior Vice President for Development and Institutional Planning.

They join David Morse, now Assistant Vice President for Policy Planning, to make up the Office of Institutional Planning and Analysis which provides staff support to the president, provost, and executive vice president in academic and strategic planning.

Susan Shaman, an alumna of Brooklyn College with an M.A. in mathematical statistics from Columbia, joined the University in 1978 as a senior staff associate in the Planning Office headed by Dr. Robert M. Zemsky. She directed the analytic staff of the Office of Planning Analysis from 1982 to 1985, and was named director of institutional research and planning in 1985. She has numerous publications on college choice, curriculum and price, and directs the Curriculum Assessment Service project funded at Penn by the NSF, NEH and Pew Charitable Trust.

Daniel Shapiro, a Haverford graduate with an M.S. in sociology from Wisconsin, has been at the University since 1986. He began as a programmer/analyst in Dr. Zemsky’s Institute for Research on Higher Education and more recently, as assistant director of planning analysis, has overseen the analytic and programming staff of IRHE and managed a major data compilation project for the National Center of the Educational Quality of Workforce. He has overseen major modifications in the University census and generated new analyses in faculty pay and student retention/attrition patterns.

David Morse, who for seven years was the senior staff person for higher education in the U.S. Senate, came to Penn in 1983 as the University’s first director of federal relations to work with Washington and the higher education community to develop and promote federal policies and funding patterns that benefit Penn and research universities in general. In 1986 he added the assignment of assistant vice president for federal health policy at Penn Med, and in 1989 he became assistant vice president for policy planning. He also became managing director of the Institute for Research on Higher Education that year. He holds a B.A. in history from Hamilton College and an M.A. in international relations from Johns Hopkins.

Honorary Degree Nominations

The University Council Honorary Degree Committee welcomes suggestions for recipients of honorary degrees at the May 17, 1993 Commencement. Nominations (including background biographical information) should be submitted to Mr. Duncan W. Van Dusen, Office of the Secretary, 4200 Pine Street, 2nd Floor/4090. The deadline is Friday, October 9, 1992. Nominations have also been solicited through letters sent to all deans, department chairs, and chaired professors.

Please contact me at Ext. 8-0408 with any questions. Thank you for your assistance.

— Allison Rose, Coordinator, Office of the Secretary

Left to right, Ms. Shaman, Mr. Shapiro and Mr. Morse
Questioning the IAST

The University’s proposed chemical and engineering research laboratory complex, called the “Institute for Advanced Science and Technology” (IAST) will be paid for in part by Air Force funds, up to $40 million. The question arises, does military funding mean an increased presence of military research at Penn?

Vice Provost and future director of the IAST, Barry Cooperman, as well as spokesmen for the Air Force, have sought to minimize the role of military science and technology in the operations of the IAST. They dwell, instead, on benign civilian applications. This is only half the truth. Expenditure of public funds on the IAST is part of the Pentagon’s “Critical Technologies Plan,” which calls explicitly for payoffs in new weapons technologies.

The hidden connections between the IAST’s program and military technologies can be seen by comparing the program of research as laid out in Cooperman’s “Draft Program Statement” (March 1990) with the specific critical technologies published in the Pentagon’s annual “Critical Technologies” plans.

It is hopefully true that the IAST’s work will result in useful civilian payoffs. But there will also be military payoffs, and the members of the University community need to be told the whole truth about the IAST, so that they can judge for themselves if they want military-sponsored research complex on their campus.

1. Genetic Engineering and Molecular Biology: Professor Cooperman notes that genetic engineering in the IAST may lead to new therapeutic agents. One hopes. But he fails to note numerous military applications, which are not lost on Pentagon planners of “Critical Technologies”: materials for improved battlefield gear, manufacture of high-energy propellants, disposal of high-energy propellants (!), biological decontamination of weapons manufacturing sites, and so on.

