speak, work "inside and outside." For government, for example, the nonprofit organization might both develop the concept of a project and then evaluate the work of industry on it. The special thing about such an organization is that it provides "a common ground."

The nature of national problems has changed, Brown notes. A few years ago they were "external problems"—that is, primarily those affecting defense and space. Now the nation is more concerned with "internal" problems, such as those afflicting transportation, health care, and the whole range of urban problems. "It gets very complicated and tangled up with everybody."

For a nonprofit organization, the problem, says Brown, is "where to connect." For the new institute, the connection has been provided by the state legislature, which has endorsed the enterprise and guaranteed it start-up money, but which will not finance it in the future. Brown expects, however, that the state seal of approval will give the institute status and will make the dialogue with state and local agencies easier. The institute's 12-member board will have the Michigan secretary of state, treasurer, and director of the department of commerce as members, and Brown expects that the other members will be drawn from other sectors of the institute's natural constituency.

Brown resists the characterization of Willow Run as a remote sensing laboratory. "We do a little bit of everything, but it is true we do a lot with sensor systems—infrared, radar, optics." H. J. Nichols, a senior administrative associate, part of whose job is to look at new R&D opportunities, says, "the future is in pattern recognition. And not just pattern recognition, but change detection," which could be applied to medicine, for example, in intensive care units and psychiatry. "It needs more theoretical work," says Nichols, and the institute is anxious to press on.

The National Science Foundation is sufficiently convinced of the possibilities to have included WRL in two RANN (Research Applied to National Needs) projects. The first is a 2-year, $700,000 program aimed at assessing the implications of remote sensing for public policy formulation. The focus is the practical use of sensor technology in land-use planning in Genesee County, Michigan, and the project will be carried out jointly by WRL, an urban and rural planning group at the University of Michigan, and Genesee county planners.

The second project is a technology-assessment effort with the more general purpose of identifying various practical uses of remote sensing. The laboratories will collaborate with lawyers and ecologists from the university in the 18-month, $140,000 project.

There is no indication that the institute will soon close out its military research effort. Of about $7.5 million in federally sponsored research on the books this year, $3 million is funded by the Air Force and $1 million by other defense agencies. NASA contracts stand at $2.5 million; contracts from other federal agencies amount to about $1 million, but represent the fastest growing part of the budget. Contracts from nonfederal sources aggregate only about $200,000 currently.

WRL's budget had dropped somewhat in recent years, but this year it recovered and Brown says that they "think it will be growing actively." Some campus critics have complained that separation from the university now makes it possible for the laboratories to accept military contracts of a type that might have been rejected under the university research review system.

For members of the laboratories' staff, the ending of the university connection will bring some decided changes. TIAA retirement and insurance programs will be continued, but there will be a loss of social, professional, and recreational fringe benefits. The laboratories now have about 350 employees, half of them professionals. About a dozen staff members have held joint appointments at the university, and those appointments will be terminated. Not all of the terms of the divorce settlement have been worked out, but laboratory officials expect that institute staff may still do some part-time teaching, and university faculty and staff may spend time at the laboratories under new arrangements. Brown says the laboratories will keep the emphasis on graduate students, but just how this will be done is not clear.

At the university, the separation of the WRL has caused mixed feelings. The departure of WRL has removed most classified research from the university but apparently has not ended the debate. The process by which WRL came to be "divested" by the university and the implications for the university will be discussed in another article.

It is really not clear yet how the separation will affect the laboratories and the university. What can be said is that WRL provided a successful example of what may be a vanishing phenomenon—the direct cooperation of university researchers interested in advancing the state of the art with military patrons interested in advancing the state of the arms.—JOHN WALSH

# RECENT DEATHS

From Los Alamos Scientific Laboratory, New Mexico, on 19 May:

**Bruce A. Bean**, 28; engineer.

**William P. Frye**, 40; electronic engineer.

**Johnnie E. Gallegos**, 41; senior electronic technician.

**John A. Gill**, 43; staff member electronic engineer.

**Wright H. Langham**, 60; associate division leader for biomedical research.

**Donald A. Larson**, 46; technician.

**Richard O. Niethammer**, 39; engineer.

**Eugene T. Teatum**, 37; staff member.

**A. Adrian Albert**, 66; dean, physical sciences division, University of Chicago; 6 June.

**J. E. Belcher**, 86; professor emeritus of chemistry, University of Oklahoma; 5 May.

**William D. Bliss**, 85; dean emeritus, College of Engineering, Marquette University; 13 May.

**William Bloom**, 72; professor emeritus of anatomy and biophysics, biological sciences division and the Pritzker School of Medicine, University of Chicago; 11 May.

