

Briefings

edited by CONSTANCE HOLDEN

Infectious Disease Grants

Research on infectious diseases is getting a boost from the private sector in the form of a new and lucrative program launched by Bristol-Myers Squibb Company. The corporation has awarded unrestricted grants, each worth half a million dollars over 5 years, to five investigators: Roy Curtiss III of Washington University School of Medicine in St. Louis, developer of a new vaccine to protect chickens (and thus chicken eaters) against *Salmonella typhimurium*, a major cause of food poisoning; Stanley Falkow of Stanford University School of Medicine, who works on whooping cough vaccines; William Haseltine of Harvard's Dana-Farber Cancer Institute, who studies AIDS and other retroviruses; Peter Palese of New York's Mount Sinai School of Medicine, an influenza virus expert; and Bernard Roizman of the University of Chicago, who has been studying the Herpes simplex viruses for 30 years.

Bristol-Myers Squibb, which already funds medical research in several other areas, is also starting an annual research prize, worth \$50,000, to be awarded for "Distinguished Achievement in Infectious Disease Research."

CF Screening Studies Nearing Reality

Ah, sweet victory. For more than a year now, geneticists have been searching for someone—anyone—to foot the bill for pilot studies to evaluate how to deliver a DNA test that would detect carriers of the defective cystic fibrosis gene. The American Society of Human Genetics (ASHG) and others have worried that, without pilot studies to demonstrate adequate education and counseling (among

Looking for Loyalty in DNA

Genetics researchers at the University of California at Berkeley have recently embarked on an ambitious experiment: an attempt to link groups of genes to complex traits such as personality, behavior, and body form.

If the work pans out, it could result in the identification of genes that work together to generate behaviors such as loyalty or aggressiveness. But these researchers aren't working with human subjects—rather, they're trying to understand better the lot of man's best friend, *Canis familiaris*.

The idea for a "dog genome project" came to geneticist Jasper Rine a few years ago as he lectured a genetics class about work by MIT's Eric Lander and David Botstein, now at Stanford, in which they identified the multiple genes that interact to produce certain traits in tomatoes. With such a technique, Rine realized, one could also look for the genes responsible for complex genetic traits in animals as well.

Dogs are a "genetic gold mine" for studying such genes, Rine says, since breeders have already

other things), the test could cause more harm than good. This happened, many believe, during the screening for sickle cell anemia in the early 1970s. And the CF screening would dwarf the sickle cell challenge: Tens of millions of people would be tested, which would make this the biggest such program yet in North America.

But while nearly everyone was calling for pilot studies, no one at NIH or at the Cystic Fibrosis Foundation was willing to pay for them, as all claimed the studies fell outside their purview (*Science*, 23 November 1990, p.1076). Last December, though, the ASHG challenged the NIH genome center to put its money where its mouth was. The center rose to the occasion. It has promised some of its own money and has, over the past few months, wrested commitments from the NIH nursing, child health, and kidney institutes. A request for proposals has gone out; \$1 million is expected to be available to support five studies this year.



Doberman. Bred for aggressiveness.

Robert Peary

laid a solid foundation. Dog breeds not only vary tremendously in shape and size, they've also been bred specifically for behavior traits—Dobermans for aggressiveness, Newfoundlanders for water rescue, border collies for herding aptitude. Years of inbreeding have left purebreds quite genetically homogeneous, especially for the genes that govern their breed characteristics. By studying both purebreds and the offspring of

crosses between breeds, Rine and his postdoc, Elaine Ostrander, hope to use the Lander/Botstein method to zero in on some of those genes, and they are applying for funding from the National Institute of Mental Health. A likely spinoff of the project could be the development of screening programs for genes implicated in disorders such as hip dysplasia and epilepsy.

The first step is the construction of a general map of the canine genome, a project Rine and Ostrander started last summer and which they may be able to complete in 3 years—if they work like dogs.

Myths and Maths

While much of the media is preoccupied with dismal reports about precollege math, the National Research Council (NRC) has been grading higher education math efforts. In a new report, "Moving Beyond Myths,"* the NRC flunks undergraduate teaching and calls for radical reform.

In American colleges today, "the profile...is not much different from that of mathematics in high school," says the report by the Mathematical Sciences 2000 Committee, headed by William E. Kirwan, president of the University of Maryland at College Park. As many students are enrolled in remedial math as are in calculus; attrition rates in all math courses are "chronically high"; interest in majoring

*"Moving Beyond Myths: Revitalizing Undergraduate Mathematics," is available for \$7.95 plus postage (prepaid) from the NAS Press, 1101 Constitution Ave. NW, Washington, D.C. 20418. One of a trio of reports including "Everybody Counts" (1989) and "A Challenge of Numbers" (1990).

in math is "at an all-time low" among entering freshmen; and faculty retirements will soon exceed current doctoral degree production.

The report decries a "dysfunctional system" of undergraduate math that perpetuates ideas such as that "all useful mathematics was discovered long ago." Teaching methods have changed little in 3 centuries, and the impact of computing on math has penetrated "only in isolated experimental courses." The report goes on to blame the schism between teaching and research for the fact that many faculty are professionally isolated and unable to keep abreast of modern developments.

The report calls for a multi-fronted attack to counteract the "inertia" controlling undergraduate math, including programs to enhance teaching effectiveness, more math courses targeted at females and minorities, the funding of computer labs, and the development of faculty networks.