18th ANNUAL CONFERENCE ON VACCINE RESEARCH
APRIL 13-15, 2015
BETHESDA, MD

SUNDAY, APRIL 12, 2015
4:30–6:30 pm Registration Grand Ballroom Foyer

MONDAY, APRIL 13, 2015
7:30 am–5:00 pm Registration Grand Ballroom Foyer
7:30 am Poster Set-Up Grand Ballroom Foyer
7:45 am Continental Breakfast Grand Ballroom Foyer
8:15 am Welcome and Introductions Susan J. Rehm, MD National Foundation for Infectious Diseases Bethesda, MD

Keynote I:
Moderator: Myron M. Levine, MD, DTPH Grand Ballroom Salons E-H
Center for Vaccine Development University of Maryland School of Medicine Baltimore, MD
8:30 am 1 Vaccines against RSV: The Time Has Finally Come Barney S. Graham, MD, PhD National Institute of Allergy and Infectious Diseases National Institutes of Health Bethesda, MD
9:15 am Questions and Answers
9:30 am Coffee Break

Symposium 1: Accelerating the Development of Impeded Vaccines Grand Ballroom Salons E-H
Moderator: Bruce G. Weniger, MD Chiang Mai University Atlanta, GA
9:45 am 2 Development of Safe and Effective RSV Vaccines for Children: Lessons from the Past...and the Present Ruth A. Karron, MD Bloomberg School of Public Health Johns Hopkins University Baltimore, MD
10:10 am 3 Overcoming Obstacles in the Development of Group A Streptococcal Vaccines Karen L. Kotloff, MD Center for Vaccine Development University of Maryland School of Medicine Baltimore, MD
10:35 am  4  **Obstacles to Development of Lyme Disease Vaccines**  
Stanley A. Plotkin, MD  
University of Pennsylvania  
Vaxconsult LLC  
Doylestown, PA

11:00 am  5  **Therapeutic Vaccines against Alzheimer's Disease: Breakthroughs and Setbacks**  
Cynthia A. Lemere, PhD  
Brigham & Women's Hospital  
Harvard Medical School, Center for Neurologic Diseases  
Boston, MA

11:30 am  Questions and Answers

12:00 pm  **Lunch (on your own)**

**Symposium 2: Glycomics in Vaccine Development**  
Moderator: Raphael Simon, PhD  
Grand Ballroom Salons E-H  
University of Maryland School of Medicine  
Baltimore, MD

1:00 pm  6  **Challenging Dogma: New Insights on Carbohydrate Antigens and Immune Responses**  
Fikri Y. Avci, PhD  
Center for Molecular Medicine, Complex Carbohydrate Research Center  
University of Georgia  
Athens, GA

1:30 pm  7  **Progress in Using Synthetic Oligosaccharides to Construct Carbohydrate Protein Conjugate Vaccines**  
Laurence A. Mulard, PhD  
Institut Pasteur  
Paris, France

2:00 pm  8  **Immune Responses to S. pneumoniae Capsular Polysaccharides**  
Clifford M. Snapper, MD  
Department of Pathology  
Uniformed Services University of the Health Sciences  
Bethesda, MD

2:30 pm  Questions and Answers

3:00 pm  **Coffee Break**
Submitted Presentations 1A: The Science of Immune Response

(Concurrent Sessions) Moderator: Alison Mawle, PhD
Centers for Disease Control and Prevention
Atlanta, GA C.

3:30 pm S1 Single-Nucleotide Polymorphism/Haplotype Associations with Multiple Rubella-Specific Immune Response Outcomes After MMR Vaccine
I. Ovsyannikova, H. M. Salk, B. R. Larrabee, G. A. Poland
Mayo Clinic and Foundation, Rochester, MN

3:45 pm S2 High Fidelity Mutations in the Venezuelan Equine Encephalitis Vaccine TC-83 Increase Immunogenicity and Attenuation and Alter Fidelity in V3526
T. Kautz\textsuperscript{1}, M. Guerbois\textsuperscript{2}, F. Kong\textsuperscript{3}, R. Yun\textsuperscript{2}, R. Langsjoen\textsuperscript{2}, M. D. H. Alcorn\textsuperscript{2},
H. Spratt\textsuperscript{2}, B. A. Luxon\textsuperscript{2}, S. C. Weaver\textsuperscript{2}, N. L. Forrester\textsuperscript{2}
\textsuperscript{1}University of Texas Medical Branch, Webster, TX; \textsuperscript{2}University of Texas Medical Branch, Galveston, TX; \textsuperscript{3}University of Texas Medical Branch, Houston, TX

