ACTIVITIES AND COORDINATION TO ADDRESS HIGHEST PRIORITY GAPS

Daniel Perez
Program Director, Prevention and Control of Avian Influenza
In the United States
University of Maryland, Assistant Professor
Department of Veterinary Medicine
Prevention and Control of Avian Influenza in the U.S.

USDA CSREES Nº 35605-15388

USDA - CSREES

NRI - CAP

Cooperative Agricultural Project: Animal and Plant Biosecurity
USDA NRI Animal Biosecurity
Objectives and Goals

- Help ag. producers and professionals safeguard US agriculture from animal diseases and associated losses
- Establish investigator collaboration on diseases of high economic impact
- Help assure continued supply of safe, high-quality, affordable food and fiber for consumers and trade partners
Unique NRI Program

- Goal: To enhance global competitiveness of US agriculture
- Relatively large projects
- Emphasis on integration of
  - Research
  - Education
  - Extension
Prevention and Control of Avian Influenza in the U.S.

Mission

• To develop knowledge-based integrated approaches to detect, control, and prevent the emergence of influenza viruses (particularly HPAI)

  Three specific aims/Eight major objectives

  • Aim 1: Molecular aspects of interspecies transmission and pathogenesis of avian influenza in terrestrial poultry
  • Aim 2: Risk factors in LBMs and supply flocks, AI Surveillance in LBMs, supply flocks and waterfowl, Education/Biosecurity, Composting.
  • Aim 3: Diagnostics and Vaccines
AI CAP - AIM 1 - Two objectives

• AIM 1: To determine the basis for adaptation of influenza A viruses from wild aquatic birds to land-based poultry.
  – Objective 1a. Define the role of intermediate hosts, in emergence of influenza A viruses in chickens and turkeys.
  – Objective 1b. Determine the molecular basis of transmission of flu A viruses in land-based avian intermediate hosts (reverse genetics.)
  – Objective 2. Determine the molecular parameters for detecting and diagnosing avian influenza viruses in chickens & turkeys affected by co-infections by other common respiratory and immunosuppressive viruses
• AIM 2: To determine the dynamics and evolution of influenza A viruses in the LBM system, wild birds and game birds across the U.S., to characterize risk factors that contribute to the perpetuation of viruses in these populations, and to bring forth educational programs aimed at preventing, containing and controlling the spread of AI in these systems and thereby protect the commercial poultry industry.
AI CAP - AIM 2 - Four objectives

- **AIM 2:**
  - Objective 3: Characterization of the risk factors associated with LBM systems in CA, MN, and NY
  - Objective 4: Establish and maintain a coordinated, systematic type A influenza virus surveillance network in wild birds populations in the U.S.
  - Objective 5: Build effective education programs for outreach & extension.
  - Objective 6: Develop methods of poultry pathogen inactivation and create a network of local expertise for the disposal of catastrophic mortality.
AI CAP - AIM 3 - Two objectives

- **AIM 3: To develop critical diagnostic tests and vaccines for avian influenza**
  - **Objective 7: Diagnosis of AI**
  - **Goal: Provide better diagnostic tools for avian influenza for:**
    - Rapid Diagnostics
    - Improved penside diagnostics
    - Faster characterization of AI isolates
    - Improved RRT-PCR
    - Tools to implement DIVA strategy
    - ELISA tests for Neuraminidase
AI CAP - AIM 3 - Two objectives

- AIM 3: To develop critical diagnostic tests and vaccines for avian influenza
  - Objective 8: Vaccines
    - Evaluation of Antigenic Drift in Mexican Avian Influenza Viruses Using DNA Vaccines
    - Evaluation of Avian Influenza Low Pathogenic H5 and H7 Subtype Isolates for Suitability as Vaccine Seed Strains for Emergency Vaccine Stockpiles
    - Novel Vector Vaccines to Control Avian Influenza
    - Control of Avian Influenza (AI) in flocks with vaccines generated by reverse genetics.
    - Replication-defective Adenovirus Recombinant Vaccine to Protect Chickens against Avian Influenza
Prevention and Control of Avian Influenza in the U. S.
USDA-NRI: Participating States

