



NIAID Centers of Excellence for Influenza Research & Surveillance (CEIRS)

National Institute of Allergy and Infectious Diseases
3rd Annual CEIRS Network Meeting

June 23-25, 2009

UNIVERSITY OF MINNESOTA

Radisson University Hotel–Minneapolis

615 Washington Avenue SE, Minneapolis, Minnesota

Web link: <http://www3.niaid.nih.gov/research/resources/ceirs/>



TABLE OF CONTENTS

- General Information
 - Welcome..... 3
 - Directions.....4
 - Radisson floor plan.....5
- Program Summary6
- Event Schedule8
- AICAP Meeting Agenda.....9
- CEIRS Meeting Agenda.....11
- Breakout Session Agendas:
 - Bird Surveillance and Epidemiologic Coordination..... 18
 - Next Generation Sequencing for Influenza Viruses.....19
 - Data Manager's Meeting.....20
- CEIRS Center Overviews.....21
- Poster Session24
- Participant List26
- Notes.....32

Welcome

Third Annual National Institute of Allergy and Infectious Disease Centers of Excellence for Influenza Research and Surveillance Network Meeting

June 23-25th, 2009
Minneapolis, Minnesota

June 22, 2009

Dear Colleague,

On behalf of the influenza program at the National Institutes of Health/National Institute of Allergy and Infectious Disease (NIH/NIAID/DMID) and the Minnesota Center of Excellence for Influenza Research and Surveillance (MCEIRS), welcome to the Third Annual NIH/NIAID Centers of Excellence for Influenza Research and Surveillance (CEIRS) Network Meeting at the University of Minnesota. This meeting brings together representatives of the CEIRS network, including 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 in humans. The meeting will address urgent global issues pertaining to the current pandemic of novel influenza H1N1 and the current status of H5N1 infection in animals and humans. It also 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, the University of Minnesota, the University of California at Los Angeles, and the University of Rochester.

In the short span of the past year since the second annual CEIRS network meeting hosted at St. Jude Children's Research Hospital, the unexpected that we so often talk about with regard to influenza viruses has happened; a pandemic originating in the Americas and caused by a novel H1N1 virus. This year's CEIRS network meeting comes at a challenging time as many of us are actively pursuing research efforts of H1N1 infection that was not even considered just two months ago. At the same time, we are maintaining active research portfolios involving many of the other strains of influenza virus infection in both animals and humans.

We are pleased to once again interact with the United States Department of Agriculture's AICAP network, the annual meeting of which will be held on June 21st at the University of Minnesota. We would like to thank Dr. Daniel Perez for his efforts to coordinate the two meetings.

We look forward to a wide range of presentations that will engage us in energizing and critical discussion on influenza in animal and human populations. If we've learned anything, it is that all influenza viruses are on the table. This meeting will enable professionals to exchange research data and ideas, while building ties with colleagues worldwide. Thank you for participating.

Sincerely,

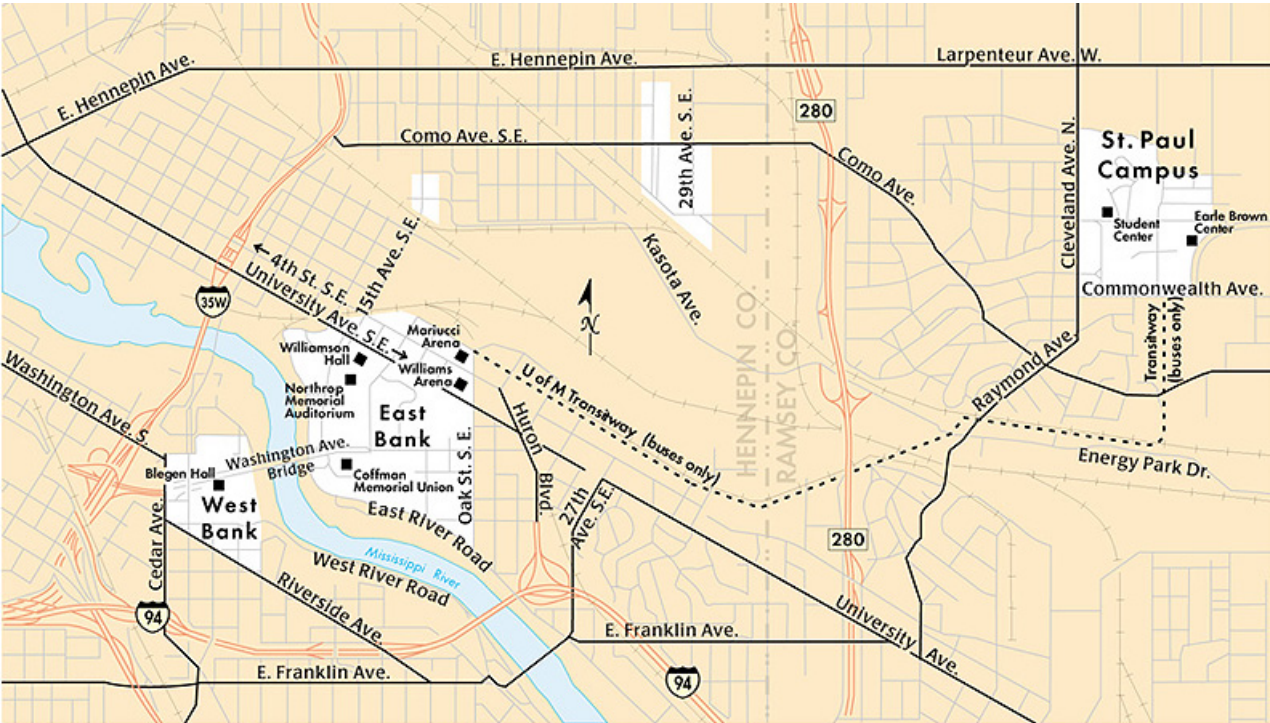
Diane Post, PhD
DMID/NIAID Project Officer

Michael Osterholm, PhD, MPH
MCEIRS PI/Director

DIRECTIONS

Radisson University Hotel–Minneapolis on the East Bank of the UMN Twin Cities Campus
615 Washington Ave SE, Minneapolis, Minnesota 55414
http://www.radisson.com/minneapolisumn_metrodome

UMN Raptor Center, 1920 Fitch Ave., St. Paul, MN 55108
St. Paul Campus
<http://www.raptor.cvm.umn.edu/>





Radisson University Hotel—Minneapolis FLOOR PLAN FOR MEETING ROOMS, 2ND FLOOR	
A,B,C,D	University Ballroom <ul style="list-style-type: none"> CEIRS presentations 6/23-6/25
	Ballroom Lobby <ul style="list-style-type: none"> CEIRS Meeting Registration
E	Faculty Room <ul style="list-style-type: none"> Poster Session, 6/23 and 6/24
G	Alumni Room <ul style="list-style-type: none"> Breakout, 6/23: Bird surveillance and epidemiologic coordination Breakout, 6/24: Immunology: coordination of 2009 H1N1 activities
H	Regents Room <ul style="list-style-type: none"> Breakout, 6/23: Human and other mammalian surveillance (including 2009 H1N1) Breakout, 6/24: Next generation sequencing for influenza viruses
I	Presidents Room <ul style="list-style-type: none"> Breakout, 6/23: BioHealthBase demonstration Breakout, 6/24: BioHealthBase demonstration
L	Nolte Room <ul style="list-style-type: none"> Breakout, 6/23: 2009 H1N1 animal/experimental coordination Breakout, 6/24: Surveillance sampling and cross center testing
P	Hubert H. Humphrey Ballroom <ul style="list-style-type: none"> AICAP Presentations, Monday, 6/22 CEIRS Lunch 6/23, 6/24, and 6/25 Keynote Dinner, Tuesday, 6/23

PROGRAM SUMMARY

5th Annual AICAP Meeting & 3rd Annual CEIRS Network Meeting University of Minnesota, Radisson University Hotel, 2nd floor meeting rooms

