



## **12<sup>th</sup> Annual CEIRS Network Meeting**

Sunday June 23, 2019 – Wednesday June 26, 2019

**The Lord Baltimore Hotel**  
20 West Baltimore Street  
Baltimore, MD 21201

### **Hosted by:**

Johns Hopkins Center of Excellence for Influenza Research and  
Surveillance (JHCEIRS)



### **Sponsored by:**

NIH/NIAID CEIRS Program



## Welcome to Baltimore

Dear Colleagues,

On behalf of the Influenza Program at the National Institutes of Health/National Institute of Allergy and Infectious Diseases/Division of Microbiology and Infectious Diseases (NIH/NIAID/DMID), and the Johns Hopkins Center of Excellence for Influenza Research and Surveillance (JHCEIRS), we welcome you to the 12<sup>th</sup> Annual Meeting of the Centers of Excellence for Influenza Research and Surveillance (CEIRS) in Baltimore, Maryland.

This meeting brings together representatives of the CEIRS network, including the foremost research scientists, public health experts, government representatives, wildlife biologists and veterinarians from all over the world to exchange and discuss critical scientific information on influenza virus infection in animals and in humans. The meeting will focus on progress made on the basic biology of influenza viruses, emerging scientific questions and future directions of the multiyear collaborative CEIRS contracts at: Icahn School of Medicine at Mount Sinai, St. Jude Children's Research Hospital, University of Rochester, Johns Hopkins University, and Emory University.

We anticipate an exciting meeting covering broad areas of the influenza field, such as molecular virology, pathogenesis, immunology, transmission, and human and animal surveillance. There will be nearly 40 speakers, over 120 posters, and plenty of opportunities to form and/or strengthen collaborations, develop interactions and exchange ideas and information, in both formal sessions and informal get-togethers. Our networking dinners at Peabody Heights Brewery and the American Visionary Arts Museum will provide a glimpse into the unique culture of Baltimore while also providing the opportunity for you to network with your fellow CEIRS colleagues.

We hope that you will also take this opportunity to explore and enjoy "Charm City."

Sincerely,

Richard Rothman, MD, PhD  
PI/Director  
JHCEIRS

Andy Pekosz, PhD  
PI/Director  
JHCEIRS

Marciela DeGrace, PhD  
Project Officer, CEIRS  
NIH/NIAID/DMID

# 12<sup>th</sup> Annual CEIRS Network Meeting

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# 12<sup>th</sup> Annual CEIRS Network Meeting

Sunday June 23<sup>rd</sup>, 2019 – Wednesday June 26<sup>th</sup>, 2019

**Lord Baltimore Hotel**

20 W Baltimore Street  
Baltimore, MD

Note: All events will take place at the Lord Baltimore Hotel except the optional dinners Monday and Tuesday night

## Sunday June 23<sup>rd</sup>, 2019

12:00pm - 6:30pm **Arrival and Check-in – Calvert Ballroom Mezzanine (Ballroom Level)**

### Trainee Session – Calvert Ballroom Salon C (Ballroom Level)

|                       |                                                                                                       |                                                   |
|-----------------------|-------------------------------------------------------------------------------------------------------|---------------------------------------------------|
| <b>1:30 – 2:30 pm</b> | Panel: Show me the money: Identifying and assessing potential funding opportunities for your research |                                                   |
|                       | NIAID and NIH Funding                                                                                 | Shawn Gaillard, PhD (NIAID)                       |
|                       | Non-NIH Funding                                                                                       | Matthew Moe, PhD (Dept. of Homeland Security)     |
|                       | Talking to the Program Officer                                                                        | Shawn, Matthew, and Lauren Sauer, MSc (JHCEIRS)   |
| <b>2:30 – 3:00 pm</b> | Building a Budget                                                                                     |                                                   |
|                       | Research Components                                                                                   | Mary McBride, MBA and Lauren Sauer, MSc (JHCEIRS) |
|                       | Indirect Costs                                                                                        |                                                   |
|                       | Budget Justifications                                                                                 |                                                   |
| <b>3:00 – 4:00 pm</b> | Panel: Navigating the pre and post award regulatory environment                                       |                                                   |
|                       | Human Subjects and IRBs                                                                               | Kevin Barrett, RN, BSN (NIAID/ICMOB)              |
|                       | Animal Work and IACUCs                                                                                | Rhonda Stafford, (SJCEIRS)                        |
|                       | Select agents and IBCs                                                                                | Jared Evans, PhD (JHCEIRS)                        |

