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News Release

USU Malaria Researcher Wins Prestigious National Berry Award

BETHESDA, Md. — Donald R. Roberts, Ph.D., emeritus professor of tropical medicine at the Uniformed Services University of the Health Sciences (USU) has been named winner of the annual Frank Brown Berry Prize in federal health care for his persistent efforts and field studies on the controlled use of chemicals to prevent malaria.

The Berry Prize is co-sponsored by U.S. MEDICINE, and Delta Dental Federal Services, which is the administrator of the TRICARE Retiree Dental Program. An award of $10,000 accompanies the prize.

Dr. Roberts, a retired lieutenant colonel from the Army medical service corps, has spent a career researching malaria prevention, and despite the social implications of the issue, he came to understand through field studies how the controversial chemical DDT repels mosquitoes that carry the malaria parasite. During his time at the Walter Reed Army Institute of Research (WRAIR) in Washington, D.C., from 1980 to 1984, and USU from 1984 to 2007, he worked to develop laboratory assays that significantly changed the way malaria is studied and how new chemicals are screened. And in his retirement, which began this summer, Dr. Roberts will continue in his advocacy work with the World Health Organization (WHO), the Gates Foundation and Africa Fighting Malaria in the hopes of continuing to change the public perception of DDT, a chemical that he says can help save millions of lives.

The Berry Prize, which is voted on by an independent panel of leading health care experts, was created in 1997 by the monthly publication, U.S. MEDICINE of Washington, D.C., to confer recognition on medical practitioners and researchers who work in the U.S. federal health care sector reaping little personal financial gain, but who rise above and beyond the call of duty to make outstanding medical research advancements and/or achievements in clinical care. The prize was named after Dr. Frank Brown Berry, the top medical officer of the Department of Defense for several years in the 1950s who exemplified this segment of individuals as a dedicated thoracic surgeon, compassionate physicians' advocate, founder of many surgical societies and by serving in two world wars and completing two residencies at a time when pursuing even one was not the norm.

There were several highly qualified finalists for the Berry award this year who had exhibited many outstanding accomplishments in federal health, but it was Dr. Roberts' high profile work in malaria prevention that seemed to catch the judges' eyes. Dr. Roberts' interest in malaria prevention was actually first launched with his Army research unit work in Brazil during the 1970s.

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Using huts on mosquito-filled riverbanks, Dr. Roberts and his team of students tested the effects of DDT on mosquitoes. To his surprise, they found that the chemical works primarily to repel, not kill mosquitoes.

Even though the repellent action of DDT had been observed before, the scientific community had persisted in thinking of DDT as a toxic chemical that could be rendered useless by mosquito resistance. Dr. Roberts would spend the rest of his career changing the perception of how DDT works, which was no small feat in a post-silent spring, environmentally conscious world that had largely cast the chemical aside.

Dr. Roberts became head of the Department of Entomology at WRAIR in 1980 and started a program to develop an enzyme link to detect malaria sporozoites in mosquitoes. Before this enzyme link was created, detecting the sporozoites was a time-consuming and complicated procedure. By the time Dr. Roberts left Walter Reed in 1984, the enzyme link was in use around the world, enabling researchers to process large numbers of mosquitoes for the sporozoites in much less time.

Dr. Roberts moved on to USU, where he was able to focus on DDT issues. He assembled a research team that developed better laboratory assays to detect the behavioral actions of chemicals. This process has enabled his team to collaborate with the Department of Agriculture and the chemical industry to test the effects of new chemicals, and it may lead to studies that could result in a new generation of repellents. Although he favors using DDT in homes, he does not favor restarting agricultural use of the chemical.

By demonstrating that DDT is a safe and effective weapon in the fight against malaria, Dr. Roberts strove to reverse global policy against the chemical. Environmentalists have fought against DDT for decades and powerful industries have thrown their weight behind other, less effective malaria control measures, but the WHO and the U.S. Agency for International Development recently reversed their policies by endorsing indoor spraying of DDT. This represents a major about-face for these agencies, which used to deny funding to countries that used DDT in any capacity. The public perception of the chemical remains negative, however, and it is still difficult for countries to use it in malaria control programs. Dr. Roberts will continue to deliver his message to policymakers, and he hopes the upcoming publication of his first book will help the reading public to understand the benefits of DDT for malaria control.

The Uniformed Services University of the Health Sciences is the nation’s federal health sciences university. USU educates health care professionals dedicated to career service in the Department of Defense and the United States Public Health Service. The university provides military and public health-relevant education, research, service and consultation to the nation and the world, pursuing excellence and innovation during times of peace and war.

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