



# Armed Forces Research Institute of Medical Sciences (AFRIMS)





*LTC Viseth Ngauy, MD*  
*Department of Retrovirology*

*AIDS Vaccine Meeting*  
*Community Satellite Session*  
*September 12, 2011*  
*Bangkok, Thailand*



# AFRIMS Area of Operations



- 1. Department of Enteric Diseases
- 2. Department of Entomology
- 3. Department of Immunology & Medicine
- 4. Department of Retrovirology
- 5. Department of Virology



# 52 Years of Medical Research at AFRIMS

- 1958 originated as the Cholera Research Project at the Royal Thai Army Institute of Pathology
- 23 Dec 1960 the laboratory was named the SEATO Medical Research Laboratory project
- 25 Apr 1963 establishment of the Clinical Research Center to compliment the SEATO MRL Project
- 19 Jan 1977 both projects under the SEATO Medical Program became the Armed Forces Research Institute of the Medical Sciences



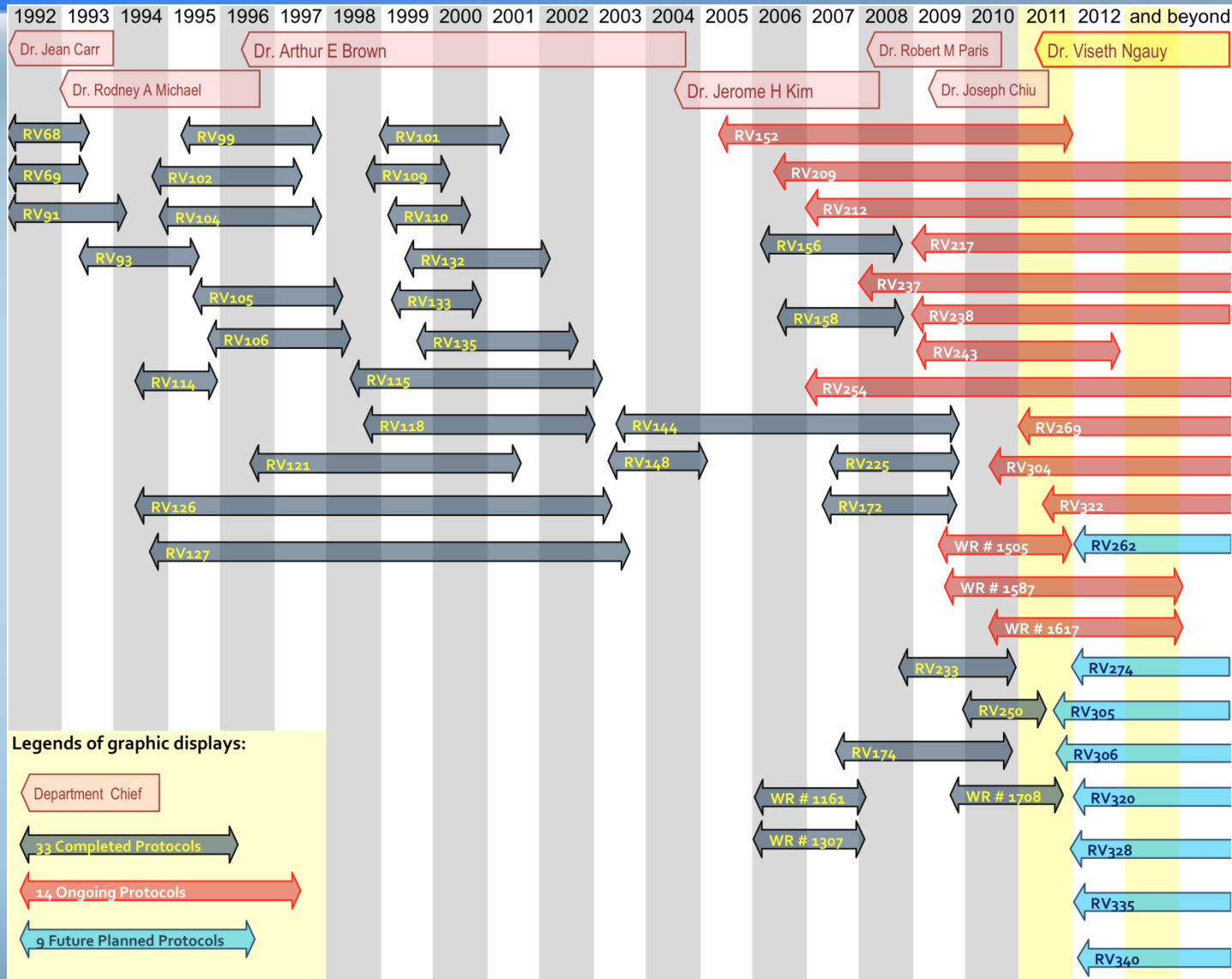


# AFRIMS Science Departments & Programs

- Enteric Diseases (Traveler's Diarrhea)
- Entomology (Malaria, Dengue, Scrub typhus)
- Immunology and Medicine (Malaria, Lepto)
- Retrovirology (HIV)
- Virology (Hepatitis, Dengue, Flavivirus, Influenza)
- Veterinary Medicine (Zoonoses, Animal Research)
- Emerging Disease Surveillance— programs epidemiological and surveillance projects in all departments