Monday, June 22	5th Annual AICAP meeting	8:15-8:30 pm Humphrey Ballroom
	<i>Tour of UMN Raptor Center, St Paul campus (open house)</i>	5:00-8:30 pm Board buses at Radisson Hotel front entrance
Tuesday, June 23	3rd Annual CEIRS Network Meeting	7:30 am Breakfast, Sign-in 8:30 am Welcome University Ballroom
	Session 1: 2009 H1N1 Outbreak Response	8:45–11:20 am University Ballroom
	<i>Lunch</i> H1N1, the Media and You Joanne Silberner, NPR	11:20–12:30 pm Humphrey Ballroom
	Session 2: Current 2009 H1N1 Studies	12:30–2:20 pm University Ballroom
	Breakout Sessions	2:20–3:30 pm Alumni, Regents, Presidents, and Nolte Rooms
	Q&A with NIAID Program and Contract Staff	3:30–3:50 pm Presidents Room
	Session 3: Global H5N1 Studies	3:50–5:05 pm University Ballroom
	Poster Session	5:05–6:30 pm Faculty Room
	<i>Keynote Dinner</i> Robert Webster, St Jude	6:30 pm Humphrey Ballroom
Wednesday, June 24	3rd Annual CEIRS Network Meeting	7:30 am Breakfast 8:25 am Introduction University Ballroom
	Session 4: Ecological Issues in Wild Bird Surveillance	8:35–10:30 am University Ballroom
	<i>Break</i>	10:30–10:50 am
	Session 5: Antigenic and Genetic Characterizations of Influenza Viruses	10:50–12:00 pm University Ballroom
	<i>Lunch</i> BioHealthBase Update	12:00–1:15 pm Humphrey Ballroom
	Session 5, continued	1:15–2:15 pm University Ballroom

	Breakout Sessions	2:15–3:15 pm Alumni, Regents, Presidents, and Nolte Rooms
	Q&A with NIAID Program and Contract Staff	3:15–3:35 pm Presidents Room
	Session 6: Influenza Viral Transmission in Animal Models	3:35-5:10 pm University Ballroom
	Poster Session	5:15-6:00 pm Faculty Room
	<i>Dinner cruise on Lake Minnetonka</i>	6 pm Board buses at Radisson west side door
Thursday, June 25	3rd Annual CEIRS Network Meeting	7:30 am Breakfast 8:25 am Introduction University Ballroom
	Session 7: Influenza Receptor Binding and Fusion	8:35-10:00 am University Ballroom
	Session 8: Influenza Pathogenesis and Host Responses	10:00 am - 12:25 pm University Ballroom
	<i>Lunch</i>	12:25-1:25 pm Humphrey Ballroom
	Session 9: Immune Responses to Influenza Infection & Vaccination	1:25-3:50 pm University Ballroom
	Breakout Session Highlights	3:50-4:20 pm University Ballroom
	Program Highlights and Concluding Remarks	4:20-4:40 pm University Ballroom
	<i>Adjourn</i>	4:40 pm

Additional Scheduled Meetings:

CEIRS Data Managers: Thursday, June 25 (8:35 am – 12:30 pm), Presidents Room

CEIRS Network Executive Committee: Wed. June 24, 12–1:15 pm (lunch), Coffman Room

EVENT SCHEDULE

Monday, June 22, 5-8:30 pm

Tour of the University of Minnesota Raptor Center

1920 Fitch Ave., St. Paul, MN 55108

<http://www.raptor.cvm.umn.edu/>

Buses will run continuously between the Radisson University Hotel, front entrance, and the Raptor Center for this open house between 5 and 8:30 pm. Refreshments and hors d'oeuvres will be served. Pat Redig will give a brief presentation at 6:15 pm.

Tuesday, June 23, 11:20 am to 12:30 pm, Humphrey Ballroom

Lunch

Introduction: Michael Osterholm, University of Minnesota (MCEIRS)

Guest speaker: Joanne Silberner, Health Policy Correspondent, National Public Radio
H1N1, the Media, and You

Tuesday, June 23, 5:05-6:30 pm, Faculty Room

CEIRS Poster Session (*cash bar*)

Tuesday, June 23, 6:30 pm, Humphrey Ballroom

Dinner with Keynote Speaker: Robert Webster, St Jude Children's Research Hospital (St Jude CEIRS) (*preregistration required*)

Wednesday, June 24, 12-1:15 pm, Humphrey Ballroom

Lunch with special 10-minute update on BioHealthBase

Richard Scheuermann, University of Texas Southwestern Medical Center

Wednesday, June 24, 5:15-6:00 pm, Faculty Room

CEIRS Poster Session (*cash bar*)

Wednesday, June 24, 6:00 pm

Dinner and Boat Cruise on Lake Minnetonka

Load buses at the west side entrance of the Radisson University Hotel (preregistration required).



NIAID Centers of Excellence for Influenza Research and Surveillance

3rd Annual CEIRS Network Meeting

June 23-25, 2009

University of Minnesota, Radisson University Hotel–Minneapolis
615 Washington Avenue S.E., Minneapolis, Minnesota 55414

AGENDA

Monday, June 22, 5:00 - 8:30 pm

Tour of the University of Minnesota Raptor Center

Buses will run continuously between the Radisson University Hotel, front entrance, and the Raptor Center for this open house between 5 pm and 8:30 pm. Refreshments and hors d'oeuvres will be served. Pat Redig will give a brief presentation at 6:15 pm.

DAY 1 • TUESDAY, JUNE 23, 2009

7:30-8:30 Sign-in material pick-up and breakfast

8:30-8:45 Welcome and introductions

Michael Osterholm, University of Minnesota (MCEIRS)

Diane Post, CEIRS Project Officer, RDB/DMID/NIAID/NIH

SESSION #1 – 2009 H1N1 Outbreak Response

Co-Moderators: **Nancy Cox** and **Michael Osterholm**

8:45-9:15 Epidemiology of the 2009 H1N1 outbreak
Nancy Cox, Influenza Division, NCIRD/CDC

9:15-9:45 Research questions to be answered for the 2009 H1N1 virus
Robert Webster, St. Jude Children's Research Hospital (St. Jude CEIRS)

9:45-10:15 2009 H1N1 vaccine development
Robin Robinson, OASPR/DHHS

10:15-10:30 *Break*

10:30–11:00 H1N1 clinical research response and immunological questions
John Treanor, University of Rochester (NYICE)

11:00-11:15 Summary and discussion of Session #1

11:20-12:30 *Lunch* – Humphrey Ballroom

H1N1, the Media and You

Guest Speaker: **Joanne Silberner**, Health Policy Correspondent, National Public Radio

Introduction: **Michael Osterholm**

SESSION #2 – Current 2009 H1N1 Studies

Co-Moderators: **Irene Glowinski** and **Diane Post**

12:30-12:40 Introduction to the session: current and planned CEIRS studies

Diane Post, RDB/DMID/NIAID/NIH

12:40-1:00 H1N1 animal experimental studies at CRIP

Adolfo Garcia-Sastre, Mt. Sinai School of Medicine (CRIP)

1:00-1:20 Stability of H1N1 in the environment

David Stallknecht, University of Georgia (MCEIRS)

1:20-1:40 H1N1 phylogenetic studies

Gavin Smith, University of Hong Kong (St. Jude CEIRS)

1:40-2:00 Experimental infection of swine with 2009 H1N1

Amy Vincent, USDA (St. Jude CEIRS)

2:00-2:20 Summary and discussion of Session #2

2:20-3:30 BREAKOUT SESSIONS

- Bird surveillance and epidemiologic coordination (Alumni Room) – Chair: David Stallknecht
- Human and other mammalian surveillance, including 2009 H1N1 (Regents Room) – Chair: Richard Webby
- 2009 H1N1 animal/experimental coordination (Nolte Room) – Chair: Ron Fouchier
- BioHealthBase demonstration (Presidents Room) – Chair: Richard Scheuermann

3:30-3:50 *Break – Q&A with NIAID Program and Contract Staff (Presidents Room)*

SESSION #3 – Global H5N1 Studies

Co-Moderators: **Malik Peiris** and **David Suarez**

3:50-4:05 Introduction to the session: current global H5N1 situation

Malik Peiris, University of Hong Kong (St. Jude CEIRS)

4:05-4:25 Multiple introductions, multiple problems: H5N1 in Lao PDR

David Boltz, St. Jude Children's Research Hospital (St. Jude CEIRS)

4:25-4:45 The continuing threat of H5N1 in Thailand

Alongkorn Amonsin, Chulalongkorn University (MCEIRS)

4:45-5:05 Summary and discussion of Session #3

5:05-6:30 **POSTER SESSION** – Faculty Room (*cash bar*)

