8th Annual CEIRS Network Meeting & CEIRS Surveillance Meeting

July 26-29, 2015

Hyatt Regency Hotel
125 East Main Street, Rochester, New York
Rochester, New York USA

Hosted by:
University of Rochester
New York Influenza Center of Excellence (NYICE)

Sponsored by:
NIH/NIAID CEIRS Program

Welcome!

Dear Colleagues:

Welcome to the eighth Annual meeting of the Centers of Excellence in Influenza Research and Surveillance network 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 University of Rochester Medical Center's New York Influenza Center of Excellence (URMC NYICE).

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. This 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 Emory University, Mount Sinai School of Medicine, St. Jude Children's Research Hospital, Johns Hopkins University, and the University of Rochester and their affiliates at collaborating institutions.

Influenza virus continues to evolve and emerge throughout the world, in humans and in many different animal reservoirs and we will hear about progress and new discoveries developed by the centers, strengthening our understanding of this pathogen. This will be the first meeting of our group as a whole since the renewal of the CEIRS network, and a great opportunity to share ideas and forge collaborations for the coming few years. Emerging and reemerging influenza viruses continue to pose a significant threat to the health of humans and animals alike, and generating the basic information needed to control this pathogen could be identified as the overarching mission of this network. It is our aim that this week's meeting will propel us towards that goal by sharing new knowledge and stimulating productive interactions among the top scientists in the field.

We anticipate an exciting meeting covering the spectrum of the influenza research from basic virology to immunology to field epidemiology. There will be over 30 speakers, dozens of posters, and plenty of opportunities to exchange ideas and information, form collaborations, and develop relationships in both formal sessions and informal get-togethers. We hope you enjoy this opportunity to visit Rochester and share your data and opinions by being part of this powerful coalition.

Sincerely,

Diane Post, PhD	John Treanor, MD	David Topham, PhD
Program Officer	PI/Director, NYICE	Co-PI/Co-Director, NYICE
NIAID/DMID	URMC	URMC

8th Annual CEIRS Network Meeting & CEIRS Surveillance Meeting

Sunday July 26th, 2015 – Wednesday July 29th, 2015
Hyatt Regency Rochester
125 E Main Street
Rochester, NY 14604

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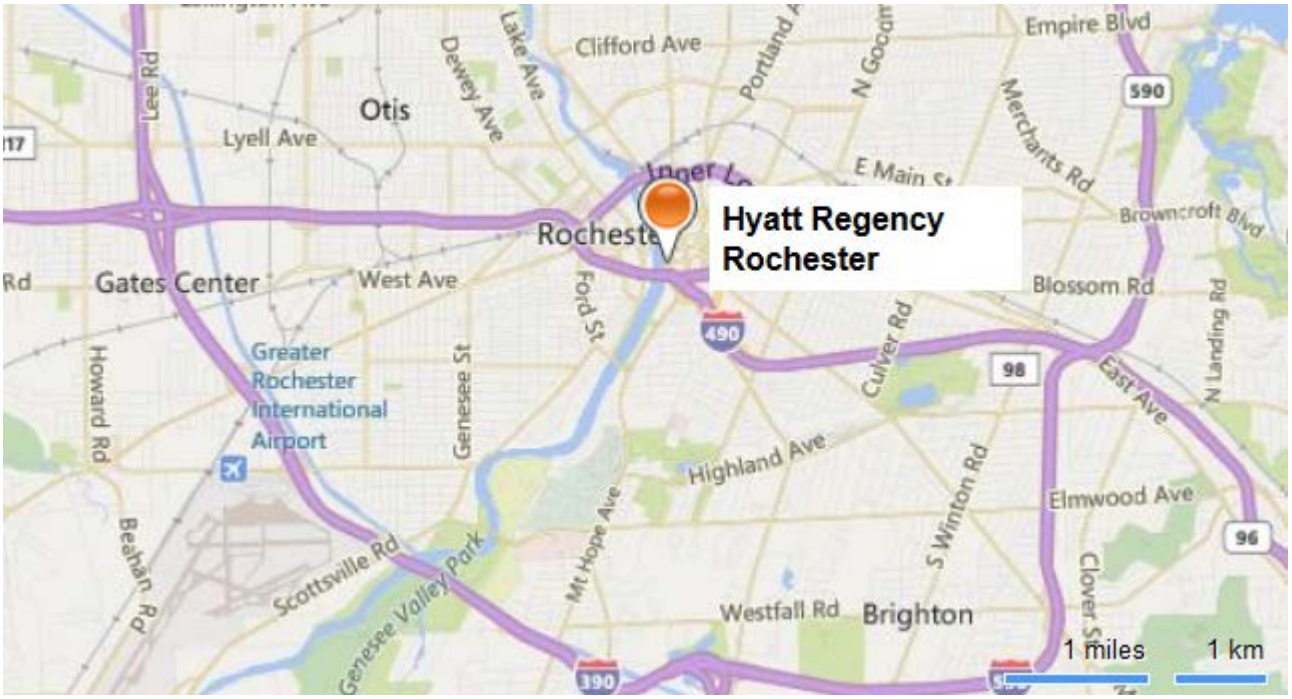
DIRECTIONS

Hyatt Regency Hotel

125 East Main Street
Rochester, NY 14604
(585) 546-1234



From 490 West Bound
Follow 490 West to Exit **#16 (Downtown-Clinton Avenue).** Stay to your left on **Clinton Avenue**. At the third traffic light, turn left onto **Broad Street.** Follow Broad Street 1 block & turn right onto **Stone St**. At the end of Stone St., make a left onto **Main St**. Approximately 100 feet on your left, you will see the motorcourt entrance to the Hyatt Regency Rochester.

From 490 East Bound
Follow 490 East to **Exit #13 (Plymouth Avenue West).** Turn right at the traffic light onto **Plymouth Avenue**. Go to the second traffic light and turn left onto **Main St.** Continue through your 4th traffic light and you will see the Motorcourt Entrance to the Hyatt Regency Rochester on your right hand side.

