

# Prevention and Control of Avian Influenza in the U.S.

**USDA CSREES N° 35605-15388**

**USDA - CSREES**

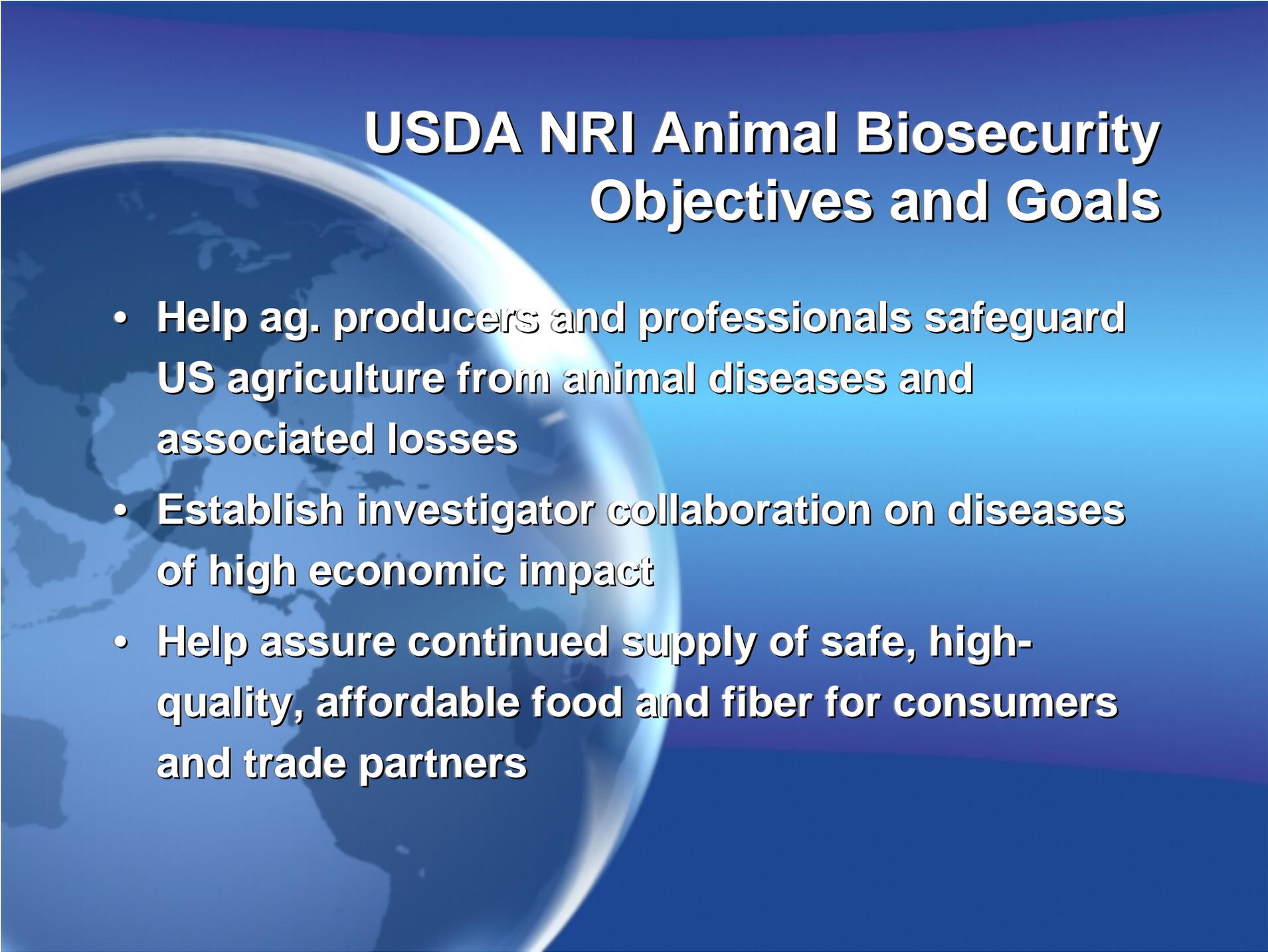
**NRI - CAP**

**Cooperative Agricultural Project: Animal and Plant Biosecurity**



Cooperative State  
Research, Education, and Extension Service





# **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**

## AI CAP - AIM 2 - Four objectives

- **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



## Prevention and Control of Avian Influenza in the U. S. USDA-NRI: Participating Institutions/Investigators



Richard Slemons  
Yehia M. Saif

QuickTime™ and a  
TIFF (Uncompressed) decompressor  
are needed to see this picture.