6:30 *Dinner (Humphrey Ballroom) – preregistration required*

Keynote speaker: **Dr. Robert Webster**, St. Jude Children's Research Hospital

DAY 2 • WEDNESDAY, JUNE 24, 2009

7:30-8:25 Sign-in, material pick-up and breakfast

8:25-8:35 Welcome and housekeeping

SESSION #4 – Ecological Issues in Wild Bird Surveillance

Co-Moderators: **Carol Cardona** and **David Stallknecht**

- 8:35-8:50 Introduction to the session - questions to be addressed in the field
David Stallknecht, University of Georgia (MCEIRS)
- 8:50-9:10 AI findings from the Mississippi Flyway
Richard Slemmons, Ohio State University (MCEIRS)
- 9:10-9:30 Characterization of viruses isolated from wild birds in Hong Kong
Justin Bahl, University of Hong Kong (St. Jude CEIRS)
- 9:30-9:50 Ecological studies on AI in wild birds in Northern Europe
Vincent Munster, Erasmus Medical Center (CRIP)
- 9:50-10:10 Serologic testing to develop effective strategies for wild bird surveillance
Justin Brown, University of Georgia (MCEIRS)
- 10:10-10:30 Summary and discussion of Session #4
- 10:30-10:50 *Break*

SESSION #5 – Antigenic and Genetic Characterizations of Influenza Viruses

Co-Moderators: **Mark Tompkins** and **Ron Fouchier**

- 10:50-11:00 Introduction to the session - questions to be addressed in the field
Ron Fouchier, Erasmus Medical Center (CRIP)
- 11:00-11:20 Evidence of interspecies transmission of triple reassortant H3N2 swine influenza virus to waterfowl
Srinand Sreevatsan, University of Minnesota (MCEIRS)
- 11:20-11:40 Molecular characterization of human and animal recombinant influenza A viruses originating from 1956-2007
Emmie de Wit, Erasmus Medical Center (CRIP)
- 11:40-12:00 Continuing endemic and evolution of H5N1 influenza virus in southern China: persistent pandemic threat
Guan Yi, University of Hong Kong (St. Jude CEIRS)
- 12:00-1:15 *Lunch (Humphrey Ballroom)*
Special 10-minute update: newest features of BioHealthBase
Richard Scheuermann, University of Texas Southwestern Medical Center

CEIRS Network Executive Committee Working Lunch

- 1:15-1:35 Molecular basis for antigenic variation of H5 viruses
Ron Fouchier, Erasmus Medical College (CRIP)
- 1:35-1:55 Mapping the antigenic drift of H5N1 influenza viruses using panel of monoclonal antibodies – implications for selecting vaccine candidates for pandemic influenza
Honglin Chen, University of Hong Kong (St. Jude CEIRS)
- 1:55-2:15 Summary and discussion of Session #5
- 2:15-3:15 **BREAKOUT SESSIONS**
- Next generation sequencing for influenza viruses (Regents Room) – Chair: Maria Giovanni
 - Immunology: coordination of 2009 H1N1 activities (Alumni Room) – Chair: David Topham
 - Surveillance sampling and cross-center testing (Nolte Room) – Chair: Carol Cardona
 - BioHealthBase demonstration (Presidents Room) – Chair: Richard Scheuermann
- 3:15-3:35 *Break - Q&A with NIAID Program and Contract Staff (Presidents Room)*

SESSION #6 – Influenza Viral Transmission in Animal Models

Co-Moderators: **Robert Webster** and **Peter Palese**

- 3:35-3:45 Introduction to the session – questions to be addressed in the field
Peter Palese, Mt. Sinai School of Medicine (CRIP)
- 3:45-4:05 Molecular constraints in the interspecies transmission of H9N2 influenza
Daniel Perez, University of Maryland, College Park (CRIP)
- 4:05-4:25 Interspecies transmissibility of H5 A1 virus strains and surveillance in feral cats
Mark Tompkins, University of Georgia (IPIRC)
- 4:25-4:45 Blocking transmission of influenza viruses by vaccines or antivirals in the guinea pig system
Anice Lowen, Mt. Sinai School of Medicine (CRIP)
- 4:45-5:10 Summary and discussion of Session #6
- 5:15-6:00 **POSTER SESSION** – Faculty Room (*cash bar*)
- 6:00 pm *Board buses from the Radisson west door for the dinner cruise on Lake Minnetonka (preregistration required)*
- 6:15 pm *Buses depart for dinner cruise on Lake Minnetonka*

DAY 3 • THURSDAY, JUNE 25, 2009

- 7:30-8:25 *Breakfast*
8:25-8:35 Welcome and housekeeping
8:35-12:30 Concurrent data manager breakout session

SESSION #7 – Influenza Receptor Binding and Fusion

Co-Moderators: **Richard Compans** and **Charles Russell**

- 8:35-8:45 Introduction to the session - questions to be addressed in the field
Richard Compans, Emory University (IPIRC)
- 8:45-9:05 HA activation by host cell proteases
Gary Whittaker, Cornell University (NYICE)
- 9:05-9:25 Changes in H5N1 influenza virus hemagglutinin receptor binding domain affect systemic spread in mice
Hui-Ling Yen, University of Hong Kong (St. Jude CEIRS)
- 9:25-9:45 Receptor binding and membrane fusion of HA
David Steinhauer, Emory University (IPIRC)
- 9:45-10:00 Summary and discussion of Session #7

SESSION #8 – Influenza Pathogenesis and Host Responses

Co-Moderators: **Richard Webby** and **Adolfo Garcia-Sastre**

- 10:00-10:10 Introduction to the session - questions to be addressed in the field
Adolfo Garcia-Sastre, Mt. Sinai School of Medicine (CRIP)
- 10:10-10:30 Coexistence of oseltamivir-sensitive and resistant H5N1 influenza viruses in a ferret model
Elena Govorkova, St. Jude Children's Research Hospital (St. Jude CEIRS)
- 10:30-10:50 *Break*
- 10:50-11:10 Role of polymerase in host adaptation of influenza A viruses
Toru Takimoto, University of Rochester (NYICE)
- 11:10-11:30 Influenza A virus NS1 targets the ubiquitin ligase TRIM25 to evade recognition by RIG-I
Randy Albrecht, Mt. Sinai School of Medicine (CRIP)
- 11:30-11:50 Comparing host responses to H5N1 and seasonal influenza viruses in vitro
Malik Peiris, University of Hong Kong

- 11:50-12:10 H5 AI virus infection of human broncho-epithelial cells and host genes required for influenza virus replication
Christine Oshansky, University of Georgia (IPIRC)
- 12:10-12:25 Summary and discussion of Session #8
- 12:25-1:25 *Lunch (Humphrey Ballroom)*
Program Coordinators' Lunch (Room TBA)

SESSION #9 – Immune Responses to Influenza Infection and Vaccination

Co-Moderators: **David Topham** and **Paul Thomas**

- 1:25-1:35 Introduction to the session - questions to be addressed in the field
David Topham, University of Rochester (NYICE)
- 1:35-1:55 B-cell responses to H5N1 vaccine
Jens Wrammert, Emory University (IPIRC)
- 1:55-2:15 Activation of human dendritic cells by influenza virus with different receptor specificities: a new viral recognition strategy by immune cells?
Ana Fernandez-Sesma, Mt. Sinai School of Medicine (CRIP)
- 2:15-2:35 Redemption from original antigenic sin
Josh Jacob, Emory University (IPIRC)
- 2:35-2:55 *Break*
- 2:55-3:15 Specificity of HLA-DR1-restricted CD4 T cells elicited in the primary response to infection with a vaccine strain of H1N1 influenza
Andrea Sant, University of Rochester (NYICE)
- 3:15-3:35 TNF/iNOS-producing dendritic cells—the necessary evil of lethal influenza virus infection
Jerry Aldridge, St. Jude Children's Research Hospital (St. Jude CEIRS)
- 3:35-3:50 Summary and discussion of Session #9
- 3:50-4:20 Breakout session highlights
- 4:20-4:40 Program highlights and concluding remarks
Michael Osterholm, University of Minnesota (MCEIRS)
Diane Post, RDB/DMID/NIAID/NIH
- 4:40 *Adjourn*

BREAKOUT SESSION AGENDA

Bird Surveillance and Epidemiologic Coordination

Chair: David Stallknecht, University of Georgia

Tuesday, June 23, 2:20-3:30 pm

Alumni Room

Maintaining and maximizing relevance

Primary objectives of the surveillance efforts are to:

- a) Obtain representative type-A influenza viruses to support experimental and genomic sequencing efforts;
- b) Provide field data to better define the epidemiology and natural history of these viruses; and
- c) Provide field data to better understand the risk of transmission across animal and animal/human interfaces.