DIRECTIONS

Rochester Riverside Convention Center

123 East Main Street
Rochester, NY 14604
(585) 232-7200

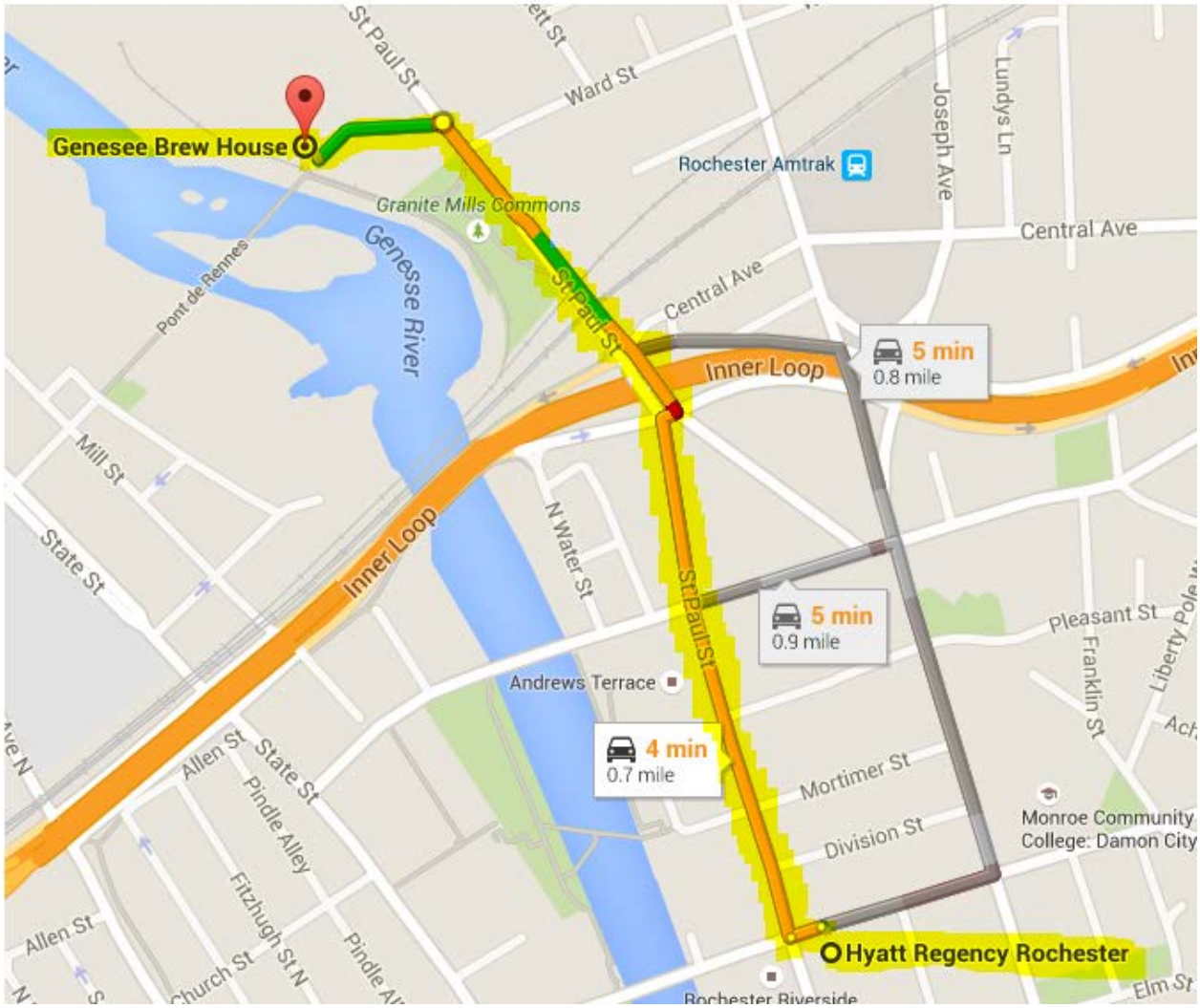
From Hyatt Regency

The Hyatt is connected to the Rochester Riverside Convention Center via the Skywalk.
The Skywalk can be accessed from the lobby level of the Hyatt hotel by walking toward the parking garage and making a right through the glass doors that says Rochester Riverside Convention Center,