### Breakout Meetings

**12:30pm – 5:30 pm (invitation only, contact group leads for more information)**

|                          |                                 |                                            |
|--------------------------|---------------------------------|--------------------------------------------|
| <b>12:30pm – 5:30 pm</b> | Human Surveillance/Clinical     | Rich Rothman                               |
|                          | Cohort Steering Committee       | Paul Thomas and Hana El Salahy             |
|                          | Office of Acquisitions Q&A      | Shane Ryan and Dan Bresnahan               |
|                          | NAction!                        | Florian Krammer                            |
|                          | Team Ferret                     | Stacey Schultz-Cherry                      |
|                          | DIGS                            | Justin Bahl, Peter Thielen, Harm van Bakel |
|                          | Surveillance                    | Nicola Lewis                               |
|                          | <b>Center Breakout Meetings</b> |                                            |
|                          | <b>CRIP</b>                     | Salon A                                    |
|                          | <b>Emory/UGA</b>                | Salon D                                    |
| <b>5:30pm – 6:30 pm</b>  | <b>JHCEIRS</b>                  | Salon E                                    |
|                          | <b>NYICE</b>                    | Salon B                                    |

## Monday June 24<sup>th</sup>, 2019

|                    |                                                                                                                                                                                                                                                                                                                   |
|--------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>7:15 - 5:00</b> | Arrival and Check-In – Calvert Ballroom Mezzanine (Ballroom Level)                                                                                                                                                                                                                                                |
| <b>7:15 - 8:15</b> | Breakfast (for hotel guests) – Calvert Ballroom Mezzanine (Ballroom Level)                                                                                                                                                                                                                                        |
| <b>7:15 - 8:15</b> | Poster Session 1 Set-Up –19 <sup>th</sup> floor                                                                                                                                                                                                                                                                   |
| <b>8:30 - 4:00</b> | <b>DPCC Tech and Training Bar – Calvert Ballroom Mezzanine (Ballroom level)</b><br>The DPCC will host a hands-on training area during the meeting where anyone can ask questions, troubleshoot issues, or demo the collaborative resources of the DPCC. Drop-in or see us in the front desk area to setup a time. |

### Meeting Opening - Calvert Ballroom (Ballroom Level)

|                    |                                                                                                                        |                                                |
|--------------------|------------------------------------------------------------------------------------------------------------------------|------------------------------------------------|
| <b>8:15 - 8:30</b> | Welcome                                                                                                                | Rich Rothman, Andy Pekosz and Marciela DeGrace |
| <b>8:30 - 8:45</b> | Update from DMID                                                                                                       | Marciela DeGrace                               |
| <b>8:45 - 9:00</b> | JHCEIRS Center Update                                                                                                  | Rich Rothman                                   |
| <b>9:00 – 9:40</b> | JHCEIRS Keynote: Surveillance for Human Influenza A Virus and the Identification of Mutations that alter Virus Fitness | Andy Pekosz                                    |

### Session 1: Host Responses to Influenza – Calvert Ballroom

Session Chairs: Rebekah Honce and Patrick Wilson

|                      |                                                                                                                                                       |                     |
|----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|
| <b>9:40 - 10:00</b>  | Recruitment of CD4 T cells in human vaccine responses                                                                                                 | Andrea Sant         |
| <b>10:00 - 10:20</b> | Evaluation of Human Lung-Resident CD8+ T Cells Following Symptomatic Seasonal Influenza Infection                                                     | Phillip Mudd        |
| <b>10:20 - 10:40</b> | <b>Break if Purchased - Refreshments in Calvert Ballroom Mezzanine</b>                                                                                |                     |
| <b>10:40 - 11:00</b> | Evaluation of CD4 T Cell and B cell Mediated Immunity Following Early Childhood Infection or Vaccination                                              | Jennifer Nayak      |
| <b>11:00 - 11:20</b> | IgG subclass usage and kinetics in response to influenza vaccination                                                                                  | Susanne L Linderman |
| <b>11:20 - 11:40</b> | Broadly-neutralizing antibodies against influenza viruses utilize polyreactivity to enhance viral binding breadth and neutralization                  | Jenna Guthmiller    |
| <b>11:40 - 12:00</b> | Session 1 Summary/Discussion                                                                                                                          |                     |
| <b>12:00 - 1:15</b>  | <b>Lunch – Versailles Room (lobby level) or International Room (lower level)</b><br><b>NEC Lunch – Royal Conference Foyer (19<sup>th</sup> floor)</b> |                     |