Field isolates

- Are the numbers of isolates being obtained from birds adequate to clearly define the avian reservoirs?
- How do we decide which isolates to sequence?
- Is global coverage adequate?
- Are isolates from captive/domestic birds adequately represented?

Epidemiology and natural history

- Are the minimum data fields adequate for these studies?
- Do we need a detailed "site description" for our study sites (wild, captive, and domestic)?
- What are the most important gaps in our understanding of the natural history?
- What are the most important gaps in our understanding of the bird/domestic animal/human interface?
- What do we need to evaluate to improve surveillance efficiency?

Risk: predictive value

- Can we effectively map expected AIV prevalence in wild birds with what we know NOW?
- Can effective risk maps based on wild bird/domestic animal interfaces be made NOW?
- What additional information do we need to define risk?

Coordination and collaboration (between Centers)

- Can any or all of the above be improved through some collaborative efforts (which ones)?
- Do we need to officially "organize" this into some larger projects?
- Are there other types of studies that are needed (e.g., pathogenesis) to improve perspective on any or all of the above?

BREAKOUT SESSION AGENDA

Next Generation Sequencing for Influenza Viruses: Lessons Learned and Strategies for the Future

Chair: Maria Giovanni, NIAID

Wednesday, June 24, 2:15-3:15 pm

Regents Room

- | | |
|---------------------|--|
| 2:15 pm
5-10 min | Welcome and Overview: NIAID Influenza Genome Sequencing Project
Maria Y. Giovanni, PhD, NIAID |
| 2:25 pm
10 min | 454 Sequencing Influenza Viruses
Srinand Sreevatsan, PhD, University of Minnesota |
| 2:35 pm
10 min | 454 Sequencing Influenza Viruses
David Spiro, PhD, J. Craig Venter Institute |
| 2:45 pm
10 min | Next Generation Sequencing for Viruses
Niall Lennon, PhD, The Broad Institute |
| 2:55 pm
20 min | Panel Discussion/Questions and Answers |
| 3:15 pm | Adjournment |

BREAKOUT SESSION AGENDA

Meeting of the CEIRS Data Managers

Chair: Valentina Di Francesco, NIAID

Thursday, June 25, 8:30am - 12:30pm

Presidents Room

8:30am-10:30am	Presentations from all CEIRS – Focus on best practices for data handling and data processing workflows
8:30am-8:50am	Julie Ostrowsky and Alain Duchene (MCEIRS)
8:50am-9:10am	Jerry Parker (St. Jude) "Submission of surveillance data to BHB". The talk will focus on current submission practices and the need for planning for future submission practices.
9:10am-9:30am	Jingming Ma (Rochester)
9:30am-9:50am	Eric Bortz (Mt. Sinai)
9:50am-10:10am	Andi Plotsky (Emory)
10:10-10:30am	Discussion
10:30am-10:50am	Break
10:50am-11:00am	Eric Bortz (Mt Sinai): "Passage Nomenclature"
11:am-11:30am	BHB "Prototype interface to upload virus characterization data into BHB"
11:30am-12:00pm	Discussion, next steps and closing remarks

CEIRS CENTER OVERVIEWS

St. Jude Center of Excellence for Influenza Research and Surveillance

Lead Institution: St. Jude Children's Research Hospital

PI: Robert Webster, PhD

The overarching goals of the Center of Excellence for Influenza Research and Surveillance (CEIRS) at St. Jude Children's Research Hospital and its subcontract partners (Hong Kong U, Kansas State, NADC, USDA, NRC Egypt) is to be prepared to detect and control the emergence of novel influenza viruses that are a threat to both the human and animal populations of the world. While the focus has been on continued evolution of the highly pathogenic Asian H5N1 virus in Asia, our aim is to have a global network for early detection of all influenza viruses. Thus, our current focus is on the newly emerged H1N1 virus of swine lineage. Currently, St. Jude CEIRS animal surveillance spans to more than a dozen countries and multiple U.S. States. In addition, St. Jude also monitors pediatric populations for flu activity and maintain a surveillance component to monitor for evidence of the reemergence of the severe acute respiratory syndrome (SARS). Our research is aimed at: indentifying viral markers that may indicate how a virus becomes deadly, adapts and transmits infection; uncovering immune system mechanisms that protect against the H1N1 avian flu virus; and indentifying the factors that make animals and people susceptible to flu virus infection. On the practical level we continue to prepare reagents for research and vaccine standardization as well as characterizing the susceptibility of all emerging viruses to the current and future anti-viral strategies. In response to the continuing evolution of influenza viruses and St. Jude's position as one of five World Health Organization Collaborating Centers, efforts continue to prepare seed stocks suitable for vaccines for human and lower animals.

New York Influenza Center of Excellence (NYICE)

Lead Institution: University of Rochester

PI: John Treanor, MD

The New York Influenza Center of Excellence (NYICE) is one of six Centers of Excellence in Influenza Research and Surveillance (CEIRS) funded by the NIH in April 2007. Research activities of NYICE are focused on studies of the pathogenesis and host response of avian and human influenza viruses. Three projects provide a comprehensive assessment of the immune response to influenza in humans and in animal models, and attempt to identify cross-reactive responses that might provide the theoretical underpinnings for broadly protective vaccines. Two other projects evaluate the mechanisms of host range specific replication for influenza viruses by assessing the structural differences in the hemagglutinin and polymerase protein complexes that impact replication efficiency in avian and mammalian cell culture and animal models. These projects are supported by a clinical core that organizes and carries out studies of the response to infection and vaccination in selected human populations. A sample handling core organizes, stores, and distributes samples collected in these clinical studies, and a data management core provides a web-based solution for data storage and data sharing.

Website: <http://www.urmc.rochester.edu/nyice/>

Center for Research on Influenza Pathogenesis (CRIP)

Lead Institution: Mount Sinai School of Medicine

PI: Adolfo García-Sastre, PhD

CRIP received funding from the National Institute of Allergy and Infectious Diseases as one of six NIAID Centers of Excellence for Influenza Research and Surveillance (CEIRS). CRIP is dedicated to understanding influenza by conducting novel collaborative research into virus pathogenesis, host restriction, transmission, evolution and host adaptation, interactions between influenza virus proteins and gene segments, evasion of immunity, and induction of host responses. Through this research program, scientists at CRIP will promote better understanding of the host range of influenza viruses and the molecular and immunological factors leading to pandemic flu. Led by Principal Investigator, Dr. Adolfo García-Sastre, CRIP is comprised of individual project leaders, Dr. Peter Palese, Mount Sinai School of Medicine; Dr. Ron Fouchier, Erasmus Medical Center (The Netherlands); Dr. Daniel Perez, University of Maryland; and Dr. Yoshi Kawaoka, University of Wisconsin–Madison. Dr. García-Sastre leads Project 1 – “Contribution of NS1 to Pathogenicity and Evasion of Innate Immunity.” Dr. Palese leads Project 2 – “Pathogenicity Factors Encoded by the Influenza Virus Polymerase Genes.” Dr. Fouchier leads Project 3 – “Pandemic flu; Host Adaptation of Influenza A Virus.” Dr. Perez leads Project 4 – “Molecular Determinants of Adaptation of Influenza Viruses to Domestic Birds and their Effect on Interspecies Transmission.” CRIP also has a pilot program research component over 6 years for 4 individual pilot projects. Dr. Ana Fernandez-Sesma leads the first project, “Activation of Human Dendritic Cells by Influenza Virus with Different Receptor Specificities: A New Viral Recognition Strategy by Immune Cells?” CRIP is also engaged in avian influenza surveillance. In order to coordinate surveillance and research activities associated with surveillance, Drs. Perez and Fouchier share oversight responsibilities in all matters related to surveillance activities in the CRIP network. Dr. Fouchier has ample experience in coordinating influenza virus surveillance activities in several parts of the world, including Europe and Asia, and Dr. Perez has established collaborations with several groups in Central and South America and in Central Asia for influenza virus surveillance. In addition, Dr. Kawaoka conducts an influenza virus surveillance program in Vietnam, one of the most interesting countries with respect to H5N1 influenza virus infections and evolution. In addition to the surveillance activities, research activities are conducted with representative isolated strains obtained from the CRIP surveillance sites.