Will the fact that IAST research will be sponsored make it more likely that resulting knowledge will be used for military rather than civilian technologies? Military hardware will not be made at Penn, of course. But does the separation of basic research from military applications remove responsibility from those who produce basic scientific knowledge?

2. New Materials and Catalysts: Professor Cooperman emphasizes the civilian uses of new semiconductors, conducting polymers, and quasi-metallic materials. Some of these materials are also essential components of highly sensitive sensors in “smart” weapons, anti-stealth radars and particle beams, space laserers, etc.—Star Wars technology again. Such military applications are emphasized in Pentagon “Critical Technologies” documents, and in applications by Penn scientists for Pentagon research grants.

Work will also be done in the IAST on high-energy chemicals to be used as fast-burning propellants. These chemicals have no civilian uses, but are crucial to the development of weapons: for example, armor-piercing missiles, and short-burn weapons that are less likely to be detected—“signature control” technology in Pentagon jargon. Such propellants would also be used in ground-to-air anti-missiles—Star Wars again. Should the University be contributing to the development of technology that, in the post-Cold War era, is a waste of taxpayer money and potentially a dangerous and destabilizing provocation?

3. Bioengineering: Professor Cooperman notes potential payoffs in prosthetic devices and designs for automobiles that minimize injuries. He does not mention potential uses of bioengineering knowledge in designing a new generation of warplane cockpits and controls—“Top-Gun” technology many weapons experts feel has become so complicated as to be unusable by human pilots.

Cooperman also mentions the development of clothing and tools for humans to work in extreme environments. He does not specify what environments, but the Air Force doubtless has in mind battlefields, space stations and Star Wars weapons platforms.

4. Computer Science and Artificial Intelligence: Professor Cooperman predicts beneficial spin-offs here for computer networking and industrial robotics. He fails to mention the pervasive interest of Pentagon “Critical Technologies” planners in using these computer technologies to design a new generation of “smart” weapons and anti-missile technologies. These technologies receive emphasis in the “Critical Technologies” plan, yet are not so much as mentioned in the plans for the IAST. The question again must be asked, will the fact of military sponsorship make it more likely that the work of the IAST will be applied to military than civilian purposes?

Work will also be done in the IAST on computer imaging and graphics, methods of imaging vast amounts of data and recognizing meaningful patterns automatically.

Cooperman notes potential applications for benign uses, such as CAT scan and MRI imaging. What he does not mention, however, is that the same knowledge is essential for battlefield robots, “stealth” and anti-stealth weapons, a new generation of ever more complex war planes, and ground-to-air anti-missile and Star Wars systems. These applications are what the Pentagon hopes to get out of their investment, not medical diagnostics.

5. Ultra-fast detectors: In this area Professor Cooperman mentions only applications for the “super-conductor super-collider.” But the Pentagon’s “Critical Technologies” plan emphasizes smart battlefield weapons, command and control, and Star Wars technologies. The Air Force is not interested in the search for quarks, or in the minor civilian spin-offs. They want to make sure that declining military budgets do not prevent them from getting new sophisticated weapons. That is the ultimate rationale for spending millions of Pentagon funds on academic facilities like the IAST.

Professor Cooperman and his Air Force sponsors have tried to persuade the public that the work and sponsorship of the IAST will become more and more civilian in character. That seems unlikely to occur. It is true that the Air Force will not directly manage what is done in the complex, but the fact of military funding is likely to produce the same effect. To get $10—40 million from the Air Force, the University has had to design programs and laboratories for University faculty who work on topics relevant to critical military technologies. The most likely scenario is that Penn science and engineering will become more and more biased toward military science in the long term. That, after all, is what the Pentagon’s “Critical Technologies” program was designed to do.

