GVIRF 2014: Welcoming and Opening Remarks	
Rapporteurs: Angela Hwang and Marie Pierre Preziosi	
Session Outline	**Chair:** Jean-Marie Okwo Bele **Opening remarks:** Francisco Becerra, PAHO **Presentation:** Keynote Lecture- Anthony Fauci, Vaccine Research and Development: Challenges and Opportunities Lee Hall: GVIRF in the context of the Decade of Vaccines Joachim Hombach: GVIRF overview and link to the GVAP Jose Esparza: What do we expect from the meeting?
Objectives of the session	N/A
Main outcome	N/A
Summary (400-500 words)	The purpose of the Decade of Vaccines is to enhance collaboration across the vaccine community, as captured in the GVAP and 2013 Vaccine supplement. We meet now in the context of developing and introducing new vaccines. Vaccines are the classic example of the benefits of biomedical research. Smallpox eradication and declining mortality from measles, polio, tetanus, and diphtheria show its extraordinary success in R&D and implementation. GAVI has contributed to prevent an estimated 6 million deaths from its founding in 2000 to 2013. Traditionally, the way to a successful vaccine is to mimic natural infection, producing lasting immunity. When we look at the future, we will go beyond this paradigm to induce "unnatural immunity" when natural immune responses are inadequate, as with HIV, malaria, or influenza. We have many tools to apply, such as genomics, reverse vaccinology, structure-based design, new vaccine platforms, B-cell lineage vaccine design, and harnessing the innate immune system. • HIV/AIDS vaccinology has held many disappointments and a few blips of hope. The first signal of efficacy came in a trial in Thailand, with a prime-boost strategy, that showed a modest 31% efficacy despite the lack of response according to the customary markers and led to exploring correlates of risk and protection. 20% of individuals developed broadly neutralizing antibodies 2 years or longer after infection, with lots of chronic stimulation, showing co-evolution of virus and antibody, ultimately producing neutralizing antibodies targeting variable regions. Iterative vaccine design can mimic natural HIV infection, with sequential isolation of virus generating related immunogens and iterative immunogens used for sequential immunization. • Influenza poses a perpetual threat, with 250,00 to 500,000 deaths globally and periodic pandemics. Most natural antibodies bind to the highly variable head region of the HA protein, but antibodies to the conserved stem region can bind to multiple strains. Presenting the stem region as a chimeric molecule, a headless hemagglutinin, or a nanoparticle can yield a more cross-protective immune response. • RSV causes hospitalizations in young children. 6-7% of deaths in children 1 month to 1 year are caused by RSV and it is a precursor of asthma. Fusion protein is part of virus spike and conserved across strains. Pre-fusion form is unstable and biochemical stabilization was used to improve its ability to elicit neutralizing antibodies. • Malaria has an annual burden of 207 million cases and every minute a child under 5 dies from malaria. Our vision is a vaccine with 75% efficacy against clinical malaria that reduces transmission of the parasite. NAID is committed to malaria vaccines, with many candidates in the pipeline. RTS,S is the furthest ahead, but has four-year efficacy <17%. Alternative approaches are promising but there is a long way to go. We must think beyond the DoV in R&D because the challenge of discovery, delivery, and implementation in vaccines is not measured in a decade, but is a perpetual challenge.
Key references or quotes	We must think beyond the DoV in R&D because the challenge of discovery, delivery, and implementation in vaccines is not measured in a decade, but is a perpetual challenge.