Outlook

Naval Medical Research and Development Command

Vol. 1 Issue 2 *On The Cutting Edge of Medical Research Today* December 1990

Outlook is published triannually by NMRDC. Views and opinions are not necessarily the official views of, nor indorsed by, the U.S. Government, the Department of Defense or the Department of the Navy.

Contributions and comments are encouraged. Address all correspondence to: Outlook Editor Code 00F, NMRDC, NNMC, Bethesda, MD. 20889-5044. (301)295-1453 or Autovon 295-1453

NMRDC GOES TO DESERT SHIELD

This command and several of our laboratories quickly initiated efforts in response to Operation Desert Shield. Our newly established Navy Forward Lab (NFL) is providing laboratory services within theater. NFL personnel have equipment and supplies to diagnosis infectious disease agents, especially agents not routinely seen in hospital laboratories and agents indigenous to the area.

In addition to offering enhanced diagnostic capabilities, NMRDC has provided information and, in some cases, supplies of antibiotics to cover the highly antibiotic-resistant enteric disease pathogens found in the area.

NMRDC also has identified a number of research initiatives now being expedited for delivery to the Fleet for prevention and treatment of casualties.

As our involvment with Operation Desert Shield continues to unfold, we will keep you informed as security interests permit.

INDEPENDENT RESEARCH PROGRAM UNDERGOES MAJOR MANAGEMENT CHANGES

Following lengthy discussions with NMRDC managers and investigators, IR coordinators at the Navy Warfare R&D centers, and the program's sponsors at the Office of Naval Research, some major changes were made in the management of NMRDC's Independent Research (IR) program for FY 91.

Two fundamental goals drove us to resturcture the program. The first was to ensure that each year we can construct the best IR program possible in terms of scientific quality. NMRDC must be able to fund the top research proposals from our entire laboratory system and should not be

Cont. pg. 3

INSIDE THIS ISSUE:

All of Us at Headquarters Wish You a Safe and Festive Holiday Season

WHAT IS THE ASBREM COMMITTEE?

The Armed Services Biomedical Research Evaluation and Management (ASBREM) Committee was established in 1982 in response to Congressional concerns that research efforts may be duplicated within the tri-Service biomedical research communities.

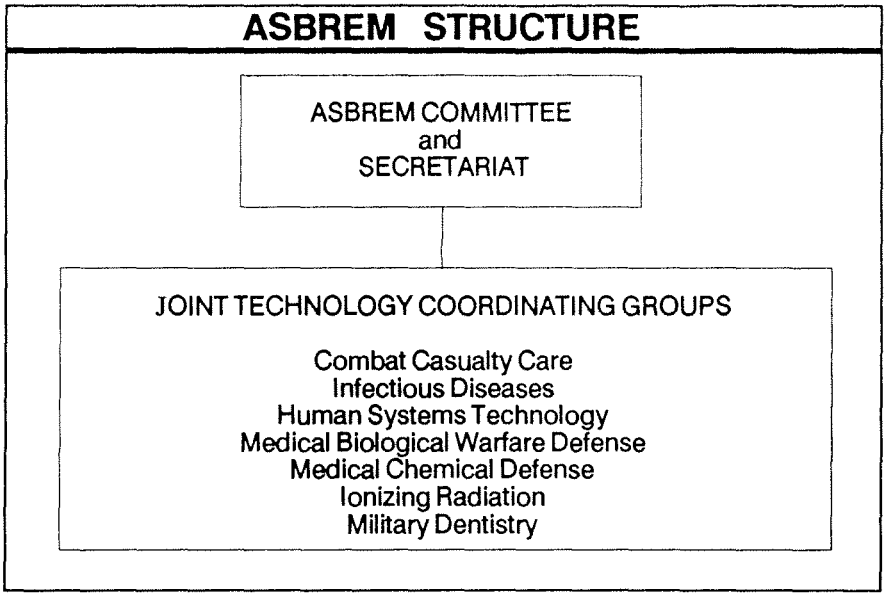
The original goals of the ASBREM Committee were to (1) oversee biomedical research in the DoD, (2) avoid duplication of biomedical research efforts, and (3) ensure compliance of defined research requirements established by the three Services and the DoD.

Originally, ASBREM Committee reviews frequently resulted in the transfer of areas of research from one Service to another. Now the reviews are more for information transfer since the ASBREM Committee process has virtually eliminated duplication of research, and research programs across the Services are well coordinated.

The scope of the ASBREM Committee has expanded beyond the original goals and, currently, the Committee is actively studying and formulating a plan to address unified biomedical laboratory consolidation among the Services. The ASBREM's quick and effective response to this challenge was viewed by the Office of the Under Secretary of Defense as a model for the Services to follow in developing consolidation programs for their non-biomedical laboratories.

The three member ASBREM Committee includes the Commander, U.S. Army Medical Research and Development Command; the Commander, Human Systems Division, Air Force Systems Command; and the Deputy Commander for Fleet Readiness at the Navy's Bureau of Medicine and Surgery.