Website:

<http://www.mountsinai.org/Research/Centers%20Laboratories%20and%20Programs/Center%20for%20Research%20on%20Influenza%20Pathogenesis>

Influenza Pathogenesis & Immunology Research Center (IPIRC)

Lead Institution: Emory University

PI: Richard Compans, PhD

The Influenza Pathogenesis & Immunology Research Center (IPIRC) is one of six national Influenza Centers of Excellence funded by NIH/NIAID. The goals of the Center are to determine

the molecular, ecologic, and/or environmental factors that influence the evolution, emergence, transmission, and pathogenicity of influenza viruses, including studies on animal influenza viruses with pandemic potential; and to characterize the immune response to influenza vaccination to improve understanding of the immune correlates of protection and cross-protection. The Center's structure is comprised of four research projects, two pilot projects, and two training slots. The scope of the Center's focus includes planning for pandemic influenza and sharing data with other scientists in order to promote collaboration and lay the groundwork for new and improved methods of controlling influenza virus. In the event of a public health emergency involving the emergence and spread of an influenza pandemic in humans, the Network of Centers will be on the frontline to implement the NIAID Pandemic Public Health Research Response Plan.

Website: <http://www.microbiology.emory.edu/ipirc/faculty.html>

Minnesota Center of Excellence for Influenza Research & Surveillance (MCEIRS)

Lead Institution: University of Minnesota

PI: Michael Osterholm, PhD, MPH

Established by NIH in April 2007, the Minnesota Center of Excellence for Influenza Research and Surveillance (MCEIRS) focuses on the detection, epidemiology, ecology, and transmission of influenza A viruses. The overall goal is to enhance understanding of how influenza viruses evolve, adapt, and spread among animal populations and from animals to humans. As an international, collaborative research center drawing on a wide range of technical expertise, MCEIRS also serves as a high-level scientific resource in the event of a public health emergency involving the emergence and transmission of pandemic influenza or high pathogenic influenza virus. The central components of MCEIRS' program are surveillance, detection, virus isolation, genetic analysis, ecological assessment, outbreak investigation, experimental research on the pathogenesis and transmission of influenza viruses, and development of domestic and international capacity-building education and training programs. MCEIRS' surveillance initiatives underway in North America, Central America, Southeast Asia, and East Africa are aimed at identifying and analyzing influenza viruses in wild birds, poultry, swine, and humans at high risk of infection through close contact with animals.

Center for Rapid Influenza Surveillance and Research (CRISAR)

Lead Institution: University of California, Los Angeles

PI: Scott Layne, MD

Under the leadership of Principal Investigator Scott Layne, investigators at the Center for Rapid Influenza Surveillance and Research (CRISAR) monitor animal influenza internationally and in the states of Alaska, Washington and California. They will also maintain a high-throughput laboratory network capable of providing real-time information about circulating influenza virus strains and antiviral drug resistance, information that will be most critical during the early stages of an influenza pandemic.

POSTER SESSION

Posters will be presented in the Faculty Room

Tuesday, June 23, 5:05-6:30 pm and Wednesday, June 24, 5:15-6:00 pm

#	Lead	Affiliation	CEIRS	Title
1	Eric Bortz	Mt Sinai	CRIP	A cellular network regulating the influenza H5N1 polymerase
2	Nicole Bouvier	Mt Sinai	CRIP	An oseltamivir-resistant influenza A/H1N1 virus transmits more efficiently among Guinea pigs than does a similar oseltamivir-sensitive isolate
3	Gina Conenello	Mt Sinai	CRIP	PB1-F2 increases virulence independent of apoptosis
4	John Steel	Mt Sinai	CRIP	VN1203 NS1 tail doesn't increase virulence in PR8 background
5	Silke Stertz	Mt Sinai	CRIP	Influenza virus polymerase-specific monoclonal antibodies
6	Justin Bahl	St Jude	St Jude	The continued evolution of influenza A virus in Asian swine
7	Adrianus Boon	St Jude	St Jude	Genetic variation among inbred mouse strains affects survival after H5N1 infection
8	Vasily Evseenko	St Jude	St Jude	Avian influenza surveillance in Danube delta region
9	Ghazi Kayali	St Jude	St Jude	Human studies of avian influenza in the Middle East
10	Jeong-Ki Kim	St Jude	St Jude	Characterization of the pathogenicity and transmissibility of H5N1 viruses from Lao PDR in various hosts
11	Chwan-Chuen King	National Taiwan U.	St Jude	Molecular changes of Taiwan's LPAI H5N2 viruses from ducks
12	Henju Marjuki	St Jude	St Jude	Isolation of H5N1 from Saker Falcons in the Middle East
13	Olive TW Li and Leo LM Poon	Univ. of Hong Kong	St Jude	Possible role of chimeric polymerase for virus adaptation
14	Charles Russell	St Jude	St Jude	HA protein fusogenicity in H5N1 disease and transmission
15	Paul Thomas	St Jude	St Jude	NLRP3 mediates key innate and healing responses to influenza
16	Ramakrishnan Muthannan Andavar	UMN	MCEIRS	Pyrosequencing
17	Ramakrishnan Muthannan Andavar	UMN	MCEIRS	Interspecies transmission
18	Amanda Beaudoin	UMN	MCEIRS	Survey of swine workers for exposure to H2N3 swine influenza
19	Yogesh Chander	UMN	MCEIRS	Amplification of four genes of influenza A viruses

20	Cesar Corzo	UMN	MCEIRS	Regional occurrence of influenza in turkeys and pigs in Minnesota
21	Anthony Fries	OSU	MCEIRS	Feasibility of sourcing methods for AIV infected mallards
22	Jennifer Nayak	UR	NYICE	CD4 T cell specificity following primary influenza infection
23	Longping Victor Tse	Cornell	NYICE	HA cleavage site mutation control infection, spread of WSN
24	Jonathan Runstadler	UAF	CRISAR	Mx gene diversity among five wild duck species
25	Jonathan Runstadler	UAF	CRISAR	Investigating the ecology of influenza at northern latitudes
26	George Happ	UAF	CRISAR	Pacific Rim surveillance
27	Falk Huettmann	UAF	CRISAR	Entering the digital side of the lab: avian influenza predictions for the Pacific Rim and beyond

3rd Annual CEIRS Network Meeting **PARTICIPANT LIST**

MARTHA ABIN
UNIVERSITY OF MINNESOTA
St Paul, MN
fuent006@umn.edu

ALONGKORN AMONSIN
CHULALONGKORN UNIVERSITY
BANGKOK, THAILAND
Alongkorn.a@chula.ac.th

YIMING BAO
NIH/NLM/NCBI
BETHESDA, MD
bao@ncbi.nlm.nih.gov

NICOLE BAUMGARTH
UNIVERSITY OF CALIFORNIA, DAVIS
DAVIS, CA
nbaumgarth@ucdavis.edu

DAVID BOLTZ
ST. JUDE CHILDREN'S RESEARCH
HOSPITAL
MEMPHIS, TN
david.boltz@stjude.org

NICOLE BOUVIER
MOUNT SINAI SCHOOL OF
MEDICINE
NEW YORK, NY
nicole.bouvier@mssm.edu

CHRISTY BROCKWELL-STAATS
ST. JUDE CHILDREN'S RESEARCH
HOSPITAL
MEMPHIS, TN
christy.brockwell@stjude.org

RYAN CAMPING
MOUNT SINAI SCHOOL OF
MEDICINE
NEW YORK, NY
ryan.camping@mssm.edu

FELI CASTRO-PERALTA
LABORATORIO AVI-MEX
MEXICO CITY, MEXICO
castropf@avimex.com.mx

HONGLIN CHEN
UNIVERSITY OF HONG KONG
HONG KONG SAR, CHINA
hlchen@hkucc.hku.hk

ELAINE COLLISON
UNIVERSITY OF MINNESOTA
MINNEAPOLIS, MN
collison@umn.edu

RANDY ALBRECHT
MOUNT SINAI SCHOOL OF
MEDICINE
NEW YORK, NY
randy.albrecht@mssm.edu

MATTHEW ANGEL
UNIVERSITY OF MARYLAND,
COLLEGE PARK
COLLEGE PARK, MD
mgangel@umd.edu

SUBRATA BARMAN
ST. JUDE CHILDREN'S RESEARCH
HOSPITAL
MEMPHIS, TN
subrata.barman@stjude.org