### Session 2: Transmission, Adaptation, and Pathogenesis – Calvert Ballroom

|                                                       |                      |               |
|-------------------------------------------------------|----------------------|---------------|
| Session Chairs: Constantinos Kyriakis and Nancy Leung |                      |               |
| <b>1:15 – 1:30</b>                                    | SJCERS Center Update | Richard Webby |

|                    |                                                                                                                                |                 |
|--------------------|--------------------------------------------------------------------------------------------------------------------------------|-----------------|
| <b>1:30 – 2:10</b> | SJCEIRS Keynote: Zoonotic risks from MERS coronavirus                                                                          | Malik Peiris    |
| <b>2:10 – 2:30</b> | Obesity and influenza A transmission in households in Managua, Nicaragua                                                       | Hannah Maier    |
| <b>2:30 – 2:50</b> | Molecular determinants facilitating sustained interspecies transmission of human H3N2 influenza A virus in United States pigs. | Joshua Powell   |
| <b>2:50 – 3:10</b> | Real-time sequencing during influenza A virus surveillance at the swine-human interface leads to protection of public health   | Andrew Bowman   |
| <b>3:10 – 3:30</b> | <b>Break if Purchased - Refreshments in Calvert Ballroom Mezzanine</b>                                                         |                 |
| <b>3:30 – 3:50</b> | DPCC Center Update                                                                                                             | Stephan Bour    |
| <b>3:50 – 4:10</b> | Interspecies transmission dynamics differs between pathogenic forms of A(H7N9) influenza viruses                               | Thomas Fabrizio |
| <b>4:10 – 4:30</b> | Modeling Influenza Transmission Dynamics from Animal Studies                                                                   | Valerie Le Sage |
| <b>4:30- 4:50</b>  | The evolutionary dynamics of influenza A viruses circulating in mallards in duck hunting preserves in Maryland                 | Nidia Trovao    |
| <b>4:50 – 5:05</b> | Session 2 Summary/Discussion                                                                                                   |                 |
| <b>5:05 – 5:20</b> | Poster Session: 1 Minute Poster Presentations                                                                                  |                 |

#### Poster Session 1 – 19<sup>th</sup> floor

|                    |                                                                                                      |
|--------------------|------------------------------------------------------------------------------------------------------|
| <b>5:20 – 6:40</b> | <b>Poster Session</b>                                                                                |
| <b>6:40</b>        | <b>Buses depart Lord Baltimore for dinner (Lord Baltimore Lobby)</b>                                 |
| <b>7:00 pm</b>     | <b>Optional Dinner at Peabody Heights Brewery</b><br>Trainee/Senior Investigator Networking activity |

## Tuesday June 25<sup>th</sup>, 2019

|             |                                                                            |
|-------------|----------------------------------------------------------------------------|
| 7:15 – 8:00 | Arrival and Check-In – Calvert Ballroom Mezzanine (Ballroom Level)         |
| 7:15 – 8:00 | Breakfast (for hotel guests) – Calvert Ballroom Mezzanine (Ballroom Level) |
| 7:15 – 8:00 | Poster Session 2 Set-Up – 19 <sup>th</sup> Floor                           |
| 8:00 - 8:10 | Housekeeping – Calvert Ballroom Mezzanine (Ballroom Level)                 |