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



Joseph Giambrone  
Haroldo Toro  
Vicky Van Santen  
Frederic J. Hoerr

**vaxin**

Kent van Kampen  
De-Chu C. Tang  
Peng Gao



University of Maryland  
College Park Campus

Daniel Perez  
Nathaniel Tablante  
Subbiah Elankumaran  
Vikram Vakharia



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



Maricarmen Garcia  
Mark W. Jackwood

# Prevention and Control of Avian Influenza in the U. S. USDA-NRI: Participating Institutions/Investigators



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



Christopher Olsen  
Alexander Karasin



Mazhar Kahn



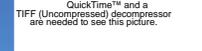
David Suarez  
Erica Spackman



Dave Halvorson



David Gottfried



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

Eric Benson  
Robert Alphin  
George Malone  
Mariano Salem

Calvin Keeler



Sherrill Davison  
Eric Gingerich  
Robert Eckroade

## 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									
Budget Total per Investigator		Year 1	Year 2	Year 3	TOTAL Direct	TOTAL ID Sub	TOTAL D + ID (lane M in each subcontract)	TOTAL ID UMD	
PI	Institution								
Olsen	Univ. Wisconsin	\$48,900.34	\$0.00	\$0.00	\$48,900.34	\$11,002.58	\$59,902.92		\$1,497.57
Toro	Auburn Univ.	\$45,000.78	\$0.00	\$0.00	\$45,000.78	\$10,125.18	\$55,125.95		\$1,378.15
Giambrone	Auburn Univ.	\$16,572.00	\$0.00		\$16,572.00	\$3,728.70	\$20,300.70		\$507.52
Khan	Univ. Connecticut	\$21,083.00	\$0.00	\$0.00	\$21,083.00	\$4,743.68	\$25,826.68		\$645.67
Keeler	Univ. Delaware	\$40,577.10	\$0.00	\$0.00	\$40,577.10	\$9,129.85	\$49,706.95		\$1,242.67
Gottfried	Georgia Tech Res. Inst.	\$53,691.93	\$0.00	\$0.00	\$53,691.93	\$12,080.68	\$65,772.61		\$1,644.32
Benson	Univ. Delaware	\$24,230.00	\$0.00	\$0.00	\$24,230.00	\$5,451.75	\$29,681.75		\$742.04
Davison	Univ. Pennsylvania	\$45,470.50	\$0.00	\$0.00	\$45,470.50	\$10,230.86	\$55,701.36		\$1,392.53
Slemons	Ohio State Univ.	\$125,962.52	\$0.00	\$0.00	\$125,962.52	\$29,407.13	\$155,369.65		\$2,084.00
Cardona	UC-Davis	\$138,794.59	\$0.00	\$0.00	\$138,794.59	\$32,615.15	\$171,409.74		\$2,084.00
Wallner	Penn State Univ.	\$49,358.00	\$0.00	\$0.00	\$49,358.00	\$11,105.55	\$60,463.55		\$1,511.59
Gelb	Univ. Delaware	\$48,540.00	\$0.00	\$0.00	\$48,540.00	\$10,921.50	\$59,461.50		\$1,486.54
Garcia	Univ. Georgia	\$39,766.32	\$0.00	\$0.00	\$39,766.32	\$8,947.42	\$48,713.74		\$1,217.84
Lupiani	Texas A&M	\$118,996.00	\$0.00	\$0.00	\$118,996.00	\$26,774.10	\$145,770.10		\$3,644.25
Spackman	SPRL-ARS	\$16,000.00	\$0.00	\$0.00	\$16,000.00	\$3,600.00	\$19,600.00		\$490.00
Suarez	SPRL-ARS	\$68,700.00	\$0.00	\$0.00	\$68,700.00	\$15,457.50	\$84,157.50		\$2,103.94
Halvorson	Univ. Minnesota	\$52,078.00	\$0.00	\$0.00	\$52,078.00	\$11,717.55	\$63,795.55		\$1,594.89
Saif	Ohio State Univ.	\$38,120.04	\$0.00	\$0.00	\$38,120.04	\$8,577.01	\$46,697.05		\$1,167.43
<b>Total Direct Costs</b>		<b>\$991,841.12</b>	<b>\$0.00</b>	<b>\$0.00</b>	<b>\$991,841.12</b>				
						<b>Total Indirect Costs</b>	<b>\$225,616.18</b>		<b>\$26,434.95</b>
<b>Grand Total Subcontracts First Year as of 01/04/05</b>							<b>\$1,217,457.30</b>		
Perez	Univ. Maryland	\$221,392.71	\$0.00	\$0.00	\$221,392.71		\$221,392.71		\$55,348.18
SAB	Other Direct Costs Year	\$19,000.00	\$0.00	\$0.00	\$19,000.00		\$19,000.00		\$4,750.00
Budget Reserve	Other Funds Requested Year 1	\$80,719.60	\$0.00	\$0.00	\$80,719.60	\$0.00	\$80,919.60		\$20,179.90
Budget Reserve	Uncomm. Funds Requested Year 1	\$17,107.24	\$0.00	\$0.00	\$17,107.24	\$0.00	\$17,107.24		\$4,276.81
<b>Item J. All Other Direct Costs Year 1 (Total Direct Subs + Total ID Subs + SAB budget + Budget Reserves)</b>								<b>\$1,334,284.14</b>	
<b>Item K. Total Direct Costs Year 1 (Item J + Perez, UMD portion of project)</b>								<b>\$1,555,676.85</b>	
<b>Item L. F&amp;A/Indirect Costs (25% of total direct of UMD portion + ID costs charged by UMD to subcontracts + ID costs on SAB budget)</b>								<b>\$110,989.84</b>	
<b>Item O. Total Amount of This Request (Year 1)</b>								<b>\$1,666,666.68</b>	