4:00 pm S3 RSV Infection & Vaccines: New Molecular Tools for Better Understanding of Antibody Immune Responses Following RSV Vaccination & Infection Identify Novel Vaccine Targets
S. Khurana, S. Fuentes, H. Golding
US Food and Drug Administration (FDA), Silver Spring, MD

4:15 pm S4 Profiles of Antigen Specific B Cell Responses Elicited by Heterologous HIV-1 Env DNA Prime and Protein Boost Vaccines
H. Li\textsuperscript{1}, L. Zhang\textsuperscript{2}, Y. Chen\textsuperscript{3}, D. Farfan\textsuperscript{1}, W. Li\textsuperscript{1}, S. Wang\textsuperscript{1}, S. Lu\textsuperscript{1}
\textsuperscript{1}University of Massachusetts Medical School, Worcester, MA;
\textsuperscript{2}The First Affiliated Hospital of Nanjing Medical University, Nanjing, China

4:30 pm S5 Smallpox Vaccine Recipients with a Clinical 'Take' but Suboptimal Poxvirus Immunity
I. Ovsyannikova, I. Haralambieva, R. Martin Jacobson, R. Kennedy
Mayo Clinic and Foundation, Rochester, MN

Submitted Presentations 1B: Preclinical and Clinical Studies

(Concurrent Sessions) Moderator: Susan J. Rehm, MD

3:30 pm S6 Comparison of Three Whole-cell Pertussis Vaccines in the Baboon Model of Pertussis
J. M. Warfel
US Food and Drug Administration (FDA), Brookeville, MD

3:45 pm S7 Topical Vaccination with HPV Pseudovirions Expressing HSV-2 Glycoprotein to Protect Against Genital Herpes
National Cancer Institute, National Institutes of Health (NIH), Bethesda, MD
4:00 pm
**S8** Immune Correlates of Protection in Cholera: Analysis of Data from a Human Challenge Model
J. K. Simon¹, W. Chen², M. Cohen³, B. Kirkpatrick⁴, M. Gurwith¹, R. Hall⁵, M. Lock¹, D. Haney¹, S. S. Jackson², C. Lyon⁴, M. Levine²
¹PaxVax Inc., Redwood City, CA; ²University of Maryland School of Medicine, Baltimore, MD; ³Cincinnati Children’s Hospital, Cincinnati, OH; ⁴University of Vermont College of Medicine, Burlington, VT; ⁵National Institutes of Health (NIH), Rockville, MD

4:15 pm
**S9** Prospective Clinical Trial of Hepatitis B Vaccine in Adults With and Without Type 2 Diabetes Mellitus
A. Trofa⁹, O. X. Van Der Meeren¹, M. Dionne², J. Peterson³, P. R. Ebeling⁴, R. Beasley⁵, P. Rheault⁶, M. D. Nissen⁷, M. De Ridder¹, P. Crasta⁸, J. M. Miller⁹
¹GlaxoSmithKline, Wavre, Belgium; ²National Institute of Public Health of Québec, Québec, Canada; ³Foothills Family Clinic, Salt Lake City, UT; ⁴Monash University, Clayton, Victoria, Australia; ⁵University of Otago, Wellington, New Zealand; ⁶Sudbury, Ontario, Canada; ⁷Children's Health Queensland, Australia; ⁸GlaxoSmithKline, Mumbai, India; ⁹GlaxoSmithKline, King of Prussia, PA

4:30 pm
**S10** Acceptance of Fluzone Intradermal Among Patients Aged 18-64 Years Vaccinated During the 2011-2012 Influenza Season
J. B. Garcia-Diaz², A. Theppote¹, A. Egger³
¹University of Queensland - Ochsner Clinical School, Queensland, Australia; ²Ochsner Medical Foundation, New Orleans, LA; ³Ochsner Health System, Metairie, LA

