

Navy Medicine Oral History Project
CAPT Judith E. Epstein, MC, USN
Clinical Director, Vaccine Development Program
Naval Medical Research Center
Silver Spring, MD

Date and Location of Interview: 4 April 2014, Naval Medical Research Center, Silver Spring, MD

Interviewer: Mr. André Sobocinski, Historian, BUMED

SYNOPSIS

Judith E. Epstein, MD, is the Department Head of the Naval Medical Research Center (NMRC) Clinical Trials Center, a division of the Translational Research Office (TReO), located on the Walter Reed National Military Medical Center (WRNMMC) campus. She has spent the last 14 years working as a physician-scientist in the U.S. Military Malaria Vaccine Program, Naval Medical Research Center. After over a decade as a professional ballet dancer, CAPT Epstein returned to school and received her B.S from Columbia University (1985) and her M.D. from Harvard Medical School (1990). She did her pediatric residency at the Children's Hospital of Philadelphia and her pediatric infectious diseases fellowship at Children's Hospital in Boston. The latter included a 4 year award from the Pediatric Scientist Development Program to conduct basic science research in the field of innate immunity. Since arriving at NMRC, CAPT Epstein has led clinical trials of candidate malaria vaccines covering a number of platforms including DNA, recombinant and adenovirus- vectored vaccines. She has authored or co-authored more than 40 scientific manuscript and book chapters on topics including original vaccine research, controlled human malaria infection and malaria treatment. However, the major focus of her research has been the development and testing of a whole-parasite malaria vaccine. Her first-author publication providing the results of the first clinical trial with a radiation-attenuated, aseptic, purified cryopreserved *Plasmodium falciparum* vaccine appeared in the journal *Science* in 2011. A Board certified physician in pediatric infectious diseases, Dr. Epstein holds a faculty appointment at the Uniformed Services University of the Health Sciences, serving as an Attending Physician at WRNMMC. She is member of multiple NIAID Safety Monitoring Committees and Vice-Chair of the NMRC Institutional Review Board. Dr. Epstein is a member of the American Society of Tropical Medicine and Hygiene and a Fellow of the American Academy of Pediatrics. She serves on the Scholarly Oversight Committee for Pediatric Infectious Diseases Fellow Research, National Capital Consortium and has

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served as a research mentor to numerous students, residents and fellows.

KEY WORDS

Ballet
Children's Hospital in Boston, MA
Columbia University, New York, NY
Harvard Medical School, Cambridge, MA
Infectious Diseases
Iranian National Ballet
Malaria Vaccine
Naval Medical Research Center (NMRC), Silver Spring, MD
Navy Medicine
The Pediatric Scientist Development Program (PSDP) at Cincinnati Children's Hospital
Plasmodium falciparum
Sanaria, Inc.
Tropical Medicine
U.S. Military Malaria Vaccine Program
Whole-parasite sporozoite vaccines
Youth Art For Healing

KEY FIGURES

William Barnet (1911-2012) - was an American artist known for his paintings, watercolors, drawings and prints depicting the human figure and animals, both in casual scenes of daily life and in transcendent dreamlike worlds.

Agnes de Mille (1905-1993) - Legendary dancer and choreographer. Early mentor of CAPT Epstein.

Stephen H. Friend, MD/MPH - the former Senior Vice President of Merck & Co. He later founded Sage Bionetworks, an early promoter of "open science," a movement to make scientific research, data and dissemination for accessible to public inquiry.

CAPT (ret.) Stephen L. Hoffman, MC, USN - From 1987-2001, Dr. Hoffman was Director of the Malaria Program at the Naval Medical Research Center where he built a focused professional team of over 100 individuals in the United States and overseas working on all aspects of malaria research, but especially vaccine

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development and genomics. Dr. Hoffman and his team were leaders in the effort to sequence the *P. falciparum* genome and conducted the first studies in the world that showed that DNA vaccines elicited killer T cell responses in humans. In early 2001 Dr. Hoffman retired from the Navy and joined Celera Genomics as Senior Vice President of Biologics to create a program to utilize genomics and proteomics to produce new biopharmaceuticals. He established this program, organized the effort that successfully sequenced the genome of the mosquito responsible for most transmission of malaria in Africa, *Anopheles gambiae*, and left Celera in August 2002 to found Sanaria, primary mission is to develop and commercialize whole-parasite sporozoite vaccines that confer high-level, long-lasting protection against *Plasmodium falciparum*, the malaria parasite responsible for more than 95% of malaria associated severe illness and death world-wide and the malaria parasite for which there is the most significant drug resistance.
(www.sanaria.com)

James Harvey McGuire - served as the Chief of Parasitic Diseases and later Parasitic Diseases Branch at the Centers for Disease Control (CDC) from 2001-2005. He served as an instructor of Tropical Medical Health at Harvard Medical School from 1983 to 1988.

Mary Sinclair (1914-2004) - artist and mother of CAPT Epstein.

Glossary of Terms

2001: A Space Odyssey (1968)—was a ground-breaking film directed by Stanley Kubrick based on the Arthur C. Clarke novel. In the film's most famous scene, an early human ancestor is seen throwing a bone into the sky while standing in front of a mirror-like object called the "monolith" symbolizing the evolution of man.

Iranian National Ballet—established in 1968 by the Iranian Ministry of culture. Dissolved in 1979 after the Islamic Revolution.

Joint Warfighter Grant—The Armed Services Committee provides \$50,000,000 for the Defense Health Program to continue funding projects that enhance combat readiness and

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warfighter relevant medical research. The funding shall not be used for new projects or for basic research. The funding shall be used to continue projects that have shown promise and that will potentially yield further medical breakthroughs. The funding shall be awarded at the Department's discretion following a review of medical research and development gaps, as well as unfinanced medical requirements of the Services. Further, the Committee directs the Assistant Secretary of Defense (Health Affairs) to provide a report not later than 120 days after enactment of this Act to the congressional defense committees, listing the projects that receive funding. The report should include the amount of funding provided to each project and a thorough description of each project's research. (Joint War Fighter Program Grant, <http://thomas.loc.gov>.)

"Knockout Mouse"— A genetically engineered mouse in which researchers have inactivated, or "knocked out", an existing gene by replacing it or disrupting it with an artificial piece of DNA. The loss of gene activity often causes changes in a mouse's phenotype, which includes appearance, behavior and other observable physical and biochemical characteristics.

*M*A*S*H*—Robert Altman film (1970) and later television series (1972-1983) about a group of skilled by rule-breaking military surgeons at the 4077th Mobile Army Surgical Hospital in Korea.

MuStD05— A multivalent plasmid DNA vaccine for malaria comprised of five plasmid DNAs encoding five proteins from *Plasmodium falciparum* and one plasmid DNA encoding human Granulocyte-macrophage colony-stimulating factor (GM-CSF).

RTS,S DNA Vaccine— Experimental recombinant protein-based vaccine for malaria.

TENS Machine—Transcutaneous electrical nerve stimulation (TENS) is a device that stimulates nerves with electrical current for therapeutic purposes.

Youth Art For Healing—is a non-profit organization whose mission is to bring works of art created by youth into healthcare environments to provide a sense of comfort, inspiration and healing for patients and their loved ones, and healthcare professionals.