DIRECTIONS

The Genesee Brew House

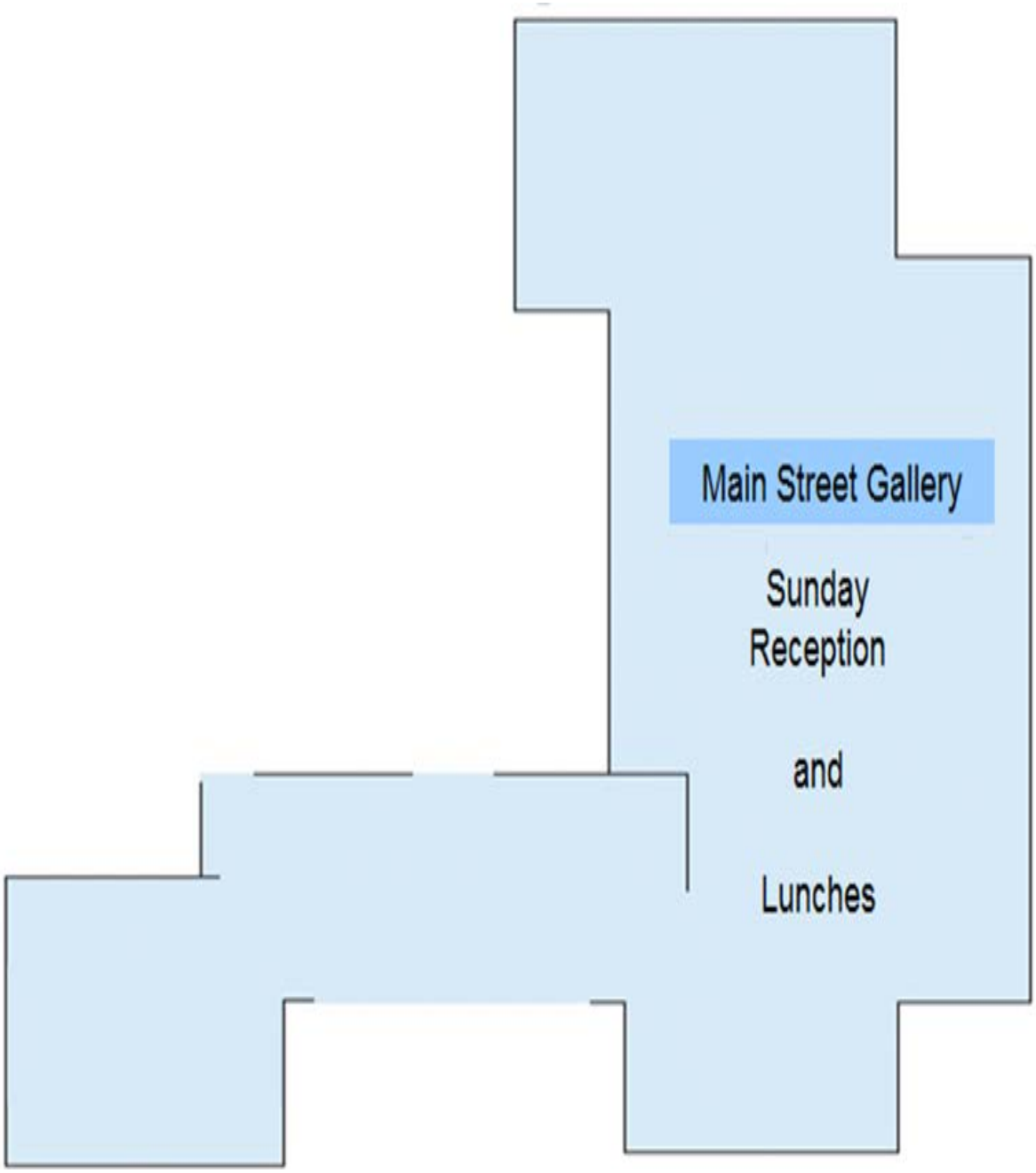
25 Cataract Street
Rochester, NY 14605
(585) 263-9200



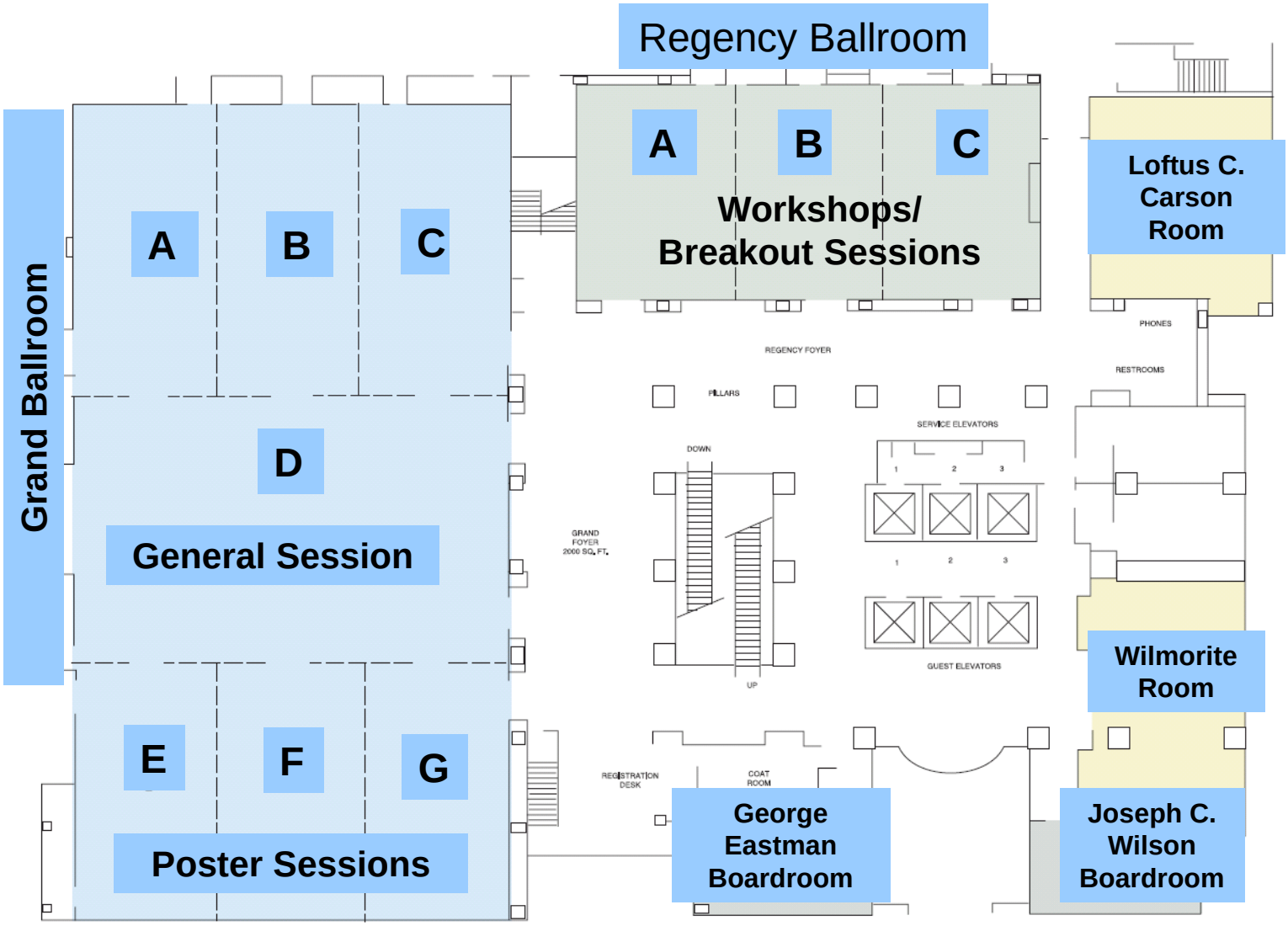
From Hyatt Regency

Head west on East Main Street toward South Ave
Turn right at the 1st cross street onto St. Paul Street
Turn left onto Cataract Street
The Genesee Brew House will be on left

Hyatt Regency – 1st Floor



Hyatt Regency – 2nd Floor



8th Annual CEIRS Network Meeting & CEIRS Surveillance Meeting

Sunday July 26th, 2015 – Wednesday July 29th, 2015
Hyatt Regency Rochester
125 E Main Street
Rochester, NY 14604

Sunday July 26th, 2015

11:00am – 6:00 pm Arrival and Check-in – Grand Foyer
Poster Set-up – Grand EFG

Breakout Meetings

12:00 – 5:00 pm Concurrent breakout meetings for CEIRS members. Break out meetings include CEIRS Cross-Collaborative working groups and informational sessions. Interested CEIRS members should attend any groups they are interested in.