### Session 3: Vaccine Approaches and Protection – Calvert Ballroom

Session Chairs: Nicholas Heaton and Becca Ursin

|               |                                                                                                                                                     |                   |
|---------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|
| 8:10 – 8:25   | NYICE Center Update                                                                                                                                 | Dave Topham       |
| 8:25 – 9:05   | NYICE Keynote: Evolution of Human Seasonal Influenza Virus                                                                                          | Dave Topham       |
| 9:05 – 9:25   | Monoclonal antibody responses after recombinant HA vaccine versus subunit inactivated influenza virus vaccine                                       | Carole Henry      |
| 9:25 – 9:45   | Comparison of human H3N2 antibody responses elicited by egg-based, cell-based, and baculovirus-based influenza vaccines during the 2017-2018 season | Sigrid Gouma      |
| 9:45 – 10:05  | A human broadly cross-reactive anti-influenza virus neuraminidase antibody protects against influenza A and B subtype viruses in the mouse model    | Daniel Stadlbauer |
| 10:05 – 10:25 | <b>Break if Purchased - Refreshments in Calvert Ballroom Mezzanine</b>                                                                              |                   |
| 10:25 - 10:45 | Long-term maintenance of influenza-specific lung resident memory T cells mediated by persistent antigen                                             | Jacob Kohlmeier   |
| 10:45 – 11:05 | Comparison of different influenza vaccine platforms in humans: Repeat vaccination reduce antibody affinity maturation                               | Surender Khurana  |
| 11:05 – 11:25 | Session 3 Summary/Discussion                                                                                                                        |                   |

### Session 4: Pre-Existing Immunity – Calvert Ballroom

Session Chairs: Jacco Boon and Sabra Klein

|               |                                                                                                                                                         |                      |
|---------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|
| 11:25 - 11:45 | Novel Correlates of Protection of Influenza Vaccines Based on Influenza Immune History Antibody Profiles                                                | Tomer Hertz          |
| 11:45 – 12:05 | Longitudinal Assessment of Memory B cell and Plasmablast Reactivity Against Influenza A in Subjects of Varying Age                                      | Rodrigo Abreu        |
| 12:05 – 1:15  | <b>Lunch – Versailles Room (lobby level) or International Room (lower level)<br/>Coordinator Lunch – Royal Conference Foyer (19<sup>th</sup> floor)</b> |                      |
| 1:15 - 1:35   | Impact of pre-existing specific influenza antibodies as a determinant of disease severity and clinical outcome on influenza virus infected patients     | Teresa Aydillo-Gomez |
| 1:35-1:55     | Influenza Incidence and Vaccine Effectiveness 2016-2017 & 2017-2018: Household Influenza Vaccine Evaluation Study                                       | Emily Martin         |



|                  |                                                                                                                                                                   |                 |
|------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| <b>1:55-2:15</b> | Adults who were likely infected with H1N1 influenza viruses in childhood possess high levels of serum antibodies against H5N1 and the group 1 hemagglutinin stalk | Tyler Garreston |
|------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|

#### **TEAMBUILDING    ACTIVITY – Calvert Ballroom**

|                    |                                                                        |
|--------------------|------------------------------------------------------------------------|
| <b>2:15 - 2:40</b> | Teambuilding                                                           |
| <b>2:40 – 3:00</b> | <b>Break if Purchased - Refreshments in Calvert Ballroom Mezzanine</b> |

#### **Session 4: Pre-Existing Immunity (continued) – Calvert Ballroom**

|                    |                                                                |                      |
|--------------------|----------------------------------------------------------------|----------------------|
| <b>3:00 - 3:15</b> | CRIP Center Update                                             | Adolfo Garcia-Sastre |
| <b>3:15 – 3:55</b> | CRIP Keynote: New insights in influenza virus immune responses | Adolfo Garcia-Sastre |
| <b>3:55 - 4:15</b> | Session 4 Summary/Discussion                                   |                      |
| <b>4:15 - 4:50</b> | Poster Session: 1 Minute Poster Presentations                  |                      |

#### **Poster Session #2 – 19<sup>th</sup> floor**

|                     |                                                                                                          |
|---------------------|----------------------------------------------------------------------------------------------------------|
| <b>4:50 - 6:15</b>  | <b>Poster Session 2</b>                                                                                  |
| <b>6:15 – 7:00</b>  | Free/Travel time                                                                                         |
| <b>7:00 - 10:00</b> | <b>Optional Dinner at Visionary Arts Museum</b><br>Panel on Universal Influenza efforts outside of CEIRS |