Connections between the IAST and military technologies have been systematically obscured by its promoters. Half-truths may ease the task of selling the IAST in the short-term, but in the long term they will do only harm. People will disagree about the wisdom of investing in civilian technologies via military agencies, and about tying universities to long-term military purposes. The one thing to which even the Pentagon can assent is that the whole truth needs to be told, so that people can make up their own minds. Is that not why universities exist?

Robert Kohler, Professor of History and Sociology of Science

Response by Dr. Cooperman

In this political year, Professor Kohler’s letter, with its line mix of distortion, personal attack, and scare tactics, evinces a talent better suited to current fashions in presidential campaigning than to the campus debate over the IAST. Especially disturbing is his challenge to the value of free inquiry, a point I will return to below.

First, however, let me present some facts on the issue of Defense Department funding of research at Penn. In FY92 Penn received $11.8 million in research funding from the Defense Department, representing some 4.8% of the total of $247.8 million that the University received for all externally sponsored programs. Going back some 10 years, Defense Department support has always constituted between 4% and 5% of total sponsored program funding, an important source to be sure but scarcely one that threatens to dominate our overall research programs. Penn hopes to ultimately receive $35 million from the Defense Department, to partially defray the total cost of the IAST, which is estimated to be $75 million. At present, $10 million has been obligated to Penn, an additional $10 million has been authorized and appropriated by the Congress and the final $15 million has been authorized though not as yet appropriated. The hope for $35 million total represents an important part of our ability to build the IAST, but, to put it in perspective, represents just three years of current funding by the Defense Department of research programs at Penn.
As Professor Kohler mentions, I have described the general nature of the research programs to be housed in the IAST (Almanac March 1990) which are, demonstrably, quite basic in nature. Furthermore, all of the research in the IAST will be performed under Penn’s general policies for the conduct of research: it will be freely publishable, and it will be totally under the control of the faculty members who are the principal investigators. I fully expect that the research to be conducted in the IAST will have the same mix of applied and fundamental research as that which currently supports the activities of the four departments (Bioengineering, Chemical Engineering, Chemistry and Computer and Information Science) and one institute (The Institute for Cognitive Science Research) that will be its principal tenants, i.e., the National Institutes of Health, the National Science Foundation, the Department of Energy, private corporations and foundations, along with the Department of Defense.

Why then is the Air Force providing funds to support the IAST? The natural answer is that it is doing so at the behest of Congress, which in FY91 directed that not less than $10 million be made available as a grant from the Defense Department to establish an IAST, with the grant to be awarded through a competitive procedure to a university. Penn won this competition over two other universities, thus accounting for the $10 million that has already been obligated. In FY92, Congress awarded the IAST the additional $10 million mentioned above. I believe that Congress made these awards within the Department of Defense Appropriations Act because of the simple consideration that supporting the scientific and technological research infrastructure at American universities is in the long-term national security interests of the United States.

Finally, let me turn to Professor Kohler’s implicit challenge to the value of free inquiry. He notes that work in the IAST, despite its open and basic nature, can have military as well as civilian applications (this is of course true), and asks whether those who produce knowledge can avoid responsibility for military applications of that knowledge. But, as a historian of science, he surely knows that the results of basic research funded for one purpose frequently have their most profound applications in other areas. The computer technology research that concerns him so much is funded at Penn by the Department of Defense, but also by the National Institutes of Health and the National Science Foundation, and all of it is publishable. Will the military planner only read the results of DOD-funded work, and avert her/his eyes from relevant results of NIH-funded or NSF-funded work? Of course not! Should then all work in computer technology at Penn cease, because some of it might be used for weapons development? If not, which work should proceed and which should be halted, and who should make that decision? And why stop at computer technology or other areas of research mentioned for the IAST? Might not the work of those researchers at Penn who study the cultures, politics, economies, and geographies of third-world nations some day be useful for the planning of military engagements in such areas?