**Windsor C. Cutting**, 64; former dean, Stanford University School of Medicine; 29 May.

**James T. Dobbins**, 83; professor emeritus of chemistry, University of North Carolina; 12 May.

**Bayard Dodge**, 84; president emeritus, American University, Lebanon; 30 May.

**Nikolai V. Fedorenko**, 61; deputy director, A. F. Ioffe Physico-Technical Institute, Academy of Sciences of the U.S.S.R.; 2 February.

**Hetty Goldman**, 90; professor emeritus of archaeology, Institute for Advanced Study; 4 May.

**Ives Hendrick**, 74; professor emeritus of clinical psychiatry, Harvard University; 28 May.

**Kenneth K. Kurihara**, 62; professor

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of economic theory, State University of New York, Binghamton; 12 June.

**David Lyall**, 61; former professor of clinical surgery, New York University School of Medicine; 6 June.

**James L. Madden**, 79; former acting chancellor, New York University; 30 May.

**Alfred Marshak**, 65; professor of experimental pathology, Tulane University School of Medicine; 1 June.

**Champion H. Mathewson**, 90; professor emeritus of metallurgy and metallography, Yale University; 4 July.

**Leonard A. Maynard**, 84; professor emeritus of biochemistry and nutrition, Cornell University; 21 June.

**Henry Michelson**, 83; professor emeritus of dermatology; University of Minnesota; 11 May.

**Stephen M. Nagy**, 61; head, material science department, Massachusetts Institute of Technology; 29 May.

**Louis H. Nahum**, 79; professor emeritus of physiology, Yale University; 25 July.

**Jacob Papish**, 85; professor emeritus of chemistry, Cornell University; 8 June.

**W. Olin Puckett**, 66; professor of biology, Davidson College; 3 June.

**Robert G. Ravdin**, 49; professor of surgery, University of Pennsylvania School of Medicine; 28 March.

**Mathias G. Richards**, 65; associate dean, College of Life Sciences and Agriculture, University of New Hampshire; 22 May.

**Vernon F. Schwalm**, 85; president emeritus, Manchester College; 10 May.

**David Seegal**, 73; professor emeritus of medicine, Columbia University College of Physicians and Surgeons; 24 July.

**George C. Shattuck**, 93; professor emeritus of tropical medicine, Harvard University; 12 June.

**Mary R. Sheehan**, 67; professor emeritus of psychology, Hunter College, City University of New York; 20 February.

**Vincent E. Smith**, 56; professor of social sciences, Queensborough Community College; 18 May.

**William W. Stanbro**, 58; former chairman, radiology department, George Washington University; 23 June.

**Percy F. Swindle**, 82; professor emeritus of civil engineering, University of Washington; 5 May.

**Claude R. Taylor**, 68; professor of microbiology, Howard University; 27 May.

**Trygve W. Tuve**, 39; chief, research training grants branch, NIGMS, National Institutes of Health; 1 June.

**Georg von Békésy**, 73; professor of sensory sciences, University of Hawaii; 13 June.

**Ludwig von Bertalanffy**, 71; professor of social sciences and administration, natural sciences and mathematics, State University of New York, Buffalo; 12 June.

**Leuman M. Waugh**, 95; founder and former associate dean, Columbia University School of Dental and Oral Surgery; 6 May.

**Robert L. Wilder**, 71; former professor of pediatrics, University of Minnesota; 25 February.

**Asher Winkelstein**, 78; clinical professor emeritus of medicine, Mount Sinai School of Medicine; 30 May.

**Henry T. Wycis**, 61; former professor of surgery, Temple University Medical School; 30 June.