## Wednesday June 26<sup>th</sup>, 2019

|                    |                                                          |                    |
|--------------------|----------------------------------------------------------|--------------------|
| <b>7:15 - 8:15</b> | Breakfast (for hotel guests)– Calvert Ballroom Mezzanine |                    |
| <b>8:10 - 8:15</b> | Housekeeping – Calvert Ballroom (Ballroom Level)         |                    |
| <b>8:15 - 9:15</b> | <b>Keynote:</b> This Week in Virology Live Podcast       | Vincent Racaniello |

### Session 5: Novel Tools and Technologies – Calvert Ballroom

Session Chairs: Katherine Fenstermacher and Ted Ross

|                      |                                                                                                          |                           |
|----------------------|----------------------------------------------------------------------------------------------------------|---------------------------|
| <b>9:15 - 9:35</b>   | A humanized MDCK cell line for the efficient isolation and propagation of human influenza viruses        | Yoshi Kawaoka             |
| <b>9:35 - 9:55</b>   | Global transcriptional response to influenza virus infection: A comparison between guinea pig and ferret | Rajagowthamee R Thangavel |
| <b>9:55 - 10:15</b>  | Real-time characterization of human influenza virus isolates using the Oxford MinION handheld sequencer  | Thomas Mehoke             |
| <b>10:15 - 10:30</b> | <b>Break if Purchased - Refreshments in Calvert Ballroom Mezzanine</b>                                   |                           |
| <b>10:30 - 10:45</b> | Emory-UGA Center Update                                                                                  | Walt Orenstein            |
| <b>10:45 - 11:25</b> | Emory-UGA Keynote: Prevalence and fitness implications of incomplete IAV genomes                         | Anice Lowen               |

### Session 6: Viral Evolution and Molecular Virology – Calvert Ballroom

Session Chairs: Eric Bortz and Kate Sawatzki

|                      |                                                                                                                                                                        |                           |
|----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------|
| <b>11:25 - 11:45</b> | Phylogenetic analysis of A/H3N2 viruses in Australia reveals long-term changes in genomic evolution and epidemiology                                                   | Vijaykrishna Dhanasekaran |
| <b>11:45 - 12:05</b> | Fitness of Influenza A and B Viruses Harboring Clinically Significant (I38T/F/M) Baloxavir Marboxil Resistance Substitutions                                           | Jeremy C Jones            |
| <b>12:05 - 1:10</b>  | <b>Lunch – Versailles Room (lobby level) or International Room (lower level)</b>                                                                                       |                           |
| <b>1:10 - 1:30</b>   | Mapping the Antigenic Evolution of Influenza A (H3N2) virus Neuraminidase from 1957 to 2012                                                                            | Miruna Elena Rosu         |
| <b>1:30 - 1:50</b>   | Antigenically drifted H3N2 strains display highly restricted binding to sialylated glycans                                                                             | Lauren Byrd-Leotis        |
| <b>1:50 - 2:10</b>   | Antigenic distance of North American swine influenza A virus (H3N2) and human seasonal vaccine strains as an indication of risk to human populations                   | Carine Kunzler Souza      |
| <b>2:10 - 2:30</b>   | Novel neuraminidase glycosylation genotype in clade 3c.2a H3N2 2014-2015 Isolates impacts viral growth on human nasal epithelial cells and inhibitory antibody binding | Harrison Powell           |
| <b>2:30 - 2:50</b>   | Session 5 and 6 Summary/Discussion                                                                                                                                     |                           |

### **Animal Model Olympics! – Calvert Ballroom**

**2:50 - 3:25      Ferrets? Guinea Pigs? Hamsters? Pigs? Mice?**

We'll determine once and for all which influenza animal model is the best!

### **Meeting Wrap-Up**

**3:25 - 3:30      Closing Remarks/Meeting Adjourn**

## Participant List

| Last Name     | First Name | CEIRS Affiliation           | Email Address                             |
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