4:45 pm
**S11** Pilot Study: Inactivated Influenza Vaccination, Immune Responses and Reproductive Hormones in Non-pregnant Women
K. Talaat¹, C. Coles¹, J. Bream¹, S. Klein¹, K. Chang¹, P. Grier¹, J. Peretz¹, C. Vellozzi², K. Broder², N. Halsey¹
¹Johns Hopkins Bloomberg School of Public Health, Baltimore, MD; ²Centers for Disease Control and Prevention (CDC), Atlanta, GA

5:00–6:00 pm
**Welcome Reception & Poster Presentations**
*Grand Ballroom Foyer*
TUESDAY, APRIL 14, 2015

7:00 am–5:00 pm  Registration  Grand Ballroom Foyer

7:00–7:45 am  Richard J. Duma Meet the Experts Breakfast Session  Forest Glen

7:30–8:30 am  Continental Breakfast & Poster Presentations  Grand Ballroom Foyer

Keynote II:  Mary Lou Clements-Mann  CE
Memorial Lecture in Vaccine Science  Grand Ballroom Salons E-H
Moderator:  Marion F. Gruber, PhD
Center for Biologics Evaluation and Research
US Food and Drug Administration
Rockville, MD

8:30 am 9  Addressing Antimicrobial Resistance through Vaccines
Carole A. Heilman, PhD
National Institute of Allergy and Infectious Diseases
National Institutes of Health
Rockville, MD

9:15 am  Questions and Answers

9:30 am  Coffee Break

Symposium 3:  New Vaccine Candidates  CE  Grand Ballroom Salons E-H
Moderator:  Cristina Cassetti, PhD
National Institute of Allergy and Infectious Diseases
National Institutes of Health
Bethesda, MD

9:45 am 10  Vaccination as a Countermeasure to Prevent Zoonotic Transmission and Disease Caused by MERS-CoV
Vincent J. Munster, PhD
Rocky Mountain Laboratories
National Institutes of Health
Hamilton, MT

10:20 am 11  Nipah/Hendra Virus Animal Vaccines
Christopher C. Broder, PhD
Uniformed Services University of the Health Sciences
Bethesda, MD

10:55 am 12  Dengue Vaccines
Stephen S. Whitehead, PhD
National Institute of Allergy and Infectious Diseases
National Institutes of Health
Bethesda, MD

11:30 am  Questions and Answers
12:00 pm  **NFID Luncheon**  *Grand Ballroom Salon D*

**Robert Austrian Memorial Lecture by Matthew R. Moore, MD, MPH**
Medical Epidemiologist, Centers for Disease Control and Prevention, Atlanta, GA
Captain, United States Public Health Service

**Dr. Charles Mérieux Award Presentation to D.A. Henderson, MD**
Distinguished Scholar, Johns Hopkins Bloomberg School of Public Health, Baltimore, MD
Center for Biosecurity of University of Pittsburgh Medical Center

**Maurice R. Hilleman Early-Stage Career Investigator Award Presentation**

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**Symposium 4: Innovations in Assessment of Vaccine Efficacy**  
*Grand Ballroom Salons E-H*

**Moderator:**  Kathleen M. Neuzil, MD, MPH  
PATH  
Seattle, WA

1:30 pm  **13 Regulatory Considerations in Vaccine Effectiveness Evaluation**  
Wellington Sun, MD  
US Food and Drug Administration  
Rockville, MD

2:00 pm  **14 Human Challenge Model for ETEC Vaccines**  
Chad K. Porter, PhD, MPH  
Naval Medical Research Center  
Silver Spring, MD

2:30 pm  **15 Accelerating the Development of Vaccines against Malaria using Controlled Human Malaria Infection (CHMI)**  
Christian F. Ockenhouse, MD, PhD  
Malaria Vaccine Initiative  
PATH  
Washington, DC

3:00 pm  **Questions and Answers**

3:30 pm  **Coffee Break**

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**Submitted Presentations 2A: Vaccine Effectiveness in Disease Prevention**  
*Grand Ballroom Salon E*

