BIOGRAPHICAL SKETCH

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NAME
Talbot, Helen Keipp Bredenberg

eRA COMMONS USER NAME
ktalbot

POSITION TITLE: Assistant Professor, Infectious Diseases

EDUCATION/TRAINING (Begin with baccalaureate or other initial professional education, such as nursing, include postdoctoral training and residency

INSTITUTION AND LOCATION	DEGREE *(if applicable)*	MM/YYYY	FIELD OF STUDY
University of Illinois, Urbana-Champaign, IL	B.S.	1990-1995	Engineering, Ceramics
University of Illinois, Urbana-Champaign, IL	B.S.	1990-1995	Physiology
Medical College of Georgia, Augusta, GA	M.D.	1995-1999	Medicine
Vanderbilt University, Nashville, TN	M.P.H.	2005-2007	Public Health

A. Personal Statement

The focus of my research is on viral respiratory illnesses in older adults with a special interest in the prevention of illness through immunization. I began performing inpatient hospital influenza surveillance for adults in 2006 and then received my K award from NIAID and my R01 from NIA to work on studies of influenza. These studies have estimated the burden influenza hospitalizations, the utility of rapid antigen influenza diagnostics for older hospitalized adults, and the effectiveness of influenza vaccines for the prevention of hospitalizations, the comparative effectiveness for different manufacturing processes and vaccines, and frailty in the test-negative study design. Additionally we have been able to evaluate the burden of hospitalizations due ot respiratory syncytial virus and human metapneumovirus in older adults. Currently we are one of the sites for the inpatient influenza vaccine effectiveness network sites. Hence we are continuing to collect data on viral respiratory diseases in older adults allowing for multiple projects for trainees interested in aging research.

B. Positions and Honors

1999 – 2002 Internal Medicine Residency, Vanderbilt University Medical Center, Nashville, TN
2002 – 2003 Chief Resident, Internal Medicine, Vanderbilt University Medical Center, Nashville, TN
2003 – 2006 Fellow, Infectious Diseases, Vanderbilt University Medical Center, Nashville, TN
2006 – 2008 Instructor, Infectious Diseases, Vanderbilt University Medical Center, Nashville, TN
2008 – 2016 Assistant Professor, Infectious Diseases, Vanderbilt University, Nashville, TN
2016 – Present Associate Professor, Infectious Diseases, Vanderbilt University, Nashville, TN

Professional Memberships

2003 – Present Member, Infectious Disease Society of America
2008 – Present Member, American Geriatric Society
2012 – Present Board of Directors, National Foundation for Infectious Diseases

Honors

2005 NIH Clinical Research Loan Repayment Program
2006 Outstanding Fellow Award, Vanderbilt University Division of Infectious Diseases
2008 Awarded the NFID scholarship for the 2008 ADVAC course
2008 International Advanced Vaccinology (ADVAC) Course in France for 2008
2009 IDSA ERF/NFID ASP-IDSA Young Investigator Award in Geriatrics
2010 Maurice R. Hilleman Early-Stage Career Investigator Award by NFID

C. Contribution to Science

1. Determining Influenza Vaccine Effectiveness**:** Influenza vaccine was recommended for use in high-risk patients prior to any randomized controlled-trials in high risk patients. Determining influenza vaccine effectiveness has been difficult due to many biases. From a methodologic standpoint we have found the test-negative study design to have the least bias introduced for observational studies. We have worked with our biostatisticians how to minimize the effects of multiple variables introduced into the model when the number of

hospitalizations is rare. My role has been the primary investigator for each of these studies including working with our biostatisticians to determine the correct analytic methods, obtaining funding and designing data collection instruments.

A. Chen Q, Griffin MR, Nian H, Zhu Y, Williams JV, Edwards KM, Talbot HK. Influenza Vaccine Prevents Medically-Attended Influenza-Associated Acute Respiratory Illness in Adults 50 Years or Older. *Journal of Infectious Diseases,* 2014 Oct 21. pii: jiu578. PMID: 25336724 PMCID: PMC4432432
B. Talbot HK, Nian H, Zhu Y, Chen Q, Williams JV, Griffin MR. Clinical Effectiveness of Split-Virion Versus Subunit Trivalent Influenza Vaccines in Older Adults. Clin Infect Dis. 2015 Feb 18. pii: civ019. PMID: 25697739 PMCID: PMC4447778
C. Chen Q, Griffin MR, Nian H, Zhu Y, Williams JV, Edwards KM, Talbot HK. Influenza Vaccine Prevents Medically Attended Influenza-Associated Acute Respiratory Illness in Adults Aged ≥50 Years. J Infect Dis. 2014 Oct 21. pii: jiu578. PMID: 25336724 PMCID: PMC4432432
D. Talbot HK, Zhu Y, Chen Q, Williams JV, Thompson MG, Griffin MR. Effectiveness of influenza vaccine for preventing laboratory-confirmed influenza hospitalizations in adults, 2011-2012 influenza season. Clinical Infectious Diseases. 2013 56 (12) 1774-7. PMID: 23449269