Regency A	Regency B	Regency C
12:00-1:00 pm: **Team Ferret**	12:00-2:00 pm: **Clinical**	12:00-1:00 pm: **Data Management**
1:00-3:00 pm: **Virus Characterization/ Risk Assessment**	2:00-3:00 pm: **Human Surveillance**	3:00-4:00 pm: **Experimental Data**
4:00 – 5:00 pm: **Data Analysis Tools**	3:00-4:00 pm: **Swine Surveillance**	4:00-5:00 pm: **NIAID OA – Contract Questions/Issues**
	4:00-5:00 pm: **Wild Bird Surveillance**	

7:00 – 9:00 pm **WELCOME RECEPTION** (optional paid meal) - Main Street Gallery

Monday July 27th, 2015

7:00 – 8:00 am Arrival and Check-in - Grand Foyer

BREAKFAST (optional paid meal) - Regency Ballroom
Poster Set-up – Grand EFG

Meeting Opening

8:00 – 8:05 Welcome – John Treanor and Dave Topham – Grand ABCD

8:05 – 8:20 Update on CEIRS – Diane Post and Marciela DeGrace

8:20 – 9:20 **KEYNOTE LECTURE & DISCUSSION**
Current outbreak situations & public health – Mike Osterholm (20 min)

Current situation in field – Robert Webster (20 min)
Discussion (20 min)

No US government appropriated funds were used to pay for food or beverages for this meeting.

Session #1: Molecular Virology

Session Chairs: Bryan Kaplan (SJCEIRS) and Luis Martinez (NYICE)

9:20 - 9:35 am Sialic Acid Host Modifications and Influenza Hemagglutinin Binding – Colin Parrish (CRIP)

9:35 - 9:55 am Modulation of the protease cleavage site of HA and the emergence of influenza viruses with distinct activation properties – Gary Whittaker (NYICE)

9:55-10:20 am **BREAK**
Morning Snack (optional paid meal) – Regency Ballroom

10:20–10:35 am Broadly neutralizing influenza virus antibodies: Enhancement in polyclonal mixtures and IgA backbones- Matthew Miller (CRIP)

10:35-11:00 am The use of shotgun glycomics to identify endogenous receptors for influenza viruses in natural tissues– Dave Steinhauer (Emory-UGA)

11:00-11:20 am Development of high-yield influenza A virus vaccine viruses – Yoshihiro Kawaoka (CRIP)

Session #2: Transmission

Session Chairs: Ron Fouchier (CRIP) and Constantinos Kyriakis (Emory-UGA)

11:20-11:55 am Perspectives on Gain-of-Function and moving forward with transmission experiments – John Steel (Emory-UGA)
***Topic introduction and discussion**

11:55-12:20pm Influenza A virus reassortment is prevalent following coinfection by transmission - Anice Lowen (Emory-UGA)

12:20-1:30pm **LUNCH** (optional paid meal) **–** Main Street Gallery
*NEC Lunch meeting - Wilmorite

1:30-1:45 pm The poor transmission of Chinese H7N9 virus in chickens is directly related to the hemagglutinin gene – David Suarez (CRIP)

1:45-2:00pm HA acid stability as a factor in the pandemic and pathogenic potential of human H1N1 IAV – Marion Russier (SJCEIRS)

2:00-2:25pm Transmission of H7N9 influenza viruses with polymorphism at PB2 residue 627 in chickens and ferrets– Hui-Ling Yen (SJCEIRS)

No US government appropriated funds were used to pay for food or beverages for this meeting.

Panel Discussion #1 – CEIRS Working Group Updates

2:25-3:15pm CEIRS Working Group Updates
Moderator: Marciela DeGrace
Panelists:
Stacey Schulz Cherry, Team Ferret
Scott Krauss, Virus-Host Characterization
Richard Rothman – Human Surveillance
Dave Stallknecht – Wild Bird Surveillance
Martha Nelson – Swine Surveillance
Justin Bahl/Eric Bortz – Analysis tools

3:15-3:35 **BREAK**
Afternoon Snack (optional paid meal) – Regency Ballroom

Session #3 – Pandemic Preparedness and Risk Assessment

Session Chairs: Randy Albrecht (CRIP) and Walt Orenstein (Emory-UGA)

3:35-3:55pm Update on CEIRS Network Pandemic Research Response Planning – Michael Osterholm (SJCEIRS)

3:55-4:15pm Pandemic Public Health/Virus Strain Risk Assessment – Andrew Feldman (JHCEIRS)

4:15-4:45pm **Invited Speaker:** Avian Influenza in North America – Mia Torchetti, USDA

4:45-5:05pm Influenza surveillance or characterization of virus – Hualan Chen (Emory-UGA)

5:05-5:25pm Recent Developments in Large-Scale Modeling for Pandemic Surveillance and Containment – Joshua Epstein (JHCEIRS)

5:30-6:30pm **SPEED NETWORKING** – Regency Ballroom
Opportunity for junior investigators to interact 1:1 with senior investigators

POSTER VIEWING – Grand EFG

6:30 pm **Dinner** (optional paid meal) – Rochester Riverside Convention Center

Tuesday July 28th, 2015

7:15-8:00am **BREAKFAST** (optional paid meal) – Regency Ballroom

8:00-8:05am **Housekeeping** – Grand ABCD

8:05-8:30am **Clinical Update** – Perry Gonella and Robin Mason

No US government appropriated funds were used to pay for food or beverages for this meeting.