**Moderator:**  Kathleen M. Neuzil, MD, MPH

4:00 pm  **S12 Tdap Effectiveness and Waning in Adolescents with Entirely Acellular Pertussis Vaccine History During California’s 2010 and 2014 Pertussis Outbreaks**  
N. P. Klein, J. Bartlett, B. Fireman, R. Baxter  
Kaiser Permanente Vaccine Study Center, Oakland, CA

4:15 pm  **S13 Trends in Incidence of Herpes Zoster Before and After Licensure of Zostavax®**  
Kaiser Permanente Vaccine Study Center, Oakland, CA
4:30 pm  S14  Impact and Effectiveness of 13vPCV Dosage Schedule with No Booster Among Australian Children
S. Jayasinghe, H. E. Quinn, R. Menzies, P. McIntyre
1National Centre for Immunisation Research and Surveillance, Westmead, Australia; 2Sydney Children's Hospital Network, Westmead, Australia

4:45 pm  S15  Using the Effective Reproduction Number to Validate Whether Estimates of Basic Reproduction Number Are Correct for Global Measles Elimination
G. Lim, F. M. Guerra, S. Deeks, N. Crowcroft
Public Health Ontario, Toronto, Ontario, Canada

5:00 pm  S16  Incidence of Dengue in Pediatric Cohorts from 10 Asian and Latin American Countries: Control Group Analysis from Two Dengue Vaccine Phase 3 Clinical Trials
1Sanofi Pasteur, Lyon, France; 2Sanofi Pasteur, México City, Mexico; 3Sanofi Pasteur, Singapore; 4Sanofi Pasteur, Marcy l'Etoile, France

Submitted
Presentations 2B: Vaccine Safety and Public Perception (Concurrent Sessions)  Richard J. Duma, MD, PhD
Moderator: Halifax Medical Center
Daytona Beach, FL

4:00 pm  S17  Frequency and Safety of Tdap Vaccination During Pregnancy
A. Berenson, J. Hirth, M. Rahman, T. Laz, K. Sarpong, R. Rupp
University of Texas Medical Branch at Galveston, Galveston, TX

4:15 pm  S18  Lack of Association between Vaccination and Death among Individuals 9-26 Years of Age Following HPV Vaccine and Other Routinely Administered Vaccines in the Vaccine Safety Datalink
1Centers for Disease Control and Prevention (CDC), Atlanta, GA; 2Group Health Research Institute, Seattle, WA; 3Kaiser Permanente, Pasadena, CA; 4Marshfield Clinic Research Foundation, Marshfield, WI; 5Kaiser Permanente, Denver, CO; 6Kaiser Permanente Vaccine Study Center, Oakland, CA; 7HealthPartners Institute for Education and Research, Minneapolis, MN; 8Center for Health Research Northwest Portland, OR

4:30 pm  S19  Enhanced Surveillance of Tetanus Toxoid, Reduced Diphtheria Toxoid, and Acellular Pertussis (Tdap) Vaccines in Pregnancy in the Vaccine Adverse Event Reporting System (VAERS), 2011–2014
P. Moro, J. Cragan, N. Tepper, Y. Zheteyeva, O. Museru, P. Lewis, K. Broder
Centers for Disease Control and Prevention (CDC), Atlanta, GA

4:45 pm  S20  Measles-Containing Vaccines: Reviewing Vaccine Safety to Counter Vaccine Hesitancy
N. Crowcroft, T. Harris, K. Wong, S. Deeks
Public Health Ontario, Toronto, Ontario, Canada
Can We Use Facebook to Recruit Vaccine Hesitant Parents?
J. Tustin\(^1\), N. Crowcroft\(^2\), D. Gesink\(^3\), I. Johnson\(^2\), B. Lachapelle\(^2\)
\(^1\)Ryerson University, Toronto, Ontario, Canada; \(^2\)Public Health Ontario, Toronto, Ontario, Canada, \(^3\)University of Toronto, Toronto, Ontario, Canada

WEDNESDAY, APRIL 15, 2015

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
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<tr>
<td>7:00 am–1:00 pm</td>
<td>Registration</td>
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<tr>
<td>7:00–7:45 am</td>
<td>Richard J. Duma Meet the Experts Breakfast Session</td>
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<tr>
<td>7:30-8:00 am</td>
<td>Continental Breakfast</td>
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Submitted Presentations 3A: Vaccine Design (Concurrent Sessions)

