

JUDD APPOINTED SDI CHIEF SCIENTIST AT A TIME OF PROGRAM UNCERTAINTIES

Ever since the resignation of Gerold Yonas in August 1986, Lieutenant General James Abrahamson, director of the Strategic Defense Initiative Organization, has searched for a top scientific adviser. At most Abrahamson sought a Nobel Prize winner and at the least a prominent physicist whose credentials would be acceptable to many scientific opponents of the "Star Wars" program. For a few days last April he thought he had found one at Caltech, but the appointment wasn't made. Then, on 30 October, Abrahamson announced SDI's new chief scientist—O'Dean P. Judd, at 50 the chief scientist for defense research and applications at Los Alamos National Laboratory.

A specialist in high-power laser and particle beam technologies, which are central to President Reagan's grand vision of SDI, Judd holds a bachelor's degree in physics and mathematics from St. John's University in Minnesota and an MS and PhD in physics from UCLA. Before joining the Los Alamos weapons lab in 1972, he worked for 13 years at Hughes Research in Malibu, California, where he concentrated on microwave and laser technologies. During that period he was a Hughes master's and doctoral fellow, earning his final degree in 1968.

Colleagues describe Judd as genial and unassuming, dogged in evolving a physical concept or developing a technical project. At Los Alamos, he is known for his work in laser fusion, laser isotope separation, laser and particle beams, and nonlinear optics. He is credited with being equally at home with theory, experiments and engineering. "Dean's greatest capability is in analysis," says R. Bruce Miller, who recently left Sandia Labs for Titan Technologies in Albuquerque. "He's able to summarize a lot of material in a short amount of time and get to the heart of the matter. If that's what General Abe is looking for, Dean is the right guy for the job."

Judd was involved with ballistic missile defense programs long before the President's Star Wars speech in March 1983. He took part in two Air

Force studies of antiballistic missile and antisatellite projects in the 1970s, and after Reagan's speech he participated in the celebrated defensive technology study under the chairmanship of James C. Fletcher, now administrator of NASA. In the Fletcher study, Judd served on Yonas's panel, which dealt with directed-energy weapons.

Since then, Judd has been a technical adviser to the SDI office. He has written physics primers for the organization on particle beams and impulse discrimination—both still restricted by security classifications. Last year he headed a phenomenology panel for the organization's study of midcourse discrimination, and more recently he was a member of the advisory panel for the most recent study of SDI by the Congressional Office of Technology Assessment. An OTA staffer on the study found Judd "a solid physicist" and "intellectually honest." A member of the advisory panel recalled that Judd was neither critical nor combative in debates with other panelists, such as Richard Garwin of IBM and David Parnas, a computer specialist, both steadfast antagonists of SDI.

Stalled in the Pentagon

Though the OTA report was sent last August to both the Senate and House Committees on Appropriations, which asked for the study almost two years ago, as well as to certain members of Congress, the document has been stalled in the SDI office and in Pentagon clearance procedures. OTA staff had received briefings on all classified SDI programs as well as on some so-called black projects, which rarely are made known even to Congress. After SDI officials read the 900-page typewritten draft, they shot back 167 pages of comments and concerns, particularly on matters dealing with computer software, survivability and battle management. Air Force security officials have been characterized by other Pentagon sources, of all people, as "the bad cop" for stopping the report after the SDI office was satisfied it could be re-



O'Dean P. Judd at his Los Alamos office.

leased. Indeed, argues one of the principal writers of the report, some statements that the Air Force objects to as classified already appear in The American Physical Society's recent report on directed-energy weapons.

"The back-and-forth iterations appear endless," says an OTA staffer. "But I'm still optimistic that there will be an unclassified version for public reading." The summary to the OTA report has now been desensitized and approved for nonclassified release but will not be published until the rest of the text is cleared. The APS report on directed-energy weapons languished in Pentagon declassification procedures for seven months before it was finally released last April, with only a few changes and deletions (see *PHYSICS TODAY*, May 1987).

Possibly the toughest critic of the APS report has been Gregory Canavan (*PHYSICS TODAY*, November, page 48), with whom Judd has sometimes done "back of the envelope" calculations in efforts to validate weapons effects and identify perturbations and peripheral consequences. A physicist who has watched them closely at Los Alamos characterizes Judd as "Greg's alter ego." Says this physicist:

"Dean's very different from Greg. Dean would rather not be at the center of a debate. He won't fan the fires. He will try to reach consensus by finding areas of common agreement."