Session #4 – Advanced Technology

Session Chairs: Peter Thielen (JHCEIRS) and Dave Topham (NYICE)

8:30–8:55am Perspectives on the state of technology in influenza research – Derek Smith (CRIP)

8:55-9:20am Surveillance to Lab to Bioinformatics – Richard Rothman (JHCEIRS)

9:20-9:35am Systems analysis of immune responses to influenza vaccination and infection in humans - Mohan Maddur Sathyanarayana (Emory-UGA)

9:35-9:50am Identification of immune cell types that associate with severe influenza disease or recovery in mice using digital cell quantification – Juliet Morrison (NYICE)

9:50-10:05am Influenza genome sequencing and analysis of intra-host variants – Harm van Bakel (CRIP)

10:05-10:30am **BREAK**
Morning Snack (optional paid meal) – Regency Ballroom

Panel Discussion #2 – Resources to Facilitate Network Interactions

10:30-11:00am Resources to Facilitate Network Interactions
Moderator: Diane Post
Panelists:
Alison Kraigsley (NIAID)
Shane Ryan (NIAID)
Robin Mason (NIAID)
Gillian Air (DPCC)

11:00-11:25am DPCC Update – Stephan Bour and Marciela DeGrace

Session #5 – Pathogenesis

Session Chairs: Marion Russier (SJCEIRS) and Mark Tompkins (Emory-UGA)

11:25-11:50am Influenza A virus assembly and the role of the M2 protein -Andy Pekosz (JHCEIRS)

11:50-12:05pm The beta6 integrin modulates the type I interferon response to respiratory pathogens – Victoria Meliopoulos (SJCEIRS)

12:05-1:00pm **LUNCH** (optional paid meal) – Main Street Gallery
*Coordinators Lunch Meeting – Wilson Boardroom

1:00-1:20pm Avian influenza A/H10N7 virus outbreak in seals: an extensive in vitro and in vivo genotype and phenotype evaluation – Sander Herfst (CRIP)

1:20-1:40pm Systems Biology of Infection and Immunity-Influenza Virus Infections in the 21st Century: Successes, Challenges, Networks to Nowhere – Michael Katze (NYICE)

No US government appropriated funds were used to pay for food or beverages for this meeting.

Session #6 – Immunology

Session Chairs: Sabra Klein (JHCEIRS) and John Treanor (NYICE)

1:40–2:00pm	Weak immune responses to influenza vaccine and antigenic variation among circulating viruses both contribute to failed protection from acute infection - Dave Topham (NYICE)
2:00-2:20pm	Genetic regulation of susceptibility to severe influenza disease – Paul Thomas (SJCEIRS)
2:20-2:30pm	Fc-dependent effector functions of neutrophils induced by hemagglutinin stalk-specific antibodies - Caitlin Mullarkey (CRIP)
2:30-2:50pm	Human B cell mediated immunity to H7N9 influenza virus – Patrick Wilson (NYICE)
2:50-3:10pm	Mapping the humoral cross-reactome against the influenza virus surface glycoproteins hemagglutinin and neuraminidase – Florian Krammer (CRIP)
3:10-3:30pm	**BREAK** Afternoon Snack (optional paid meal) – Regency Ballroom
3:30-3:45pm	Sex differences in response to influenza virus infection and vaccination - Sabra Klein (JHCEIRS)
3:45-4:05pm	Defining antigen specific plasmablast and memory B cell lineages in blood following viral infection and vaccination of humans – Ali Ellebedy (Emory-UGA)
4:05-4:25pm	Potent influenza vaccine responses after recovery from B cell depletive therapy – Jens Wrammert (Emory-UGA)
4:25-4:40pm	ZFAND6 functions as a negative regulator of the innate immune response to virus infection - Edward Harhaj (JHCEIRS)
4:40-4:55pm	Links between specificity and function in the CD4 T cell response to influenza virus – Andrea Sant (NYICE)
4:55-5:10pm	High antibody-dependent cellular cytotoxicity antibody titers to H5N1 and H7N9 avian influenza A viruses in healthy US adults and older children – Masanori Terajima (NYICE)
5:10-6:10pm	**POSTER SESSION** – Grand EFG
6:30pm	**DEPART FOR DINNER** (optional paid meal) – The Genesee Brewhouse

No US government appropriated funds were used to pay for food or beverages for this meeting.

Wednesday July 29th, 2015

7:15-8:00am **BREAKFAST** (optional paid meal) – Regency Ballroom

8:00-8:05am Housekeeping – Grand ABCD

Session #7: Surveillance

Session Chairs: Daniel Perez (CRIP) and Richard Webby (SJCEIRS)

8:05-8:20am Influenza virus surveillance and sequence data for risk analysis of AIV emergence – Eric Bortz (CRIP)

8:20-8:35am Risk Assessment of clade 2.3.4.4 viruses in the United States – Bryan Kaplan (SJCEIRS)

8:35-8:50am HPAI A/H5N8 outbreaks in Europe – Ron Fouchier for Josanne Verhagen (CRIP)

8:50-9:05am Experimental Poultry and wild bird studies with H5NX HPAI from North America – Mary Pantin-Jackwood (CRIP)

9:05-9:35am Discussion of H5 Influenza and Research Priorities
*Moderator: Richard Webby

9:35-10:00am **BREAK**
Morning Snack (optional paid meal) – Regency Ballroom

10:00-10:20am Human-animal interface and indigenous population in the north of Colombia – Juan Carlos Dib (SJCEIRS)

10:20-10:40am Exploring the human side of the swine-human interface – Andy Bowman (SJCEIRS)

10:40-10:55am Current site of IAV in U.S. swine – Amy Vincent (CRIP)

10:55-11:10am Avian and Swine Surveillance studies in Guatemala and Argentina – Daniel Perez (CRIP)

11:10-11:25am Swine and Avian Surveillance in Chile – Rafael Medina (CRIP)

11:25-11:40am Surveillance of influenza virus in four coordinated swine production systems, USA – Bryan Kaplan (SJCEIRS)

11:40-12:00pm **Annual Meeting Closing Remarks – Diane Post**

No US government appropriated funds were used to pay for food or beverages for this meeting.