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<tr>
<th>Time</th>
<th>Presentation</th>
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<tbody>
<tr>
<td>8:00 am</td>
<td>S22 Defining T Cell Epitopes from DosR Regulon Proteins of M. Tuberculosis as Potential Vaccine Candidates</td>
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<tr>
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<td>M. Sharma, K. Pandey, S. Singh, I. Saraav, S. Sharma</td>
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<td>Miranda House, New Delhi, India</td>
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<td>8:15 am</td>
<td>S23 A Non-glycosylated G Protein Vaccine Protects Against Homologous and Heterologous Respiratory Syncytial Virus Challenge</td>
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<td>S. Fuentes, E. Coyle, H. Golding, S. Khurana</td>
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<td>US Food and Drug Administration (FDA), Silver Spring, MD</td>
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<td>8:30 am</td>
<td>S24 HS N-terminal β Sheet Promotes Oligomerization of H7-HA1 That Induces Better Antibody Affinity Maturation and Enhanced Protection against H7N7 and H7N9 Viruses Compared to Inactivated Influenza Vaccine</td>
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<td>S. Khurana, E. Coyle, H. Golding</td>
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<td>US Food and Drug Administration (FDA), Silver Spring, MD</td>
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<td>8:45 am</td>
<td>S25 Nanoemulsion-Adjuvanted Acellular Pertussis Vaccine Induces Robust Mucosal and Systemic Immune Responses with Th17 Cells and Serum Neutralizing Activity in a Rat Model</td>
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<td>V. Bitko(^1), D. Smith(^1), C. Malinczak(^1), J. Pannue(^1), J. Sun(^1), P. Makidon(^2), A. Fattom(^1)</td>
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<td>(^1)NanoBio Corp., Ann Arbor, MI; (^2)University of Michigan, Ann Arbor, MI</td>
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<td>9:00 am</td>
<td>S26 Nanoemulsion-Adjuvanted HSV-2 Intranasal Vaccine for Therapeutic Treatment of Recurrent HSV-2 Infection in a Guinea Pig Model</td>
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<td>T. Hamouda(^1), V. Bitko(^1), R. Cardin(^2), D. I. Bernstein(^3), A. Fattom(^1)</td>
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<td></td>
<td>(^1)NanoBio Corp., Ann Arbor, MI; (^2)Cincinnati Children's Hospital Medical Center, Cincinnati, OH</td>
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<td>9:15 am</td>
<td>S27 The Novel Adjuvant alum-TLR7 Is Able to Potentiate the Immune Response to Glycoconjugate Vaccines</td>
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|               | U. D'Oro\(^1\), C. Buonsanti\(^1\), S. Bufali\(^1\), C. Harfouche\(^1\), L. Galli Stampino\(^3\), F. Mancini\(^1\), F. Corrente\(^1\), C. Balocchi\(^1\), P. Malyala\(^2\), B. Baudner\(^1\), E. De Gregorio\(^1\),
Submitted Presentations 3B: Vaccine Administration and Policy (Concurrent Sessions) Moderator: Marion F. Gruber, PhD

8:00 am S28 Effect of Receiving Combination Vaccines on Vaccine Completion and Compliance Rates among Children Aged 24 Months in the United States G. Krishnarajah², S. Kiyomi Kurosky¹, K. L. Davis¹,
¹RTI Health Solutions, Research Triangle Park, NC; ²GlaxoSmithKline, New Hope, PA

8:15 am S29 Impact of Religious Affiliation and School Tuition on Non-medical Exemptions from School Immunization Requirements in Private Schools in California J. Shaw¹, C. Desemone², R. A. Bednarczyk³, J. Nadeau⁴, E. DeNicola⁴, L. McNutt⁴
¹State University of New York Upstate Medical University, Syracuse, NY; ²University at Albany, State University of New York, Glenmont, NY; ³Emory University, Atlanta, GA; ⁴University at Albany, State University of New York, Rensselaer, NY