# AICAP Funding Overview Year 2

Name of investigator	New proposal	Renewal	Budget (direct costs only)	Does the budget need to be adjusted?	New Budget
Lee	X		\$54,236.64		\$54,236.64
Toro		X	\$87,607.00		\$87,607.00
Giambrone		X	\$11,772.00		\$11,772.00
Khan	X		\$32,228.00	\$32,228.00	\$0.00
Keeler		X	\$41,423.40		\$41,423.40
Gottfried		X	\$77,305.12		\$77,305.12
Benson		X	\$72,275.00	\$7,000.00	\$65,275.00
Davison*		X	\$45,470.50		\$45,470.50
Siemons		x	\$153,962.48		\$153,962.48
Cardona		x	\$149,878.05	\$149,878.05	\$0.00
Wallner		X	\$49,357.00		\$49,357.00
Gelb		X	\$44,273.30		\$44,273.30
Garcia		X	\$63,567.39		\$63,567.39
Pastey	X		\$41,206.25		\$41,206.25
Schat	X		\$26,591.00	\$26,591.00	\$0.00
Vakharia		X	\$71,577.75		\$71,577.75
Elankumaran		X	\$67,458.90		\$67,458.90
Lupiani		X	\$138,500.00	\$60,000.00	\$78,500.00
Spackman		NO	\$0.00		\$0.00
Suarez		NO	\$0.00		\$0.00
Halvorson		Pending	\$45,486.00		\$45,486.00
Tablante		X	\$40,893.75	\$1,000.00	\$39,893.75
Saif		x	\$46,764.24		\$46,764.24
Olsen		NO	\$0.00		\$0.00
Budget reserve			\$100,000.00		\$100,000.00
<b>Requested Total Direct costs</b>			<b>\$1,461,833.77</b>		<b>\$1,185,136.72</b>
<b>Requested Total ID costs to subcontracts (estimate)</b>			<b>\$328,912.60</b>		<b>\$266,655.76</b>
<b>Total D&amp;ID costs</b>			<b>\$1,790,746.37</b>		<b>\$1,451,792.48</b>
<b>Target Total Direct Costs</b>			<b>\$1,197,266.84</b>		<b>\$1,197,266.84</b>
<b>Target ID costs to subcontracts</b>			<b>\$269,385.04</b>		<b>\$269,385.04</b>
<b>Target D&amp;ID costs</b>			<b>\$1,496,583.55</b>		<b>\$1,496,583.55</b>
<b>UMD portion</b>			<b>\$111,632.47</b>		<b>\$111,632.47</b>
<b>Total ID costs UMD</b>			<b>\$27,908.12</b>		<b>\$27,908.12</b>
<b>Total D&amp;ID costs UMD</b>			<b>\$139,540.59</b>		<b>\$139,540.59</b>
<b>Target ID costs UMD charged to subcontracts</b>			<b>\$37,414.59</b>		<b>\$37,414.59</b>
<b>Target Total D&amp;ID costs UMD including ID costs</b>			<b>\$176,955.18</b>		<b>\$176,955.18</b>
<b>TOTAL MAXIMUM CURRENTLY REQUESTED</b>			<b>\$1,930,286.96</b>		<b>\$1,591,333.07</b>
<b>TOTAL MAXIMUM ALLOWED</b>			<b>\$1,673,538.73</b>		<b>\$1,673,538.73</b>

2/10/2006

# THANK YOU!



2/10/2006

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