Reporting to the ASBREM Committee is the Armed Services Biomedical Research Evaluation and Management Committee Secretariat (ASEC), which oversees the activities of the subordinate reviewing committees and keeps the ASBREM Committee members apprised.



The subordinate reviewing Committees are the seven Joint Technology Coordinating Groups (JTCG), each with one representative from the three Services. The seven JTCG and their areas of responsibility are:(1) Combat Casualty Care, (2) Infectious Diseases and AIDS Research, (3) Human Systems Technology, which covers a myriad of human performance issues, (4) Medical Biological Warfare Defense,(5) Medical Chemical Defense, (6) Ionizing Radiation, and (7) Military Dentistry.

The Ionizing Radiation JTCG also has a representative from the Armed Forces Radiobiological Research Institute which is the leading DoD orginization in ionizing radiation and represent the Defense Nuclear Agency.

The JTCG holds reviews of ongoing research programs in the three Services to establish that there is no duplication in the Services' biomedical research programs. The JTCG prepares annual reports for the Office of the Under Secretary of Defense for Acquisition and presents overview briefings to the Life Sciences Division of the Office of the Under Secretary of Defense for Research and Engineering.

Generally, the ASBREM proc... has been very effective. Congress views the committee as a successful organization and has not questioned the areas of medical research being pursued by the military Services over the last several years.

In addition, the DoD looks favorably on the ASBREM process as a way of overseeing tri-Service biomedical research programs and has suggested to the Services the use of this format to oversee many of the other research and acquisition programs among the Services.

The ASBREM Committee process has assured our sponsors, the Navy, DoD and Congress that the best job is being done to meet the biomedical research needs of the Services. The ASBREM Committee will play a more active role as budgets get smaller and pressure increases for tri-Service laboratory consolidation and OSD oversight. It is vital that NMRDC and the laboratories play a significant role in the way t... ASBREM process evolves.

NMRDC'S FIRST COOPERATIVE RESEARCH AND DEVELOPMENT AGREEMENT

Captain James N. Woody, Commanding Officer of NMRDC, signed the command's first Cooperative Research and Development Agreement (CRDA) on July 24, 1990. The agreement transfers a cell line developed by Dr. Donna G. Sieckmann of the Naval Medical Research Institute (NMRI), Bethesda, MD, to Pharmingen for commercial development. The cell line named "DS-1" produces monoclonal antibodies against mouse IgM[a], producing a key reagent for immunoglobulin test kits. Pharmingen, a California-based corporation, provides biological test materials and monoclonal antibody tests to the public. In return for the use of the DS1 cell line, Pharmingen will pay NMRI a fee based on sales of monoclonal antibody test kits.

NMRDC is in the process of negotiating several CRDA with research foundations, corporations, and universities to pursue specific projects. All of these agreements are designed to further advance and benefit the missions of the laboratories.

CRDA were created by Congress in 1986 as part of the Federal Technology Transfer Act. Congress recognized that Federal laboratories and other government facilities have outstanding capabilities and a variety of advanced technologies and these facilities employ skilled scientists, engineers and technicians who could contribute to the posture of U.S. industry.

A CRDA is prepared by a patent attorney or general counsel. To create uniformity in these agreements and avoid conflicts of interests, the DoD, the Secretary of the Navy and the Office of Naval Research issued explicit rules and regulations for the preparation and approval of CRDA.

SECNAVIST 6770.16 issued 27 October 1989, delegates the authority for approving a CRDA to the Chief of Naval Research. Instructions issued under OCNR require each possible CRDA, when negotiated and prepared, to be sent for legal and consistency review to the Chief of Naval Research.

For more information on CRDA contact NMRDC Code OOL (301) 295-6759

DATES TO REMEMBER

December 1990

31 Dec 90 - FY90 Annual Reports due at NMRDC

January 1991

16 Jan 91 - First Interim Report for FY91 due to NMRDC

February 1991

13-14 Feb 91 - 6.1N Review (Part I) at NHRC

27-28 Feb 91 - 6.1N Review (Part II) at NMRI

March 1991

6-7 Mar 90 - 6.1N ARI competition

For information concerning the calendar contact NMRDC Code 40B (301) 295-1468

IR PROGRAM UNDERGOES MAJOR MANAGMENT CHANGES Cont. from pg. 1

constrained by predetermined funding percentages that have historically been allocated to our laboratories. Secondly, we wanted to capture for our investigators a unique opportunity provided by the IR program.

In IR, investigators have a chance to pursue scientifically stimulating ideas and approaches to mission-relevant problems that may be of higher risk than is acceptable in other sponsor-directed programs. Clearly, an ONR goal for the IR program is to contribute to the retention of outstanding scientists in the Navy's R&D laboratories.

For the FY91 IR program, the process for selecting proposals for funding was similar to NIH's grant award system. Each IR proposal was assessed by 2-5 reviewers, including subject area experts from ten extramural research organizations and from NMRDC laboratories, the NMRDC Research Area Managers, and the Director of Research and Development. The reviewers provided scores and comments used to prioritize the proposals.