# Protocol History





# Mission

- Prevention of HIV-1 Disease in US military personnel to achieve force protection and maintain force readiness:
  - Development of a GLOBALLY effective HIV-1 vaccine
  - Targeted (Regional) HIV-1 surveillance and focused prevention education
  - Regional support of President's Emergency Program for AIDS Relief-- leveraged capacity for prevention research (vaccine, threat assessment) and treatment activities
  - Support National Security Strategy 2006: Engage the Opportunities and Confront the Challenges of Globalization >> Public Health Challenges >> HIV/AIDS



# Current Major Activities-Thailand

- Development of candidate HIV vaccines:
  - Phase III Trial of ALVAC-HIV/AIDS VAX gp120 prime-boost, Eastern seaboard of Thailand (RV144)
    - Modest efficacy in preventing HIV infection (31.2%)
    - Laboratory studies to find correlates of protection
    - Future trials to improve efficacy – boost and different combinations
  - Development of DNA/MVA-CMDR (CRF01\_AE—predominant SE Asian subtype) vaccines
    - Phase I MVA study completed in Oct 2008 (RV158)
    - Laboratory immunomonitoring of multi-national Phase I DNA/MVA trial (RV262)
- Immunologic and virologic studies of HIV focused on immunomonitoring of vaccine responses and description of epidemic in SE Asia
  - Acute HIV Infection cohort development and early HIV-infection pathogenesis (RV254, RV217)
  - Completion breakthrough infections in recipients of RV 144 candidate (RV 152). Final results to be presented at AIDS Vaccine Meeting SEP 2011
- Support to US PACOM mission for Defense HIV/AIDS Prevention Program and DoD PEPFAR-Vietnam (primarily lab technical assistance)





# *The* NEW ENGLAND JOURNAL *of* MEDICINE

## Vaccination with ALVAC and AIDSVAX to Prevent HIV-1 Infection in Thailand

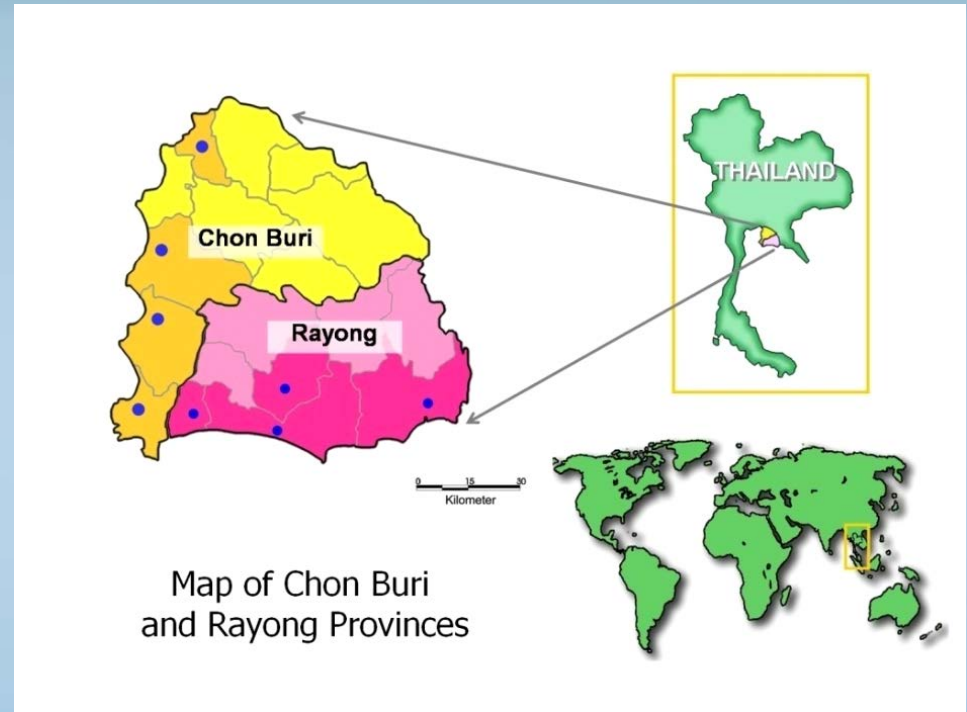
Supachai Rerks-Ngarm, M.D., Punnee Pittisutthithum M.D., D.T.M.H., Sorachai Nitayaphan, M.D., Ph.D.,  
Jaranit Kaewkungwal Ph.D., Joseph Chiu, M.D., Robert Paris, M.D., Nakorn Preamsri, M.D.,  
Chawetsan Namwat, M.D., Mark de Souza, Ph.D., Elizabeth Adams, M.D., Michael Benenson, M.D.,  
Sanjay Gurunathan, M.D., Jim Tartaglia, Ph.D., John G. McNeil, M.D., Donald P. Francis, M.D., D.Sc.,  
Donald Stablein, Ph.D., Deborah L. Bix, M.D., Supamit Chunsuttiwat, M.D., Chirasak Khamboonruang, M.D.,  
Prasert Thongcharoen, M.D., Ph.D., Merlin L. Robb, M.D., Nelson L. Michael, M.D., Ph.D., Prayura Kunasol, M.D.,  
and Jerome H. Kim, M.D., for the MOPH-TAVEG Investigators\*