AMANDA BEAUDOIN
UNIVERSITY OF MINNESOTA
SAINT PAUL, MN
beau0209@umn.edu

JACCO BOON
ST. JUDE CHILDREN'S RESEARCH
HOSPITAL
MEMPHIS, TN
Jacco.Boon@stjude.org

DEBORA BOYLE
UNIVERSITY OF MINNESOTA
MINNEAPOLIS, MN
boyle001@umn.edu

JUSTIN BROWN
UNIVERSITY OF GEORGIA
ATHENS, GA
jubrown1@uga.edu

CAROL CARDONA
UNIVERSITY OF CALIFORNIA,
DAVIS
DAVIS, CA
cjcardona@ucdavis.edu

MARGARET CELEBREZZE
UNIVERSITY OF MINNESOTA
ST. PAUL, MN
celeb004@umn.edu

ANDREW CHERRY
DMID/NIAID/NIH
BETHESDA, MD
cherryan@niaid.nih.gov

RICHARD COMPANS
EMORY UNIVERSITY
ATLANTA, GA
rcompan@emory.edu

JERRY ALDRIDGE
ST. JUDE CHILDREN'S RESEARCH
HOSPITAL
MEMPHIS, TN
jerry.aldridge@stjude.org

JUSTIN BAHL
UNIVERSITY OF HONG KONG
HONG KONG, HONG KONG
bahlj@hku.hk

JOANNE BARTKUS
MINNESOTA DEPARTMENT OF HEALTH
SAINT PAUL, MN
joanne.bartkus@state.mn.us

ALAN BELICHA
MOUNT SINAI SCHOOL OF MEDICINE
NEW YORK, NY
alan.belicha@mssm.edu

ERIC BORTZ
MOUNT SINAI SCHOOL OF MEDICINE
NEW YORK, NY
eric.bortz@mssm.edu

VINAYAK BRAHMAKSHATRIYA
TEXAS A&M UNIVERSITY
COLLEGE STATION, TX
vbrahma@cvm.tamu.edu

KENDRA BUSSEY
UNIVERSITY OF ROCHESTER
ROCHESTER, NY
kendra_bussey@urmc.rochester.edu

TANYA CASSINGHAM
EMORY UNIVERSITY
ATLANTA, GA
tcassin@emory.edu

YOGESH CHANDER
UNIVERSITY OF MINNESOTA
ST. PAUL, MN
chand062@umn.edu

ASHOK CHOCKALINGAM
UNIVERSITY OF MINNESOTA
ST PAUL, MN
chock006@umn.edu

GINA CONENELLO
MOUNT SINAI SCHOOL OF MEDICINE
NEW YORK, NY
gina.conenello@mssm.edu

CESAR CORZO
UNIVERSITY OF MINNESOTA
ST PAUL, MN
corzo002@umn.edu

SUSAN DANIEL
CORNELL UNIVERSITY
ITHACA, NY
sd386@cornell.edu

JILL DEBOER
UNIVERSITY OF MINNESOTA
Minneapolis, MN
jdeboer@umn.edu

JON DIETRICH
NORTHROP GRUMMAN
ROCKVILLE, MD
jonathan.dietrich@ngc.com

VASILY EVSEENKO
ST. JUDE CHILDREN'S RESEARCH
HOSPITAL
MEMPHIS, TN
vasily.evseenko@stjude.org

RON FOUCHIER
ERASMUS MEDICAL CENTER
ROTTERDAM, NETHERLANDS
r.fouchier@erasmusmc.nl

ADOLFO GARCIA-SASTRE
MOUNT SINAI SCHOOL OF
MEDICINE
New York, NY
adolfo.garcia-sastre@mssm.edu

BRUCE GELLIN
US DEPT. OF HEALTH AND HUMAN
SERVICES
WASHINGTON, DC
bruce.gellin@hhs.gov

NICOLE GORDON
NIAID/NIH
BETHESDA, MD
gordonn@niaid.nih.gov

MARIE GRAMER
UNIVERSITY OF MINNESOTA
SAINT PAUL, MN
grame003@umn.edu

SUSAN HADJIYANIS
UNIVERSITY OF MINNESOTA
Minneapolis, MN
hadji009@umn.edu

MATHEUS COSTA
UNIVERSITY OF MINNESOTA
SAINT PAUL, MN
costa086@umn.edu

MIRANDA DE GRAAF
ERASMUS MEDICAL CENTER
ROTTERDAM, NETHERLANDS
m.degraaf@erasmusmc.nl

SUSAN DETMER
UNIVERSITY OF MINNESOTA
SAINT PAUL, MN
detm0002@umn.edu

ALAIN DUCHENE
UNIVERSITY OF MINNESOTA
MINNEAPOLIS, MN
alain@ccbr.umn.edu

ANA FERNANDEZ-SESMA
MOUNT SINAI SCHOOL OF MEDICINE
NEW YORK,
ana.sesma@mssm.edu

TONY FRIES
OHIO STATE UNIVERSITY
COLUMBUS, OH
fries.41@osu.edu

JACK GELB
UNIVERSITY OF DELAWARE
NEWARK, DE
jgelb@udel.edu

MARIA Y. GIOVANNI
NIAID/NIH
BETHESDA, MD
mgiovanni@niaid.nih.gov

ELENA GOVORKOVA
ST. JUDE CHILDREN'S RESEARCH
HOSPITAL
MEMPHIS, TN
elena.govorkova@stjude.org

YI GUAN
UNIVERSITY OF HONG KONG
POKFULAM, HONG KONG
yguan@hku.hk

DAVID HALVORSON
UNIVERSITY OF MINNESOTA
SAINT PAUL, MN
halvo002@umn.edu

NANCY COX
CENTERS FOR DISEASE CONTROL AND
PREVENTION
ATLANTA, GA
Ncox1@cdc.gov

EMMIE DE WIT
ERASMUS MEDICAL CENTER
ROTTERDAM, NETHERLANDS
e.dewit@erasmusmc.nl

VALENTINA DI FRANCESCO
NIAID/NIH/DHHS
BETHESDA, MD
vdi francesco@niaid.nih.gov

MOHAMED EL ZOWALATY
UNIVERSITY OF MINNESOTA
ST PAUL, MN
mohamedzowalaty@hotmail.com

PAM FERRO
TEXAS A&M UNIVERSITY
College Station, TX
pferro@cvm.tamu.edu

SUSAN FULLER
MINNESOTA DEPARTMENT OF HEALTH
St. Paul, MN
Susan.Fuller@state.mn.us

BRUCE GELLER
OREGON STATE UNIVERSITY
CORVALLIS, OR
gellerb@orst.edu

IRENE GLOWINSKI
NIAID/NIH
BETHESDA, MD
iglowinski@niaid.nih.gov

SAGAR GOYAL
UNIVERSITY OF MINNESOTA
ST PAUL, MN
goyal001@umn.edu

MARIA HELENA GUARINO
UNIVERSITY OF MINNESOTA
ST. PAUL, MN
guar0004@umn.edu

GRAY HANDLEY
NIH / NIAID / OGR
BETHESDA, MD
handleygr@niaid.nih.gov

GEORGE HAPP
UNIVERSITY OF ALASKA
FAIRBANKS, AK
george.happ@alaska.edu

VICKI HERTZBERG
Emory University
ATLANTA, GA
vhertz@emory.edu

FALK HUETTMANN
UNIVERSITY OF ALASKA
FAIRBANKS, AK
fffh@uaf.edu

NARESH JINDAL
UNIVERSITY OF MINNESOTA
ST PAUL, MN
jinda014@umn.edu

PRISCILLA JOYNER
WILDLIFE CONSERVATION SOCIETY
BRONX, NY
pjoyner@wcs.org

NICK KELLEY
UNIVERSITY OF MINNESOTA
BLOOMINGTON, MN
kelle569@umn.edu

PATRICE KLEIN
APHIS/USDA
RIVERDALE, MD
Patrice.N.Klein@aphis.usda.gov

BRIAN LADMAN
UNIVERSITY OF DELAWARE
NEWARK, DE
bladman@udel.edu

LYNN LAW
UNIVERSITY OF WASHINGTON
SEATTLE, WA
gllaw@u.washington.edu

CINDY LEE
UNIVERSITY OF HONG KONG
POKFULAM, HONG KONG
leechiao@hku.hk

JINGMING MA
UNIVERSITY OF ROCHESTER
ROCHESTER, NY
jma@bst.rochester.edu

LANCE HELLSTROM
UNIVERSITY OF MINNESOTA
ST PAUL, MN
hell0191@umn.edu

SURESH HONNAPPAGOL
KVAFSU
BIDAR, INDIA
vckvafsu@yahoo.co.in

YEN HUI-LING
UNIVERSITY OF HONG KONG
HONG KONG, HONG KONG
hyen@hku.hk

DOUG JOHNSON
UNIVERSITY OF MINNESOTA
MINNEAPOLIS, MN
johns231@tc.umn.edu

GHAZI KAYALI
ST. JUDE CHILDREN'S RESEARCH
HOSPITAL
MEMPHIS, TN
ghazi.kayali@stjude.org