8:30 am S30 Cost-Effectiveness of Live-Attenuated Influenza Vaccine (LAIV) versus Inactivated Influenza Vaccine in 2-8 Year-olds R. Zimmerman¹, K. J. Smith¹, J. Raviotta¹, M. Nowalk¹, E. Shim², S. T. Brown³, J. Depasse³
¹University of Pittsburgh, Pittsburgh, Pennsylvania; ²University of Tulsa, Tulsa, OK; ³Carnegie Mellon University, Pittsburgh, PA

8:45 am S31 From Data to Theory: Simplifying the Decision Making Process for Optimal Choice of Vaccine Vial Size W. Yang¹, B. J. Lahue¹, M. Parisi¹, D. Bishai²
¹BD, Franklin Lakes, NJ; ²Johns Hopkins University, Baltimore, MD

9:00 am S32 Pilot Study to Assess the Effect of Prophylactic Antipyretics on Immune Responses and Fever After Inactivated Influenza Vaccine (IIV) in Young Children E. B. Walter, Jr.¹, C. Hornik², H. Lynn³, C. E. McGee², L. Grohskopf⁴, O. Museru⁴, K. Broder⁴
¹Duke University School of Medicine, Durham, NC; ²Duke University, Durham, NC; ³Duke University Medical Center, Durham, NC; ⁴Centers for Disease Control and Prevention (CDC), Atlanta, GA

9:15 am S33 The Challenge of Vaccine Administration and Storage: Do We Know What We Are Doing? P. Strohfus Boise State University, Eagle, ID
9:30 am  
**Coffee Break**

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**Symposium 5:**  
**Immunogen Design and Discovery**  
*Grand Ballroom Salons E-H*

**Moderator:**  
*Hana Golding, PhD*
  Center for Biologics Evaluation and Research
  US Food and Drug Administration
  Bethesda, MD

10:00 am  
**16 Anthelminthic Vaccines**  
Peter J. Hotez, MD, PhD  
Sabin Vaccine Institute  
Texas Children’s Hospital Center for Vaccine Development  
Houston, TX

10:20 am  
**17 Enteric Infections: Host-Pathogen Interactions and Immunogen Discovery**  
Edward T. Ryan, MD  
Harvard University  
Massachusetts General Hospital  
Boston, MA

10:40 am  
**18 Structural Basis for Neutralizing Antibody Determinants**  
James E. Crowe, Jr., MD  
Vanderbilt University Medical Center  
Nashville, TN

11:00 am  
**19 HIV-1 Vaccine Progress**  
John R. Mascola, MD  
National Institute of Allergy and Infectious Diseases  
National Institutes of Health  
Bethesda, MD

11:20 am  
Questions and Answers

12:00 pm  
**Lunch (on your own)**

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**Symposium 6:**  
**New Vaccines: Beyond Infectious Diseases**  
*Grand Ballroom Salons E-H*

**Moderator:**  
*Cyril Gay, DVM, PhD*
  Agricultural Research Service  
  US Department of Agriculture  
  Beltsville, MD

1:00 pm  
**20 Curative Potential of T Cell Transfer Immunotherapy for Cancer**  
Steven A. Rosenberg, MD, PhD  
National Cancer Institute  
National Institutes of Health  
Bethesda, MD

1:30 pm  
**21 T Cell Epitopes for Tumor Antigens**  
David K. Han, PhD  
University of Connecticut School of Medicine  
Farmington, CT
2:00 pm 22 Development of Anti-Cattle Tick Vaccine through Discovery of the Genome Sequence of *Rhipicephalus microplus*
Felix D. Guerrero, PhD
Agricultural Research Service
US Department of Agriculture
Kerrville, TX

2:30 pm Questions and Answers

Closing Session: Updates on Ebola Vaccines in Development
Moderator: Cyril Gay, DVM, PhD

3:00 pm 23 Panel Discussion on Updates on Ebola Vaccines in Development
Ripley Ballou, MD
GlaxoSmithKline

Mark Feinberg, MD
Merck Vaccines

Greg Glenn, MD
Novavax

Marion Gruber, PhD
US Food and Drug Administration

Michael G. Kurilla, MD, PhD
National Institutes of Health

Hanneke Schuitemaker, PhD
Johnson & Johnson

4:30 pm Adjourn