NEJM 361:2209 (03 Dec 09)



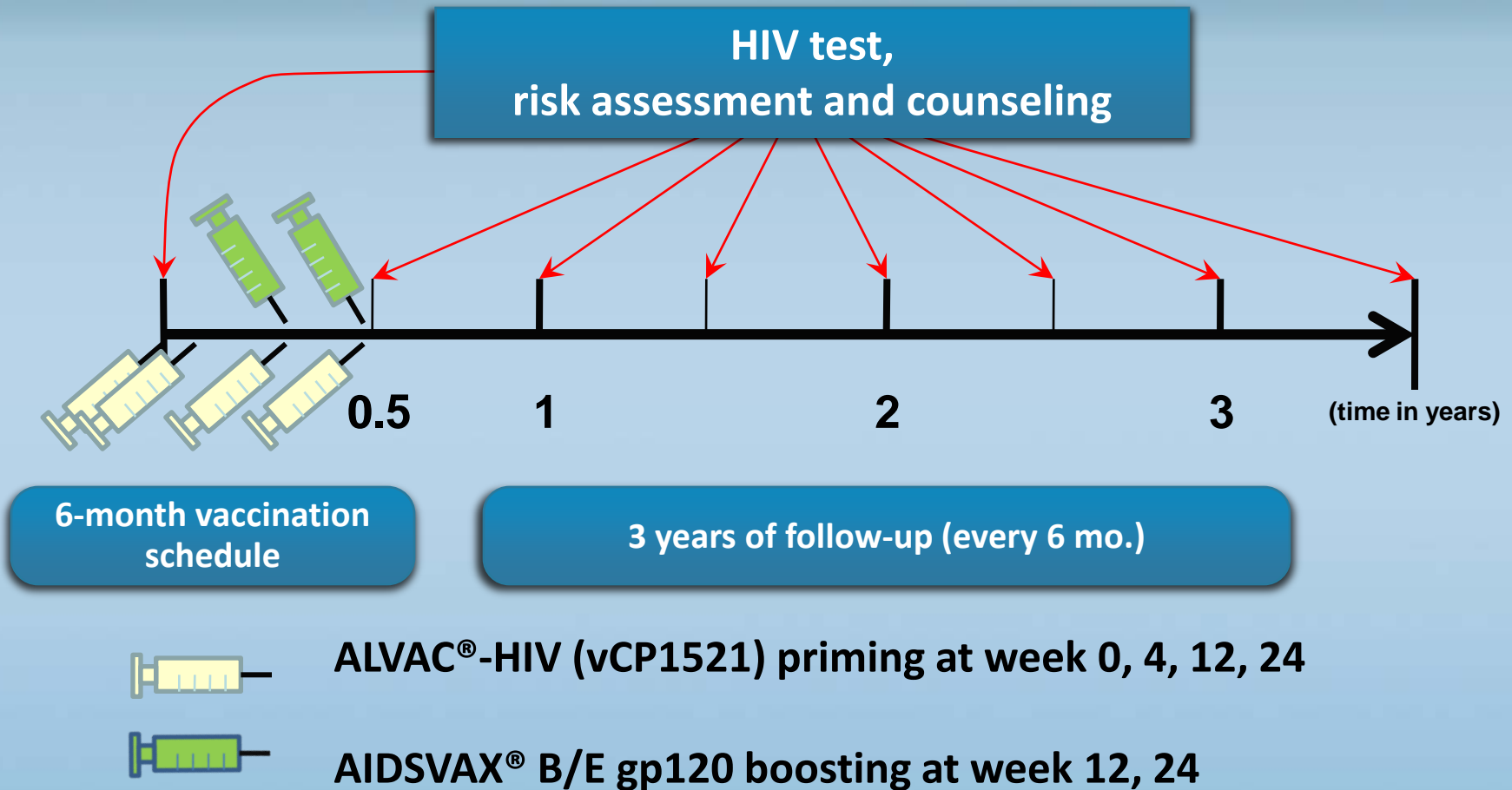
# Design

- Community-based, randomized, double-blind, placebo-controlled trial (vaccine: placebo 1:1)
- Volunteers: HIV negative, healthy, 18-30 years of age
- 6-month period of study vaccinations
- HIV testing every 6 months for 3 years post-vaccination





# Vaccination and Follow-up Schedule





# Efficacy at 1 year appeared higher

*(Kaplan-Meier-based estimates)*

	mITT			PP	
<i>month</i>	<b>Events</b>	<b>Efficacy</b>		<b>Events</b>	<b>Efficacy</b>
6	<b>16</b>	<b>54%</b>		n/a	n/a
12	<b>42</b>	<b>60%</b>		21	68%
18	<b>67</b>	<b>44%</b>		41	41%
24	<b>82</b>	<b>36%</b>		53	27%
30	<b>95</b>	<b>36%</b>		62	31%

Can we build on this early efficacy?



# Questions Raised by RV 144

- **Can we boost early/often to improve efficacy?**
- **Is it the combination or the individual product?**
- **Was the risk group studied important?**
- **What is the correlate of protection?**
  - Characterize the immune response in all the compartments—systemic and mucosal
  - Is it the antibody response?
- **Can we improve on the current candidates?**



# RV 305

- N= 162 (community)
- Product: ALVAC and AIDSVAX
- Objective:
  - Evaluate effect of a late boost on cellular and humoral immune responses in the mucosal and systemic compartments
  - Evaluate early boosting with combo and individual components
- Sites: Thailand MOPH provincial hospitals—  
Banglamung and Phantong
- Anticipated start: OCT 2011



# RV 328

- N = 40 (community)
- Product: AIDSVAX
- Objective:
  - To evaluate cellular and humoral immune responses in the mucosal and systemic compartments
  - To provide a comparison to ALVAC+AIDSVAX combination
- Site: Thai Red Cross AIDS Research Center (TRCARC)