CEIRS Surveillance Meeting

Session Chairs: Andrea Dugas (JHCEIRS) and Erik Karlsson (SJCEIRS)

12:00-1:00pm	**LUNCH** (optional paid meal) – Main Street Gallery
	Surveillance Meeting - Grand ABCD
1:00-1:20pm	Surveillance and Influenza Virus evolution in swine – Constantinos Kyriakis (Emory-UGA)
1:20-1:35pm	The potential of Bangladesh H9N2 influenza viruses carrying H7N3 genes to replicate in mammals – Karthik Shanmuganatham (SJCEIRS)
1:35-1:50pm	MERS and other Coronaviruses in the Middle East – Ghazi Kayali (SJCEIRS)
1:50-2:10pm	Development of the H7N9 influenza virus in China and risk assessment of the multiple genotypes – Yi Guan (SJCEIRS)
2:10-2:25pm	Influenza surveillance in wild boars and free-range Iberian pigs in Spain – Gustavo Real-Soldevilla (CRIP)
2:25-2:40pm	Active influenza A virus surveillance of wild birds utilizing the Mississippi Flyway; 2014-2015 – Jacqueline Nolting (SJCEIRS)
2:40-2:55pm	Recent Findings from Wild Bird Surveillance in North America – Scott Krauss (SJCEIRS)
2:55-3:10pm	Reassortment primes influenza for host group switches – Eric Ma (CRIP)
3:10-3:25pm	Influenza A Virus Subtype Diversity in Spring Migrating Birds – Dave Stallknecht (SJCEIRS)
3:25-3:40pm	Full genome sequence analysis of swine influenza lineages circulating in Mexico from 2010 to 2014 – Nacho Mena (CRIP)
3:40-4:00pm	**Surveillance meeting closing remarks and plans for the surveillance meeting in the fall – Scott Krauss & Jon Runstadler**

No US government appropriated funds were used to pay for food or beverages for this meeting.

8th Annual CEIRS Network Meeting & Surveillance Meeting - Working Groups
Sunday July 26th, 2015

12:00 PM	1:00 PM	2:00 PM	3:00 PM	4:00 PM	5:00 PM
Team Ferret *Stacey Schulz-Cherry*	**Risk Assessment** *Scott Krauss/ Marciela DeGrace*	**Risk Assessment** *Scott Krauss/ Marciela DeGrace*		**Analysis** *Justin Bahl*	
Clinical *Robin Mason*	**Clinical** *Robin Mason*	**Human Surveillance** *Rich Rothman*	**Swine Surveillance** *Martha Nelson*	**Wild Bird Surveillance** *Dave Stallknecht/ Scott Krauss*	
Data Managers *DPCC/Marciela DeGrace*			**Experimental Data** *Eric Bortz*	**OA - Drop-in for Contract Questions/Issues** *OA, Diane Post*	**OA - Drop-in for Contract Questions/ Issues** (30 min) OA, *Diane Post*

Team Ferret - this working group determines ferret reagents that are critical to advancing influenza work and performs ferret reagent development and testing

Virus Characterization/Risk Assessment - this working group identifies interesting viruses from surveillance and performs key experiments on viral transmission, pathogenesis, and population immunity to determine their risk to human health

Data Analysis tools - This working group discuss the need for and development of software tools to enable further analysis of CEIRS data

Clinical - this group will be an interactive discussion of CEIRS clinical processes, including regulatory document handling, protocol development, staff training and quality management plan development

Human Surveillance- this group discusses current research and practices in human influenza surveillance, Network-needs for the future, and research opportunity areas for cross-Network collaborations

Swine Surveillance - this group discusses current research and practices in swine influenza surveillance, Network-needs for the future, and research opportunity areas for cross-Network collaborations

Wild Bird Surveillance - this group discusses current research and practices in wild bird influenza surveillance, Network-needs for the future, and research opportunity areas for cross-Network collaborations

Data Management - this group will discuss current data management processes, address questions on the new DPCC system, and priorities for data management going forward

Experimental Data - this group will discuss how to capture key experimental data, especially on risk assessment experiments (transmission, pathogenesis, infectivity, etc.) in a way that can be more easily shared across the Network and influenza community as a whole.

OA - Contract Questions/Issues – this is an open session for researchers, coordinators, and administrators to ask questions regarding Contract rules and regulations to the NIAID Office of Acquisitions team

8th Annual CEIRS Network Meeting & Surveillance Meeting

POSTER SESSION

July 26 – 29, 2015
Rochester, New York

Tuesday, July 28th

IMMUNOLOGY

Poster#	Name	Center	Title
1	Melissa Uccellini	CRIP	Visualizing the Type I Interferon Response to Influenza Virus Infection *In Vivo*
2	Maite Sanchez-Aparicio	CRIP	Viral Proteins Target Complexes In the RIG-I Like Viral Receptor
3	Judith Fonville	CRIP	Antigenic maps of influenza A/H3N2 virus produced with human antisera obtained after primary infection
4	Wing Kwan	CRIP	Development of pulmonary Th17 cell during influenza infection-impact of C5/C5aR
5	Wing Kwan	CRIP	IFITM3 and Immune Memory cross-talk modulates pulmonary pathology during Influenza A infection
6	Irene Ramos	CRIP	The hemagglutinin of H5N1 influenza A viruses interacts with the receptor CD43 in human primary dendritic cells
7	Elizabeth Littauer	Emory-UGA	Pregnancy modulates cellular immune response to H1N1 infection
8	Melissa Bowman	JHCEIRS	ZFAND6 functions as a negative regulator of the innate immune response to virus infection
9	Bright Arthur	NYICE	Can the H1N1 HA2 drift under immune pressure?
10	Zackery Knowlden	NYICE	Follicular or Non-follicular helper T cell effector function is determined by CD4 T cell specificity
11	Katie Winarski	JHCEIRS	Structural analysis of a vaccine-elicited antibody that neutralizes respiratory droplet transmissible H5N1 influenza