At Penn, as at other research universities, we are caught in the dilemma that while we have a basic commitment to the discovery of new knowledge and to the free dissemination of all knowledge, we cannot control the uses to which such knowledge is put. Rather, we consider, almost as an article of faith, that, in the long run, an increased understanding of the world will lead to a better world. Any consideration of this kind can be questioned, but it is disingenuous of Professor Kohler to raise this issue only as a pretext to attack the programs of the IAST.

In reality, the most challenging is the value of free inquiry itself.

— Barry S. Cooperman
Vice Provost for Research

Response by Dr. Gorte
I was very surprised to see Professor Kohler list New Materials and Catalysts as one of the military projects which will be undertaken in the new IAST since this topic encompasses the majority of the proposed work by chemical engineers in this building. I did not realize that my own work, mainly in pollution-control catalysis, and that of Professor John Vohe in semiconduc tor processing (needed for manufacturing cheaper electronic devices with less toxic wastes) and oxidation (unique in the production of plastics and fibers that each of us takes for granted in our homes and offices) was so sinister. There are important technological problems in this country which need to be solved in order to make our air and water clean and our semi-conductor and chemical industries more efficient and competitive with foreign manufacturers. It is totally illogical, and one might even say paranoid, to suggest that research in these technologies should stop. I trust that the University community here at Penn does not take Professor Kohler seriously.

— Raymond Gorte, Associate Professor of Chemical Engineering

Response by Dr. Voth
Over the past year or so I have read many letters written by Robert Kohler to Almanac in which he has outlined the reasons for his opposition to the construction of the Institute for Advanced Science Technology (IAST) and to the destruction of Smith Hall. Until now, I have been hesitant to comment on his letters for fear of further aggravating the situation. However, in view of his most recent letter on the subject of Department of Defense research funding and the IAST [page 2] I feel I must respond.

First of all, I want to comment on what I perceive as a major reason for the IAST. Simply put, the construction of the IAST as planned will be absolutely essential if Penn is to continue to attract and retain outstanding faculty in chemistry and engineering, particularly at the junior level. When one is trying to decide between job offers from competing institutions, a major consideration is the quantity and quality of the space available to house one’s research group. My department is completely out of space. My own group is presently housed in four different offices in four different locations. There is no room left in our building to accommodate the expansion of my research group. If the University decides not to build the IAST, it would be disastrous for me and for the other junior faculty in my department. If the IAST is instead constructed on a remote site, it would lead to continued fragmentation of both the students and faculty, further degrading the scientific atmosphere in chemistry and engineering at Penn. Frankly, Kohler’s latest rhetoric leads me to conclude that he could care less about the young faculty in these departments. He appears ready to go to any length to preserve Smith Hall, no matter whose future is injured in the process.

Secondly, in response to Kohler’s apprehensions and objections to Department of Defense research funding, I would like to clearly state that two DOD grants have been critical to the establishment of my research group and have funded some of my best research. In typical fashion, Kohler also fails to state in his letter any of the potential benefits from DOD funding. In one of my projects, the Air Force has funded me to study the properties of metallic impurities in solid hydrogen. This research could lead to the development of improved rocket fuels which, in turn, could open the space program and would help boost larger civilian satellites into orbit. In a second DOD-supported project, the Office of Naval Research funds me for studies of fundamental kinetic processes in electrochemistry. This research will hopefully lead to a better understanding of corrosion damage to metals as well as to improved battery technology. The latter technology will be critical in the storage of electricity generated by clean, renewable energy sources.

There have never been any strings attached to my DOD-funded research. It is, without question, basic research. I, for one, hope that a fair part of the DOD research budget eventually gets transferred to the “civilian” research agencies. However, no matter which agency funds me, I will still do the same research. I categorically reject the implicit suggestion by Kohler that researchers should somehow swear off DOD funding. To do so would be disastrous for many researchers and for our nation as a whole. To provide one example, most of the research in electronic materials during the last few years has been funded by DOD. If researchers decided not to do research in such a critical field just because it is funded by DOD, Kohler might be pleased (along with our economic competitors), but I hardly think it would be beneficial to anyone else.