Of the thirty-one proposals submitted (total cost of $2278K), sixteen studies were funded in the FY91 IR program (total cost $1114K). Congratulations to all our scientists who pursued this research opportunity and especially to our FY91 awardees: Dr. Angela Nilius, LT Stephen Ahlers, Dr. Florence Rollwagen, Dr. Curtis Hayes, Mrs. Lanfong Lee, CDR Mitchell Carl, LT Albert Churilla, Dr. Gregory Dasch, Dr. Patricia Guerry, Dr. Steven Kessler, LT Allen Richards, Dr. John Ryan, LCDR Stephen Savarino, Dr. K. A. Kamal, LT David Kobus, and Dr. Scott Makeig.

New procedures for the IR program have been documented in NAVMEDRSCHDEVCOMINST 3902.1. For a copy of this instruction or for futher information on the IR program, contact NMRDC Code 40B at (301) 295-1468.

NMRDC LABS JOIN ONT'S POSTDOCTORAL FELLOWSHIP PROGRAM

Beginning in FY91, five NMRDC laboratories (NDRI, NMRI and NMRI Toxicology Detachment, NBDL, NSMRL, and NHRC) join NAMRL as participants in the Office of Naval Technology's (ONT) Postdoctoral Fellowship Program. This program, administered by the American Society for Engineering Education (ASEE), is designed to "increase the involvement of creative and highly trained scientists and engineers from academia and industry in scientific and technical areas of interest and relevance to the Navy."

The ONT/ASEE program brochure includes biomedicine and biotechnology among the topic areas of interest. The fellowship program is similar to the National Research Council's (NRC) Resident Research Associateship Program (RRA) in which most CONUS NMRDC labs have been participating for a number of years. Both postdoctoral programs require the applicants to hold a Ph.D., Sc.D., or recognized equivalent degree and to be approved by a professional review panel. Both provide one year appointments (renewable to two years), a group health plan, and allowances for relocation and professional travel. However, there are some differences between these two programs that should be noted:

ELEMENT	ONT/ASEE	NRC/RRA
1. One "free" associate annually [a]	YES	NO
2. Associate stipend (year 1)	$36.0K	$32.0K
3. Associate stipend (year 2)	$37.0K	$33.0K
4. U.S. citizenship	REQUIRED	NOT REQUIRED (must speak English)
5. "Secret" clearance eligibility	REQUIRED	NOT REQUIRED
6. Estimated cost to lab	$45.1K	$51.0K
7. Laboratory payment	After approval of candidate, directly to ONT.	Before approval of candidate, through NMRDC contract.
8. Application deadlines	1 Jan/1 Apr/1 Jul/1 Oct	15 Jan/15 Apr/15 Aug
9. Notification	20 Feb/20 May/20 Aug/20 Nov	4-6 weeks post application

[a] ONT will provide NMRDC (not each NMRDC laboratory) one free associate each year. This associate's costs are fully paid by ONT for the first year; the laboratory pays for the associate's renewal during the second year. ONT provided this benefit with the stipulation that NMRDC take the responsibility for deciding which laboratory gets the "free" postdoc. For more information contact NMRDC Code 40B (301) 295-1468

HIGHLIGHTS OF NMRDC RESEARCH

A New Method For Growing Bone Using In Vitro Culture

A new bone cell culture system, developed by S.W. Whitson, B. Tyree, and M.C. Falk at the Naval Medical Research Institute (NMRI), Bethesda, MD, allows the complete process of bone formation to be studied under controlled laboratory conditions. Scientists can begin to understand and control the processes of bone cell proliferation, matrix synthesis, and mineralization -- events critical to the process of bone healing after combat-related injuries.

In the near-term, the ability to culture bone will provide scientists with a method for studying and controlling the physiological stages and biochemical factors of bone formation. Researchers have already identified a new hydrolytic enzyme that may prove important in the maturation of newly secreted bone matrix. The ultimate benefit of this bone-culturing system will be the development of new treatment strategies to enhance bone repair in Navy battlefield casualties. It is envisioned that large sheets of human bone cells could be grown in vitro and implanted in patients to fill bone deficits, or used with other implants to ensure the success of post-traumatic reconstructive surgery.

Researchers Develop A New Approach To Tuberculosis Testing

Researchers from the U.S. Naval Medical Research Unit No. 3, Cairo, Egypt, and the Centers for Disease Control (CDC), Atlanta, GA, are developing a rapid diagnostic test for tuberculous meningitis, a disease caused by Mycobacterium tuberculosis.

This new test is based on the frequency-pulsed electron capture measurement of carboxylic acids separated by gas-liquid chromatography (GLC) and specifically detects tuberculostearic acid in cerebrospinal fluid of patients suspected of having meningitis. The GLC-based test produces results in three hours, while the current culture-based assay takes approximately one month to complete. Additionally, this new test is far more sensitive than the standard culture method (95% and 50% sensitivity, respectively) and has a 91% specificity for M. tuberculosis.

For more information on NMRDC research projects contact NMRDC Code 40 (301) 295-1468