QuickTime™ and a TIFF (Uncompressed) decompressor are needed to see this picture.
Prevention and Control of Avian Influenza in the U. S.
USDA-NRI: Participating Institutions/Investigators

Richard Slemons
Yehia M. Saif

Carol Cardona
Tim Carpenter
Peter Woolcock, (UC-Fresno)
Sharon Hietala

Joseph Giambrone
Haroldo Toro
Vicky Van Santen
Frederic J. Hoerr

Kent van Kampen
De-Chu C. Tang
Peng Gao

Daniel Perez
Nathaniel Tablante
Subbiah Elankumaran
Vikram Vakharia

Blanca Lupiani
Sanjay Reddy
John El Attrache
Ellen Colisson
Luc Berghman
Ian Tizard

Maricarmen Garcia
Mark W. Jackwood

2/10/2006
Prevention and Control of Avian Influenza in the U. S.

USDA-NRI: Participating Institutions/Investigators

Eva Wallner-Pendleton
Huanguang Lu
Patricia Dunn
Daniel P. Shaw

Jack Gelb
Brian S. Ladman
Sandra S. Cloud
John K. Rosenberger
Conrad R. Pope

Eric Benson
Robert Alphin
George Malone
Mariano Salem

Calvin Keeler

David Suarez
Erica Spackman

Dave Halvorsen

Mazhar Kahn
David Gottfried

Christopher Olsen
Alexander Karasin

SEPRL
Dave Halvorsen

Penn State
M

Georgia Tech Research Institute

Penn
Prevention and Control of Avian Influenza in the U. S.
USDA-NRI: Administrative Structure

Program Director
• Daniel R. Perez UMD

Co-Program Director
• Richard Slemons OSU

Executive Committee
• Carol Cardona, UC-Davis
• David Suarez, SEPRL, ARS
• Haroldo Toro, Auburn U.
• Ruben Donis, CDC
• Nathaniel Tablante, UMD

Scientific Advisory Board
• Charles Beard, USPE
• Bruce Stewart-Brown, Purdue Farms
• Kanta Subbarao, NIH-NIAID
• David Swayne, SEPRL, USDA, ARS
• Ron Fouchier, EMC
• Michael Perdue, WHO, CDC

Stakeholder Panel
• Fidelis Hegngi, APHIS
• Dennis Senne, NVSL, USDA, ARS
• Chuck Hofacre, AAAP
• Jim Sunmer, UPEEC
• Steve Gemperle, UEP, PePa
• George Watts, NCC
• Michael Rybolt, NTF

Regional Coordinators
• Elizabeth Krushinskie, USPE
• Eric Gingerich, Univ. Pennsylvania
• Dave Halvorson, Univ. Minnesota
## Prevention and Control of Avian Influenza in the U. S.
### USDA-CAP Funding Year 1

### BUDGET YEAR 1

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### Grand Total Subcontracts First Year as of 01/04/05
- **$1,217,457.30**

### Item J. All Other Direct Costs Year 1 (Total Direct Subs + Total ID Subs + SAB budget + Budget Reserves)
- **$1,334,294.11**

### Item K. Total Direct Costs Year 1 (Item J + Perez, UMD portion of project)
- **$1,555,676.85**

### Item L. F&A/Indirect Costs (25% of total direct of UMD portion + ID costs charged by UMD to subcontracts + ID costs on SAB budget)
- **$110,989.84**

### Item O. Total Amount of This Request (Year 1)
- **$1,666,666.68**
<table>
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**Requested Total Direct costs**: $1,461,833.77

**Requested Total Direct costs to subcontracts**: $1,185,136.72

**Total D&ID costs**: $1,790,746.37

**Target Total Direct Costs**: $1,197,266.84

**Target ID costs to subcontracts**: $269,385.04

**Target D&ID costs**: $1,496,583.55

**UMD portion**: $111,632.47

**Total ID costs UMD**: $27,908.12

**Total D&ID costs UMD**: $139,540.59

**Target ID costs UMD charged to subcontracts**: $37,414.59

**Target Total D&ID costs UMD including ID costs**: $176,955.18

**TOTAL MAXIMUM CURRENTLY REQUESTED**: $1,930,286.96

**TOTAL MAXIMUM ALLOWED**: $1,673,538.73
THANK YOU!