JEONG-KI KIM
ST. JUDE CHILDREN'S RESEARCH
HOSPITAL
MEMPHIS, TN
jeong-ki.kim@stjude.org

ED KLEM
NORTHROP GRUMMAN
ROCKVILLE, MD
Ed.Klem@ngc.com

KELLY LAGER
NATIONAL ANIMAL DISEASE
CENTER
AMES, IA
KELLY.LAGER@ARS.USDA.GOV

CHANG-WON LEE
OHIO STATE UNIVERSITY
WOOSTER, OH
lee.2854@osu.edu

NIALL LENNON
BROAD INSTITUTE
CAMBRIDGE, MA
nlennon@broad.mit.edu

NUBIA MACEDO
UNIVERSITY OF MINNESOTA
SAINT PAUL, MN
maced004@umn.edu

SANDER HERFST
ERASMUS MEDICAL CENTER
ROTTERDAM, NETHERLANDS
s.herfst@erasmusmc.nl

WENDY HOWARD
WELLCOME TRUST
LONDON, UNITED KINGDOM
w.howard@wellcome.ac.uk

JOSHY JACOB
EMORY UNIVERSITY
ATLANTA, GA
josh_jacobs@microbio.emory.edu

PETER JOHNSON
CSREES/USDA
WASHINGTON, DC
pjohnson@csrees.usda.gov

CORKY KELLEHER
SYNCHRONOSS
FLEMINGTON, NJ
corkykelleher@aol.com

CHWAN-CHUEN KING
NATIONAL TAIWAN UNIVERSITY
TAIPEI, TAIWAN
chwanchuen@gmail.com

SCOTT KRAUSS
ST. JUDE CHILDREN'S RESEARCH
HOSPITAL
MEMPHIS, TN
scott.krauss@stjude.org

LINDA LAMBERT
NIAID/NIH
BETHESDA, MD
LL153P@nih.gov

CHANG-CHUN LEE
NATIONAL TAIWAN UNIVERSITY
TAIPEI, TAIWAN
david.david1234@gmail.com

ANICE LOWEN
MOUNT SINAI SCHOOL OF MEDICINE
NEW YORK, NY
anice.lowen@mssm.edu

CATHERINE MACKEN
LOS ALAMOS NATIONAL LABORATORY
Los Alamos, NM
cmacken@lanl.gov

PRADEEP MALIK
WILDLIFE INSTITUTE OF INDIA
DEHRADUN, INDIA
malikpk@wii.gov.in

HENJU MARJUKI
ST. JUDE CHILDREN'S RESEARCH
HOSPITAL
MEMPHIS, TN
henju.marjuki@stjude.org

RAFAEL MEDINA SILVA
MOUNT SINAI SCHOOL OF
MEDICINE
NEW YORK, NY
rafael.medina@mssm.edu

LARISSA MINICUCCI
UNIVERSITY OF MINNESOTA
ST. PAUL, MN
minic001@umn.edu

EGBERT MUNDT
UNIVERSITY OF GEORGIA
ATHENS, GA
emundt@uga.edu

KAKAMBI NAGARAJA
UNIVERSITY OF MINNESOTA
ST PAUL, MN
Nagar001@tc.umn.edu

GABRIELE NEUMANN
UNIVERSITY OF WISCONSIN,
MADISON
MADISON, WI
neumanng@svm.vetmed.wisc.edu

AMANDA OLIVEIRA
UNIVERSITY OF MINNESOTA
ST. PAUL, MN
oliv0218@gmail.com

MIKE OSTERHOLM
UNIVERSITY OF MINNESOTA
MINNEAPOLIS, MN
mto@umn.edu

JERRY PARKER
ST. JUDE CHILDREN'S RESEARCH
HOSPITAL
MEMPHIS, TN
jerry.parker@stjude.org

MALIK PEIRIS
UNIVERSITY OF HONG KONG
POKFULAM, HONG KONG
malik@hku.hk

BALAJI MANICASSAMY
MOUNT SINAI SCHOOL OF
MEDICINE
NEW YORK, NY
balaji.manicassamy@mssm.edu

PUNAM MATHUR
NIAID/NIH/DHHS
BETHESDA, MD
mathurpu@niaid.nih.gov

PAUL MEYER
UNIVERSITY OF MINNESOTA
MINNEAPOLIS, MN
pjmeier@umn.edu

KRIS MOORE
UNIVERSITY OF MINNESOTA
BOLDER, CO
kamoore@umn.edu

VINCENT MUNSTER
ERASMUS MEDICAL CENTER
ROTTERDAM, NETHERLANDS
v.munster@erasmusmc.nl

JENNIFER NAYAK
UNIVERSITY OF ROCHESTER
ROCHESTER, NY
jennifer_nayak@urmc.rochester.edu

JACQUELINE NOLTING
OHIO STATE UNIVERSITY
COLUMBUS, OH
nolting.4@osu.edu

GARTH OSBORN
UNIVERSITY OF MINNESOTA
MINNEAPOLIS, MN
osbo0001@umn.edu

JULIE OSTROWSKY
UNIVERSITY OF MINNESOTA
MINNEAPOLIS, MN
jto@umn.edu

DEVI PATNAYAK
UNIVERSITY OF MINNESOTA
ST PAUL, MN
patn0016@umn.edu

MICHAEL PERDUE
US DEPT. OF HEALTH AND HUMAN
SERVICES
WASHINGTON, DC
Michael.Perdue@hhs.gov

GLENDIE MARCELIN
ST. JUDE CHILDREN'S RESEARCH
HOSPITAL
MEMPHIS, TN
glendie.marcelin@stjude@org

PAM MCKENZIE
ST. JUDE CHILDREN'S RESEARCH
HOSPITAL
MEMPHIS, TN
pamela.mckenzie@stjude.org

KARINA MILOSOVICH
UNIVERSITY OF MINNESOTA
MINNEAPOLIS, MN
milo0014@umn.edu

JURANDIR DE MOURA
UNIVERSITY OF MINNESOTA
ST. PAUL, MN
moura009@umn.edu

M. A. RAMAKRISHNAN
UNIVERSITY OF MINNESOTA
ST PAUL, MN
rama@umn.edu

JIM NEATON
UNIVERSITY OF MINNESOTA
MINNEAPOLIS, MN
jim@ccbr.umn.edu

LUCY OGG KEATTS
WILDLIFE CONSERVATION SOCIETY
VIENTIANE, LAOS
lkeatts@wcs.org

CHRISTINE WEILNAU
UNIVERSITY OF GEORGIA
ATHENS, GA
coshan@uga.edu

PETER PALESE
MOUNT SINAI SCHOOL OF MEDICINE
NEW YORK, NY
peter.palese@mssm.edu

GEISA PAULIN-CURLEE
UNIVERSITY OF MINNESOTA
ST PAUL, MN
paul0472@umn.edu

DANIEL PEREZ
UNIVERSITY OF MARYLAND, COLLEGE
PARK
COLLEGE PARK, MD
dperez1@umd.edu

ANDREA PETERSEN
UNIVERSITY OF MINNESOTA
MINNEAPOLIS, MN
pete1155@umn.edu

LEO POON
UNIVERSITY OF HONG KONG
HONG KONG, HONG KONG
llmpoon@hkucc.hku.hk

REBECCA POULSON
UNIVERSITY OF GEORGIA
ATHENS, GA
rpoulson@uga.edu

IRENE RAMOS-LOPEZ
MOUNT SINAI SCHOOL OF
MEDICINE
NEW YORK, NY
irene.ramos-lopez@mssm.edu