2. Identification of Influenza: Extremes of age often present atypically with influenza. These studies looked at the presentation of influenza in adults to either the Emergency Department or Hospital. These studies showed that older adults often present atypically and the diagnosis of influenza is often missed. For both of these studies, I helped write the protocol, designed the data collection system, and assisted in the analyses.

A. Self WH, McNaughton CD, Grijalva CG, Zhu Y, Chappell JD, Williams JV, Talbot HK, Shay DK, Griffin MR. Diagnostic performance of the BinaxNow Influenza A&B rapid antigen test in ED patients. American Journal of Emergency Medicine. (2012) May: 18(5): 863-865.
B. Talbot HK, Williams JV, Zhu Y, Poehling KA, Griffin MR, Edwards KM. Routine Diagnostic Methods Fail to Identify Influenza in Hospitalized Older Adults. *Infect Control Hosp Epidemiol* 2010; 31(7) 638-8. PMC3715378.

3**.** Performing Influenza Vaccine Efficacy Studies: I have participated in multiple clinical trials to determine immunologic responses and also influenza vaccine efficacy. My role on each of these projects was the primary investigator or the local primary investigator.

A. DiazGranados CA, Dunning AJ, Kimmel M, Kirby D, Treanor J, Collins A, Pollak R, Christoff J, Earl J, Landolfi V, Martin E, Gurunathan S, Nathan R, Greenberg DP, Tornieporth NG, Decker MD, Talbot HK. Efficacy of high-dose versus standard-dose influenza vaccine in older adults. *N Engl J Med*. 2014; 371(7):635-45. PMID: 25119609
B. DiazGranados CA, Dunning AJ, Jordanov E, Landolfi V, Denis M, Talbot HK. High-Dose Trivalent Influenza Vaccine Compared to Standard Dose Vaccine in Elderly Adults: Safety, Immunogenicity and Relative Efficacy during the 2009-2010 Season Vaccine. *Vaccine*, 2013; (31)6:861-6. PMID: 23261045
C. Talbot HK, Rock MR, Johnson C, *et al*. Immunopotentiation of Trivalent Influenza Vaccine When Givien with VAX102, a Recombinant Influenza M2e Vaccine Fused to the TLR5 Ligand Flagellin. *PLoS ONE* 2010; 5(12):e14442. PMID: 21203437 PMCID: PMC3010987
D. Talbot HK, Keitel W, Cate TR, Treanor J, Campbell, J, Brady RC, Graham I, Dekker CL, Ho D, Winokur P, Walter E, Bennet J, Formica N, Hartel G, Skeljo M, Edwards KM. Immunogenicity, Safety and Consistency of New Trivalent Inactivated Influenza Vaccine. *Vaccine* 2008; 26(32): 4057-61 PMID: 18602726 PMCID: PMC2605420
E. Bernstein DI, Edwards KM, Dekker CL, Belshe R, Talbot HK, Graham IL, Noah DL, He F, Hill H. Effects of Adjuvants on the Safety and Immunogenicity of an Avian Influenza (H5N1) Vaccine in Adults. *Journal of Infectious Diseases* 2008; 197(5):667-675. PMID: 18260764

4. Immune Responses to Influenza Vaccine: Influenza vaccine provides a moderate amount of protection in older adults. We have worked with the CDC and other groups in the past to explore different aspects of the immune response to immunization. These studies are necessary bridges to building a better vaccine in older adults. One of the most significant findings has been that immune responses are predicted by pre-immunization vaccine responses suggesting that pre-immunization immune responses may predict integrity

of the immune system or in other cases, immune senescence. My role on these projects included the clinical design of the study, overseeing recruitment, enrollment, data collection, and analyses.