IMMUNOLOGY / VACCINE

Poster#	Name	Center	Title
12	Ralph Tripp	Emory-UGA	Engineering Enhanced Vaccine Cell Lines
13	Jefferson Santos	CRIP	Development of an alternative live attenuated influenza B virus vaccine
14	Raffael Nachbagauer	CRIP	Age dependence and isotype specificity of hemagglutinin stalk-reactive antibodies in humans
15	Wenqian He	CRIP	Enhancement of monoclonal broadly-neutralizing antibody-mediated protection by a non-competitive HA2-binding antibody
16	Paul Leon	CRIP	Characterization of a broadly neutralizing human monoclonal antibody that targets the influenza B virus hemagglutinin
17	Michael Schotsaert	CRIP	Suboptimal influenza vaccination results in higher numbers of pulmonary macrophages upon influenza challenge in mice
18	Gene Tan	CRIP	Broadly neutralizing and non-neutralizing antibodies directed against the H7 influenza virus hemagglutinin protect from H7N9 challenge in mice
19	Teddy John Wohlbold	CRIP	Hemagglutinin stalk- and neuraminidase-specific monoclonal antibodies protect against lethal H10N8 influenza virus infection in mice
20	Teddy John Wohlbold	CRIP	Anti-neuraminidase antibodies demonstrate broad cross-protection against influenza B viruses
21	Jay Bream	JHCEIRS	Heterotypic T cell responses to inactivated and live attenuated seasonal influenza vaccines
22	Ashley Fink	JHCEIRS	Adverse reactions and antibody responses to influenza A virus immunization differ between the sexes in a murine model
23	Marta Lopez de Diego	NYICE	Weak immune responses to influenza vaccine and antigenic variation among circulating viruses both contribute to failed protection from acute infection

24	Jennifer Nayak	NYICE	Antibody responses to novel HA proteins can be potentiated by pre-existing HA-specific memory CD4 T cells
25	Mark Sangster	NYICE	High affinity H7 head and stalk domain-specific antibody responses to an inactivated influenza H7N7 vaccine after priming with live attenuated influenza vaccine
26	Adriana Forero	NYICE	Evaluation of cellular immune response to influenza infection in primary differentiated human nasal epithelial cell cultures
27	Carole Henry Dunand	NYICE	Characterization of the human antibody response to an H7N9 vaccine at the monoclonal antibody level
28	Anthony DiPiazza	NYICE	Limitations in CD4 T cell responses to novel HA proteins
29	Christopher Anderson	NYICE	Understanding the Mystery of Recall Responses
30	Frances Batarse	NYICE	Evaluating the Interactions of Viral Proteins in Inactivated Vaccine
31	Kanta Subbarao	Other	H5 and H7 pandemic live attenuated influenza vaccines prime for a robust antibody response and induce long-term immunity

MOLECULAR VIROLOGY

Poster#	Name	Center	Title
32	Adebimpe Obadan	CRIP	Plasticity of amino acid 226 in the receptor binding site of the HA of H9 influenza viruses
33	Shufang Fan	CRIP	Novel residues in avian influenza virus PB2 protein affect virulence in mammalian hosts
34	Shashank Tripathi	CRIP	Orthogonal integration Of Influenza 'OMICs' Datasets Reveals UBR4 as a Crucial Host Factor Required for Late Events of Influenza A Virus Replication
35	Eugenio Abente	CRIP	Substitutions Near the Receptor Binding Site Can Cause Major Antigenic Changes in Swine Influenza
36	Brian Wasik	CRIP	Sialic Acid Diversity in Influenza Hosts

37	Danae Fonseca	CRIP	Role of Ubiquitin E3 Ligase TRIM71 in innate immune signaling
38	Katherine Fenstermacher	JHCEIRS	Altered replication and induction of innate immune responses in differentiated primary human nasal epithelial cells infected with Influenza A or Live Attenuated Influenza Vaccine (LAIV) viruses
39	Hee-Sool Rho	JHCEIRS	Influenza on a Chip: Harnessing Viral Antigens for a Predictive Purpose
40	Andrea Dugas	JHCEIRS	Evaluation of the Xpert Flu Rapid PCR assay in High-Risk Emergency Department Patients
41	Andrew Cox	NYICE	Synergistic temperature sensitivity is conveyed by mutations in PB1 and the PB2 N265S mutation of LAIV
42	Aitor Nogales	NYICE	Replication-competent influenza viruses expressing a dynamic fluorescent "Timer" protein
43	Mark Zanin	SJCEIRS	An amino acid residue in the stalk domain of influenza virus neuraminidase N1 is critical for sialidase activity
44	Eefje Schrauwen	CRIP	Reassortment of influenza A/H7N9 virus with seasonal human viruses and mutational analysis of the H7 hemagglutinin
45	Hsuan Liu	JHCEIRS	Mutations in the Influenza A virus M1 protein restore filamentous virion production of lethal mutations in the M2 protein cytoplasmic tail

Data & Resource Management

Poster#	Name	Center	Title
46	Anthony Corbett	NYICE	Data Integration, Visualization and Reproducible Analysis with the Bio-Lab Informatics Server

Experimental Data

Poster#	Name	Center	Title
47	Mariam Gonzalez-Hernandez	JHCEIRS	Oseltamivir-resistant A(H1N1)pdm09 virus evolution and surveillance using novel combination high-throughput microfluidic droplet system and whole-genome sequencing
48	Hongmei Yang	NYICE	An Improved Method for Estimating Antibody Titers in Microneutralization Assay Using Green Fluorescent Protein
49	Hanyuan Zhang	NYICE	Label-Free Human Monoclonal Antibody Arrays for Influenza Virus Profiling

Pandemic Preparedness and Risk Assessment

Poster#	Name	Center	Title
50	Eric Bortz	CRIP	Influenza virus surveillance and sequence data for risk analysis of AIV emergence
51	Jon Parker	JHCEIRS	Estimating the unobserved and optimizing surveillance locations using the Inter-Region Epidemic Dynamics Model