KATIE RICHARDS
UNIVERSITY OF ROCHESTER
BROCKPORT, NY
katherine_skelly@urmc.rochester.edu

ROBIN ROBINSON
US DEPT. OF HEALTH AND HUMAN
SERVICES
WASHINGTON, DC
robin.robinson@hhs.gov

JONATHAN RUNSTADLER
UNIVERSITY OF ALASKA
FAIRBANKS, AK
j.runstadler@uaf.edu

MARK SANGSTER
UNIVERSITY OF TENNESSEE
KNOXVILLE, TN
msangste@utk.edu

TAMER SHARAF EL DIN
UNIVERSITY OF MINNESOTA
MINNEAPOLIS, MN
shara020@tc.umn.edu

RICHARD SLEMONS
OHIO STATE UNIVERSITY
COLUMBUS, OH
slemons.1@osu.edu

GAVIN SMITH
UNIVERSITY OF HONG KONG
POKFULAM, HONG KONG
gsmith@hku.hk

DARLA PHILLIPS
UNIVERSITY OF MINNESOTA
MINNEAPOLIS, MN
phill017@umn.edu

ROB PORTER
UNIVERSITY OF MINNESOTA
ST. PAUL, MN
porte349@umn.edu

GAYA PRASAD
CCS HARYANA AGRICULTURAL
UNIVERSITY
HISAR, INDIA
gprasad1986@gmail.com

PATRICK REDIG
UNIVERSITY OF MINNESOTA
ST PAUL, MN
redig001@umn.edu

JUERGEN RICHT
KANSAS STATE UNIVERSITY
MANHATTAN, KS
jricht@vet.k-state.edu

MARCUS ROLLINS
UNIVERSITY OF MINNESOTA
ST. PAUL, MN
roll0137@umn.edu

CHARLES RUSSELL
ST. JUDE CHILDREN'S RESEARCH
HOSPITAL
MEMPHIS, TN
charles.russell@stjude.org

JIROJ SASIPREEYAJAN
CHULALONGKORN UNIVERSITY
BANGKOK, THAILAND
jroj_s@hotmail.com,
jroj.s@chula.ac.th

LORI SIEDELMAN
UNIVERSITY OF MINNESOTA
MINNEAPOLIS, MN
sied0020@umn.edu

HEATHER SMALLWOOD
ST JUDE CHILDREN'S RESEARCH
HOSPITAL
MEMPHIS, TN
heather.smallwood@stjude.org

ALICIA SOLORANZO
UNIVERSITY OF MARYLAND,
COLLEGE PARK
COLLEGE PARK, MD
asolor@umd.edu

ANDI PLOTSKY
EMORY UNIVERSITY
ATLANTA, GA
agplots@emory.edu

DIANE POST
DMID/NIAID/NIH
BETHESDA, MD
postd@niaid.nih.gov

SUBATHRA RAJU
UNIVERSITY OF MINNESOTA
ST.PAUL, MN
rajux013@umn.edu

C. RENUKAPRASAD
KVAFSU
BANGALORE, INDIA
c.renukaprasad@gmail.com

NICHELE ROBINSON
NIAID/NIH
BETHESDA, MD
robinsonnc@niaid.nih.gov

KURT ROSSOW
UNIVERSITY OF MINNESOTA
ST. PAUL, MN
rosso003@umn.edu

MO SAIF
OHIO STATE UNIVERSITY
WOOSTER, OH
saif.1@osu.edu

RICHARD SCHEUERMANN
UNIVERSITY OF TEXAS SOUTHWESTERN
MEDICAL CENTER
DALLAS, TX
richard.scheuermann@utsouthwestern.edu

CELINA SIENRA
UNIVERSITY OF MINNESOTA
ST.PAUL, MN
sienr002@umn.edu

DAVID F. SMITH
EMORY UNIVERSITY
ATLANTA, GA
dfsmith@emory.edu

STEPH SONNBERG
ST. JUDE CHILDREN'S RESEARCH
HOSPITAL
MEMPHIS, TN
Stephanie.Sonnberg@StJude.org

DAVID SPIRO
J. CRAIG VENTER INSTITUTE
ROCKVILLE, MD
dspiro@jcv.org

DAVE STALLKNECHT
UNIVERSITY OF GEORGIA
ATHENS, GA
dstall@uga.edu

SILKE STERTZ
MOUNT SINAI SCHOOL OF
MEDICINE
NEW YORK, NY
silke.stertz@mssm.edu

NATHANIEL TABLANTE
UNIVERSITY OF MARYLAND,
COLLEGE PARK
COLLEGE PARK, MD
nlt@umd.edu

GREGORY THOMPSON
UNIVERSITY OF MINNESOTA
MINNEAPOLIS, MN
gt@cabr.umn.edu

JOHN TREANOR
UNIVERSITY OF ROCHESTER
ROCHESTER, NY
John_Treanor@urmc.rochester.edu

AMY VINCENT
NATIONAL ANIMAL DISEASE
CENTER
AMES, IA
AMY.VINCENT@ARS.USDA.GOV

RICHARD WEBBY
ST. JUDE CHILDREN'S RESEARCH
HOSPITAL
MEMPHIS, TN
richard.webby@stjude.org

VANESSA WHITEHURST
EMORY UNIVERSITY
ATLANTA, GA
vwhiteh@emory.edu

JENS WRAMMERT
EMORY UNIVERSITY
ATLANTA, GA
jwramme@emory.edu

CHINGLAI YANG
EMORY UNIVERSITY
ATLANTA, GA
chyang@emory.edu

RICHARD SQUIRES
UNIVERSITY OF TEXAS
SOUTHWESTERN MEDICAL CENTER
DALLAS, TX
richard.squires@utsouthwestern.edu

JOHN STEEL
MOUNT SINAI SCHOOL OF
MEDICINE
NEW YORK, NY
john.steel@mssm.edu

DAVID SUAREZ
USDA-ARS
ATHENS, GA
david.suarez@ars.usda.gov

TORU TAKIMOTO
UNIVERSITY OF ROCHESTER
ROCHESTER, NY
toru_takimoto@urmc.rochester.edu

MARK TOMPKINS
UNIVERSITY OF GEORGIA
ATHENS, GA
smt@uga.edu

DONNA TSCHERNE
MOUNT SINAI SCHOOL OF
MEDICINE
NEW YORK, NY
Donna.Tscherne@mssm.edu

PING WANG
UNIVERSITY OF MINNESOTA
ST. PAUL, MN
wangx687@umn.edu

MARJORIE WEBSTER
ST. JUDE CHILDREN'S RESEARCH
HOSPITAL
MEMPHIS, TN
robert.webster@stjude.org

GARY WHITTAKER
CORNELL UNIVERSITY
ITHACA, NY
grw7@cornell.edu

JIE XU
GEORGIA INSTITUTE OF
TECHNOLOGY
ATLANTA, GA
jie.xu@gtri.gatech.edu

HADI YASSINE
OHIO STATE UNIVERSITY
WOOSTER, OH
yassine.2@buckeyemail.osu.edu

SRINAND SREEVATSAN
UNIVERSITY OF MINNESOTA
SAINT PAUL, MN
sreev001@umn.edu

DAVID STEINHAEUER
EMORY UNIVERSITY
ATLANTA, GA
steinhauer@microbio.emory.edu

KANTA SUBBARAO
NIAID/NIH
BETHESDA, MD
ksubbarao@niaid.nih.gov

PAUL THOMAS
ST. JUDE CHILDREN'S RESEARCH
HOSPITAL
MEMPHIS, TN
paul.thomas@stjude.org

DAVID TOPHAM
UNIVERSITY OF ROCHESTER
ROCHESTER, NY
david_topham@urmc.rochester.edu

VICTOR TSE
CORNELL UNIVERSITY
ITHACA, NY
lt273@cornell.edu

WEN-WEN WANG
NATIONAL TAIWAN UNIVERSITY
TAIPEI, TAIWAN
b92801020@ntu.edu.tw

ROBERT WEBSTER
ST. JUDE CHILDREN'S RESEARCH
HOSPITAL
MEMPHIS, TN
robert.webster@stjude.org

BEN WILCOX
UNIVERSITY OF GEORGIA
ATHENS, GA
bwilcox@uga.edu

ANGELA YANG
WILDLIFE CONSERVATION SOCIETY
BRONX, NY
ayang@wcs.org

Notes