As a final point, I want to state my own strong personal opinion regarding the indirect contributions of my research to military technology. I dread the possibility that there might be another war in the future. Although I will do everything in my power to work toward a peaceful world, history tells me that we will probably be involved in another conflict someday. I want Kohler to know that my conscience will not bother me at all if, in some unknown way, my basic research will allow a young American man or woman to have technological superiority over an aggressive enemy. If that technological advantage leads to fewer dead American soldiers and to a quicker resolution of the conflict, then I will have no regrets.

— Gregory A. Voth
Assistant Professor of Chemistry
University of Pennsylvania Police Department Community Crime Report

This Summary is prepared by the Division of Public Safety and includes all criminal incidents reported and made known to the University Police Department between the dates of September 21, 1992 and September 29, 1992. The University Police actively monitor crime at the Psychotherapy and from the Schuylkill River. In this effort to provide you with a thorough and accurate report on Public Safety concerns, we hope that your increased awareness will lessen the opportunity for crime. For any concerns or suggestions regarding this report, please call the Division of Public Safety at Ext. 8-4482.

Crimes Against Persons

34th to 38th to Market to Civic Center: Robberies (& attempts)—3, Simple Assault—1, Threat & Harassment—1
9/23/92 9:26 AM 37th & Walnut Arrest
Complainant refused to leave area
9/25/92 9:22 PM 3400 block Spruce
Complainant threatened
9/26/92 11:05 AM 4110 Sansom St.
Stringing messages left on door.

34th to 38th to Market to Civic Center: Disorderly Conduct—1
9/22/92 7:49 PM Superblock
[6] 

9/22/92 11:23 AM 3400 block Warren
Window broken to vehicle
9/23/92 11:23 AM 4109 Walnut
Building entered/unattended
9/25/92 4:47 PM 4146 Spruce
Complainant (13) broken after attempt
9/26/92 11:05 AM 4110 Walnut St.
Skylight entered to residence/items taken

34th to 38th to Market to Civic Center: Alcohol & Drug Offenses—1
9/23/92 11:23 AM Lot #13
[7] 

Cystic Fibrosis Carrier Testing

Cystic fibrosis (CF) affects one in every 2500 babies born in the United States. It is the most common serious inherited disease among white children. One white person in 25 is a carrier of CF. Carriers are unaffected by the disease but can pass CF on to their children. Daily care and treatments for CF, which affects the lungs and digestion, can be time consuming and costly. There is no cure for CF although scientists may eventually find one.

A new test that can detect 85% to 95% of carriers of CF is now available and is being offered at a greatly reduced cost to couples who are willing to participate in a research study being conducted by Penn’s departments of General Internal Medicine and Ob/Gyn. To be eligible for the study, couples must have no children and both partners must participate. Both pregnant and non-pregnant couples are eligible, but pregnant couples must be less than 12 weeks (3 months) pregnant. Neither partner can have a family member, living or deceased, with CF. The woman must be less than 35 years old. In addition, due to an extremely low CF carrier risk in African-American and Asian/Asian-American couples, testing in these groups is not recommended.

Participants in the study will receive the new test at a reduced cost and will also receive in-depth genetic counseling about cystic fibrosis and the new test from experts in the field. As part of the study, couples will be asked to answer several questionnaires as they follow the research procedures. Participation in the study will require only one office visit to either the Pulmonary Center or the Schuylkill River to 49th Street, Totals: 19 incidents, including 15 robberies, 2 aggravated assaults, and one purse snatch, 5 Arrests

Correction: In last week’s Community Crime Report, the crime listed in Crimes Against Persons on 9/12/92 in Hopkinson Dorm should have read “harassing messages left on door.”

Deadlines: The deadline for Update at Penn is each Tuesday for the following Tuesday’s issue. The deadline for the November Penn calendar is October 13.