Pathogenesis

Poster#	Name	Center	Title
52	Teresa A. Aydillo	CRIP	Loss of Fitness in Mammalian Cells Imposed by NS1 Protein from Bat Influenza Viruses
53	Mathilde Richard	CRIP	Pathogenicity of airborne-transmissible H5N1 viruses in chickens
54	Daniela Rajao	CRIP	Novel reassortant human-like H3N2 and H3N1 influenza A viruses detected in pigs are virulent and antigenically distinct from endemic viruses
55	Mathilde Richard	CRIP	Low Pathogenicity and Lack of Airborne Transmission of the Dutch Highly Pathogenic Avian Influenza Virus H5N8 in Ferrets
56	Olivia Hall	JHCEIRS	Progesterone promotes pulmonary repair during H1N1 infection in female mice

57	Jennifer Tisoncik-Go	NYICE	Ferreting out respiratory host responses to pandemic H1N1 influenza virus during the resolution phase of infection
58	Ben Cowling	SJCEIRS	Clinical severity of human infections with influenza A(H7N9) across three epidemics
59	Tatiana Baranovich	SJCEIRS	Monoclonal antibody targeting stem region of influenza A virus hemagglutinin protects mice from lethal A(H7N9) infection
60	Christopher Bandoro	CRIP	Examining the impact of bacterial lipopolysaccharide on the infectivity and ecology of influenza A virus

Surveillance - Human

Poster#	Name	Center	Title
61	Justin Hardick	JHCEIRS	Characterization of Influenza A and B Virus Infections from a Cohort of Influenza Positive Samples Collected Through the Department of Defense
62	Deena Blumenkrantz	JHCEIRS	Variation in genomic fingerprints of 2013-2014 clinical H3N2 influenza virus isolates and their alteration upon cell culture
63	Kuan-Fu Chen	JHCEIRS	Forecasting patient visits with influenza in the emergency department with a multivariate seasonal ARIMA model incorporating with climate, holiday, and historical information
64	Gavin Smith	SJCEIRS	Influenza surveillance in Quezon, Philippines, 2011-2013
65	Gavin Smith	SJCEIRS	Evolution of influenza B virus in Kuala Lumpur, Malaysia between 1995 and 2008
66	Vijaykrishna Dhanasekaran	SJCEIRS	Lineage specific variation in household transmission of influenza B viruses

Surveillance - Swine

Poster#	Name	Center	Title
67	Ana Gonzalez Reiche	CRIP	Molecular characterization of human influenza viruses detected in pigs in Guatemala
68	Daniel Perez	CRIP	Swine influenza surveillance in Argentina 2010-2014
69	Celia Cordon	CRIP	Influenza A virus among swine and duck populations in rural backyards within subtropical wetlands in Guatemala, 2013
70	Celia Cordon	CRIP	Influenza A prevalence in two swine populations in Guatemala, 2012
71	Rasna Walia	CRIP	Spatial and temporal patterns in the diversity of swine influenza A viruses collected by the USDA Surveillance System

Surveillance – Wild Bird

Poster#	Name	Center	Title
72	Ana Gonzalez Reiche	CRIP	Prevalence and diversity of low pathogenicity avian influenza viruses in blue-winged teals at the wintering grounds in Guatemala, Central America
73	Wendy Puryear	CRIP	Diverse subtypes of Influenza A Virus (IAV) are detected in live- caught North Atlantic grey seals (*Halichoerus grypus*)
74	Islam Hussein	CRIP	A single PB2 polymorphism of a wild H9N2 isolate is sufficient for productive infection of human cells
75	Donald Lee	NYICE	Tracking the hemagglutinin protease cleavage site of the H9N2 avian virus using new visualization tools
76	Neus Latorre-Margalef	SJCEIRS	Subtype interactions and reinfection dynamics in the avian influenza-mallard system
77	David Stallknecht	SJCEIRS	Antibodies to Influenza A Viruses in Gulls at Delaware Bay, USA
78	Scott Krauss	SJCEIRS	Long term surveillance of H7 influenza viruses in American wild aquatic birds: Concordance with emergence of variants with pathogenic potential?

Transmission & Adaptation

Poster#	Name	Center	Title
79	Jefferson Santos	CRIP	Unusual cleavage site of an influenza virus hemagglutinin
80	Judith Fonville	CRIP	Deleterious intermediate mutations do not substantially inhibit host-adaptation
81	Daniel Perez	CRIP	Influenza A Virus Subtype H4N2 Isolated from Wild Duck (*ANAS Versicolor)* Adapted to Poultry (*GALLUS GALLUS DOMESTICUS*) Through *in vitro* and *in vivo* passages
82	Islam Hussein	CRIP	New England harbor seal H3N8 influenza virus retains avian-like receptor specificity
83	Thibaut Vausselin	CRIP	Role of host adaptive polymerase mutations in conferring species-specific interactions with essential host factors
84	Irene Ramos	CRIP	Hemagglutinin Receptor Binding of a Human Isolate of H10N8 Influenza A Virus
85	John Steel	Emory-UGA CEIRS	PR8-based influenza viruses possessing an avian M1 protein exhibit increased replication in MDCK cells upon introduction of putative swine adaptive mutations
86	John Steel	Emory-UGA CEIRS	Replacement of Eurasian avian-like swine lineage M segment with that of the 2009 pH1N1 virus confers increased transmissibility to a PR8-based influenza virus in the guinea pig model
87	Nancy Hiu Lan Leung	SJCEIRS	Detection of Influenza Virus RNA In Aerosols In Patient Rooms
88	Benjamin Cowling	SJCEIRS	Epidemiologic analysis of influenza virus transmission dynamics in households
89	Udayan Joseph	SJCEIRS	Evolutionary Landscape of Eurasian Avian-like Swine Lineage H1N1 Influenza A viruses: Origins, Adaptations and its Contribution to the 2009 pandemic emergence

90	Gavin Smith	SJCEIRS	The phylodynamics of H1N1/2009 influenza: From pandemic to seasonal influenza
91	Atanaska Marinova-Petkova	SJCEIRS	Pathogenicity and transmissibility of two different genotypes of highly pathogenic H5N1 influenza viruses from the Indian subcontinent
92	Nicolle Marshall	Emory-UGA CEIRS	Mechanisms of influenza virus super-infection interference

8th Annual CEIRS Network Meeting & Surveillance Meeting

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