Judd admitted in an interview at the Pentagon that he expects to approach SDI and its critics with a lowered voice. His temperament, he declared, is uncongenial to political and scientific flamboyance. "General Abe expects me to be analytic, to evaluate and guide the scientific and technical approaches and to help direct the whole program," said Judd. In doing that, he observed, "I expect to give him all sides of the situation. We should take credit for our successes and admit our mistakes and problems. We have to ask ourselves whether we understand a problem and whether we are working to resolve it. We should strongly discourage bad science, bloated rhetoric, flaky arguments and disconnected proposals. I think I have a good nose for judging the right things to do. That's what General Abe wants to know."

Another aspect of the job is to deal with the scientific and technical communities—"outreach," Judd calls it, to academic and industrial researchers, as well as to people in the

national labs and military services. As Judd sees it, the hardest part of his new job is to make the program credible to critics in the scientific and technical communities and, along the way, to attract many more of the best and brightest to work in SDI programs. "It's going to take many sets of people, all the way from fundamental scientists to engineers and managers, to make SDI happen," Judd said. But he does not see himself as a salesman or cheerleader for the program.

Period of transition

As SDI's first chief scientist, Yonas was often viewed by critics as a standardbearer for the program—though, in response, he insists he never went beyond the bounds of good science in making the case for the program. "My job with academia," says Yonas, "sometimes sounded like evangelism, I know. I carried the word forth from Washington to mine enemies. In return, I was often the target on campuses of soft fruit."

Yonas in fact occupied a much different position from the one Judd will hold. From the start, Yonas was also SDI's acting deputy director to Abrahamson. Only in Yonas's final months at SDI was that part divvied up among three deputies—Gordon

Smith, Louis Marquet and Major General Eugene Fox. Yonas also helped establish SDI's international ventures with Britain, West Germany and Japan, and he was often Abrahamson's point man at the White House Office of Management and Budget, the Defense Secretary's office, the Department of Energy and the Arms Control and Disarmament Agency.

Judd arrives at his office on the Pentagon's third floor in a period of transition for SDI. The program is unstrung by budget cuts made in Congress and unsettled by the forthcoming Reagan-Gorbachev summit conference, which is almost sure to include discussions on the association of space defenses against nuclear missiles with the "broad" and "narrow" interpretations of the 1972 Anti-Ballistic Missiles Treaty. What's more, with only 13 more months left for the Reagan Administration, uncertainties exist for the political future of SDI.

In the interim between Yonas and Judd, SDIO's acting chief scientist was Allan Mense, who now returns to his previous position as deputy chief scientist. Yonas is now president of Titan Technologies in San Diego, a subsidiary of Titan Corporation.

—IRWIN GOODWIN

WASHINGTON INS & OUTS SURA GETS NEW PRESIDENT FROM DOE; NSF LOSES TWO COMPUTER CHIEFS

William A. Wallenmeyer, who directed the Department of Energy's high-energy physics program the past ten years and had held equivalent positions at the Atomic Energy Commission and its successor agency, the Energy Research and Development Administration, became president of the Southeastern Universities Research Association on 2 October. SURA functions as a board of directors for the Continuous Electron Beam Accelerator Facility, the 4-GeV superconducting cw machine under construction at Newport News, Virginia, and for SURANET, an advanced computer network. SURA represents 38 colleges and universities in 13 states and the District of Columbia.

Wallenmeyer, who earned a PhD in physics at Purdue, joined the old AEC in 1962 after brief stints at Brookhaven National Laboratory, Wabash College and the now defunct Midwestern Universities Research Association in the 1950s. In the high-energy

physics community he is held in high regard as a dedicated defender of facilities and funding, even in dire budget years.

When Wallenmeyer was offered the top job at SURA last June, many feared he would be prevented from accepting the job by government ethics regulations. The issue in his case is fuzzy. He had been acting associate director of the DOE Office of High Energy and Nuclear Physics in the interim between the retirement of James Leiss and the appointment of Wilmot (Bill) Hess. During that period Congress made the decision to fund CEBAF. Though the department's choice of the SURA design for CEBAF was made before Wallenmeyer became acting director and his job never involved approval of procurement contracts for the machine, he has not yet received a waiver of conflict-of-interest regulations that would allow him to deal with DOE after the statutory one-year ban on interacting

with his former agency has run its course. Even so, the regulations do not prevent him from taking the SURA job.

No question of government ethics came up when **John W. D. Connolly**, director of the National Science Foundation's Advanced Scientific Computing Division, was named to head the University of Kentucky's new Center for Computational Sciences. Connolly had been critical to setting up NSF's supercomputer program. He was in charge of reviewing and selecting the centers in 1984-85. But at no time while he was at the agency did the University of Kentucky compete for a supercomputer grant. In fact, it was only this year that Kentucky's General Assembly budgeted \$5 million in state money for the university's supercomputer. That sum was matched by \$5 million in private gifts and university money. No Federal funds went to the center, thus ensur-