A. Reber AJ, Kim J, Biber R, Chirkova T, Cao W, Jefferson S, Gross F, Veguilla V, Steward-Clark E, Gillis E, Meece J, Bai Y, Tatum H, Hancock K, Stevens J, Spencer S, Chen J, Gargiullo P, Braun E, Talbot HK, Coleman LA, Griffin MR, Belongia E, Rock M, Shay DK, Katz J, Sambhara S. Pre-existing Immunity, More than Aging, Influences Influenza Vaccine Responses, Open Forum Infectious Diseases, in press 2015. PMID: 26380344 PMCID: PMC4567097
B. Talbot HK, Nian H, Zhu Y, Chen Q, Williams JV, Griffin MR. Clinical Effectiveness of Split-Virion compared to Subunit Trivalent Influenza Vaccines in Older Adults. *Clinical Infectious Diseases*, in press 2015. PMID: 25697739 PMCID: PMC4447778
C. Talbot HK, Coleman LA, Crimin K, Zhu Y, Rock MT, Meece J, Shay DK, Belongia EA, Griffin MR. Association between obesity and vulnerability and serologic response to influenza vaccination in older adults. *Vaccine*, 2012. 30(26):3937-43. PMID: 22484350 PMCID: PMC3770527
D. Talbot HK, Rock MR, Johnson C, *et al*. Immunopotentiation of Trivalent Influenza Vaccine When Givien with VAX102, a Recombinant Influenza M2e Vaccine Fused to the TLR5 Ligand Flagellin. *PLoS ONE* 2010; 5(12):e14442. PMID: 21203437 PMCID: PMC3010987

Complete List of Publications

55 peer-reviewed publications
http://www.ncbi.nlm.nih.gov/sites/myncbi/helen.talbot.1/bibliography/41148758/public/?sort=date&direction=ascending

D. Research Support

Ongoing Research Support

1U01IP000979-01 Talbot (PI) 08/01/2015 – 07/31/2020
CDC – HAIVEN network
Determining Influenza Vaccine Effectiveness (DIVE)
This study will perform influenza surveillance in hospitalized adults in order to perform vaccine effectiveness studies and be available for pandemic preparedness as needed.

1R03AI113858-01A1 Talbot (PI) 02/15/2015- 01/31/2017
NIH, NIAID
Hospital Admissions & Emergency Room Visits in Adults Associated with Influenza C
This project is exploring the possibility that Influenza C may cause disease in older adults.
Role: PI

Pneumococcal Colonization in Older Adults
CDC/EIP Talbot (local, PI) 04/01/2015 – 03/31/2017
The Acute Bacterial Surveillance core of the Emerging Infections Program is looking to determine pneumococcal bacteria colonization rates in adults ≥65 years of age.

1R01AG043419-01 Talbot (PI) 07/01/2013 – 06/30/2016
NIH, NIA
Effectiveness of the Influenza Vaccine in the Aging Population
The goal of this project is to evaluate influenza vaccine effectiveness in older adults. Using six years of prospectively collected data, this grant will look vaccine effectiveness in older adults, evaluate the current case positive – control negative methodology, and look at differences in vaccine manufacturing processes.
Role: PI

MedImmune Talbot (coordinating PI) 08/01/2015 – 6/30/2017
This study is a Phase II study evaluating the safety and immunogenicity of an RSV vaccine in older adults.

Abt Talbot (local PI) 05/04/15 -- forward
CDC/Abt, Pandemic Preparedness Planning for Outpatient Influenza Surveillance
Prepare protocols and IRB applications for potential studies in case of a new influenza pandemic.
Role: Local PI

Sanofi Pasteur Talbot (local PI) 08/01/2013 – 06/30/2016
CDiffense
The goal of this project is determine the efficacy of a new clostridium difficile vaccine. This is a multi-center Phase III study.
Role: Local PI.

MedImmune Griffin (PI) 08/01/2013 – 6/30/2016
ICICLE
The goal of this project is to determine the relative effectiveness of the quadrivalent, live-attenuated influenza vaccine. This study is a Phase IV study
Role: Co-Investigator

Gilead Talbot (local PI) 11/01/2015 – 6/30/2016
Phase II study evaluating a proteus inhibitor for the treatment of RSV in hospitalized adults.
Role: Local PI

Completed Research Support within the last 3 years

MedImmune Talbot (coordinating PI) 01/01/2015 – 6/30/2015
This study is a Phase Ib study looking at a new RSV vaccine in older adults.

AztraZeneca/MedImmune Talbot (local PI) 02/01/2012 - 09/30/2014
An Observational Study to Assess Respiratory Syncytial Virus (RSV)-associated Illness in Adults with Chronic Obstructive Pulmonary Disease (COPD) and/or Congestive Heart Failure (CHF)
The goal of this project is to investigate the burden of respiratory syncytial virus in older adults with chronic pulmonary or cardiac disease.
Role: local PI