- Anticipated start: May 2012



# RV 306

- N = 460 (community)
- Product: AIDSVAX + ALVAC
- Objective:
  - To evaluate cellular and humoral immune responses in the mucosal and systemic compartments
  - Effect of early boosting
  - Comprehensive immunogenicity study to evaluate the product
- Sites: Vaccine Trial Center (Mahidol Univ), RIHES (Chiang Mai Univ), Royal Thai Army, TRCARC
- Anticipated start: July 2012





# Partners and Collaborators

- Our volunteers
- NGOs and advocates
  - Foundation for AIDS Rights (FAR)
  - AIDS Access Foundation (ACCESS)
  - Thai Network of People Living with HIV/AIDS (TNP+ eastsern)
  - Thai NGO Coalition on AIDS (TNCA)
  - Health and Opportunity Network (HON)
  - Foundation for Service Workers In Group (SWING)
- Local and Regional
  - Royal Thai Army, Thai Ministry of Public Health, Academic (Siriraj, Mahidol, Chulalongkorn, Chiang Mai),
  - Thai Red Cross, SEARCH (Southeast Asia Research Collaboration with Univ of Hawaii)
  - Thailand-US CDC Collaboration
  - USAID, Vietnamese Ministry of Defence (through PEPFAR support)
- US Government
  - NIAID/DAIDS, NIAID/DCR/IDCRP
  - US PACOM/COE
  - USAID
  - US CDC
- International and Academic:
  - WHO/UNAIDS
  - Global HIV/AIDS Vaccine Enterprise (GHAVE)
  - Int'l AIDS Vaccine Initiative (IAVI)
  - HIV Vaccine Trial Network-Statistical Center for HIV/AIDS Research and Prevention (HVTN-SCHARP)
  - Johns Hopkins Bloomberg School of Public Health
  - Duke University (Collaboration for AIDS Vaccine Discovery)
  - sanofi pasteur
  - Global Solutions for Infectious Disease (formerly VaxGen)
  - Novartis (formerly Chiron)
  - Gilead (ARV training grant)
  - Henry M. Jackson Foundation



# Questions?