

CURRICULUM VITAE April 5, 2017

NAME: James Earl Crowe, Jr., M.D.

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BIRTH: August 14, 1961; Nashville, TN, USA

CITIZENSHIP: United States

PERSONAL: Married to Elizabeth H. Crowe, MD, since May 1987
Son, Stephen Crowe, age 26; Daughter, Catherine Crowe, age 23

UNIFORMED SERVICE: Active duty, U.S. Public Health Service, Nov 1990 – Oct 1995;
Inactive Reserves, U.S. Public Health Service, Nov 1995 – Mar 2010

PERSONAL INTERESTS: Endurance sports include ultrarunning – Western States and Arkansas 100 mile races, Grand Canyon Rim2Rim2Rim, Comrades 89k, South Africa, and others, cycling and multisport; three-time Ironman finisher. Art collecting, Haitian, tribal and outsider art.

EDUCATION AND RESEARCH TRAINING:

1979 – 1983 B.S., *Magna Cum Laude*, Davidson College, Davidson, NC

1983 – 1987 M.D., U.N.C. School of Medicine, Chapel Hill, NC

1987 – 1990 Pediatric internship and residency, N.C. Memorial Hospitals (University of North Carolina, Chapel Hill, N.C.)

1990 – 1993 Medical Staff Fellow, Respiratory Viruses Section, Laboratory of Infectious Diseases, NIAID, NIH, Bethesda, MD. Mentors: Robert Chanock and Brian Murphy

1993 – 1995 Sr. Research Investigator, Respiratory Viruses Section, Laboratory of Infectious Diseases, NIAID, Bethesda, MD

1995 – 1996 Clinical Fellowship, Infectious Diseases, (as Instructor in Pediatrics), Division of Pediatric Infectious Diseases, Department of Pediatrics, Vanderbilt University Medical Center, Nashville, TN

LICENSURE: Tennessee Medical License #27245; 8/18/1995 to present; current through 8/31/2017.

DEA registration # BC4629955 (2,2N,3,3N,4,5); current through 08/31/2019.

North Carolina Medical license, 1987 – 1997; I chose voluntarily to not renew my NC license, because I was no longer practicing in that state.

BOARD CERTIFICATION: American Board of Pediatrics (ABP ID # 217691)

General Pediatrics, Certificate No. 44335, through 12/31/2021
Original certification, 11/13/1990

Pediatric Infectious Diseases, Certificate No. 538, through 12/31/2024
Original certification, 08/05/1997

ACADEMIC APPOINTMENTS:

- 1996-1996 Instructor, Department of Pediatrics, Division of Pediatric Infectious Diseases, Vanderbilt University Medical Center, Nashville, TN
- 1996 – 2001 Assistant Professor, Department of Pediatrics, Division of Pediatric Infectious Diseases, Vanderbilt University Medical Center, Nashville, TN
- 1998 – 2005 Assistant Professor of Microbiology and Immunology, Vanderbilt University Medical Center, Nashville, TN
- 2001 – 2004 Associate Professor (with tenure), Department of Pediatrics, Division of Pediatric Infectious Diseases, Vanderbilt University Medical Center, Nashville, TN
- 2004 – present Professor (with tenure), Department of Pediatrics, Division of Pediatric Infectious Diseases, Vanderbilt University Medical Center, Nashville, TN
- 2005 – 2006 Associate Professor of Microbiology and Immunology, Vanderbilt University Medical Center, Nashville, TN
- 2006 – Professor of Pathology, Microbiology and Immunology (department was termed Microbiology and Immunology from 2006-11), Vanderbilt University Medical Center, Nashville, TN

ENDOWED CHAIRS

- 2005 – 2013 Ingram Professor of Cancer Research, Vanderbilt University
- 2013 – present Ann Scott Carell Chair, Vanderbilt University Medical Center

HOSPITAL APPOINTMENTS

- 1990 Attending Physician, Pediatric Clinic, Wake Medical Center, Raleigh, NC (Affiliate Teaching Hospital with UNC-CH).
- 1990 Attending Physician, Tarrboro, NC

- 1996 – Vanderbilt University Medical Center /Vanderbilt Children’s Hospital; Attending Physician, Pediatrics
- 1999 – 2005 Stallworth Rehabilitation Hospital, Nashville, TN, Consulting Privileges, Infectious Diseases.

OTHER APPOINTMENTS AT VANDERBILT

- 1999 – present Associate Member, Experimental Therapeutics Research Program in the Vanderbilt-Ingram Cancer Center
- 2001 – present Scientific Director, Flow Cytometry Core Laboratory, Vanderbilt University Medical Center, Nashville, TN
- 2003 – present Scientific Director, Immunology Core Laboratory, Vanderbilt University
- 2003 – present Scientific Director, Flow Cytometry and Cell Sorting Shared Resource of the Vanderbilt-Ingram Cancer Center
- 2003 – 2011 Associate Director, Immunopathogenesis Core Laboratory, Center for AIDS Research, Vanderbilt
- 2004 – present Senior Faculty Fellow, Vanderbilt Institute for Integrative Biosystems Research and Education
- 2004 – 2010 Director, Vanderbilt Alliance for Nanomedicine (Vanderbilt University Medical Center, Vanderbilt University, and Oak Ridge National Laboratory)
- 2005 – present Director, Vanderbilt Vaccine Center (formally the Vanderbilt Program in Vaccine Sciences)
- 2005 – present Investigator, Digestive Diseases Research Center, Vanderbilt
- 2005 – 2011 Faculty member, Program in Human Genetics, Vanderbilt
- 2009 – present Faculty member, Chemical and Physical Biology Program
- 2012 – 2015 Scientific Director, Vanderbilt Technologies for Advanced Genomics (VANTAGE)
- 2013 – 2014 Executive Committee of the Executive Faculty, Vanderbilt Medical School of Medicine, Member

AWARDS AND HONORS

- 1979 Edward Stuart Scholarship (full 4-year merit scholarship), Davidson College, Davidson, NC
- 1983 *Phi Beta Kappa, Omicron Delta Kappa, Alpha Epsilon Delta*, Davidson College
- 1990 Outstanding Pediatric Resident, Wake Medical Center, Raleigh, NC
- 1990 Edward Curnen Award, UNC Pediatrics

- 1996 Pfizer Faculty Scholar, Pfizer, Inc., New York, NY
- 1998 Basil O'Connor Scholar Research Award, March of Dimes
- 1999 Dade MicroScan Young Investigator Award, American Society for Microbiology
- 1999 Turner Scholar Award, Vanderbilt University
- 2000 Young Investigator Award, Pediatric Infectious Diseases Society
- 2001 Young Investigator Award, Society for Pediatric Research
- 2002 Judson Daland Prize for Outstanding Achievement in Patient-Oriented Clinical Research, American Philosophical Society, Philadelphia, PA
- 2005 Teacher of the Year Award, Vanderbilt University School of Medicine Interdisciplinary Graduate Program
- 2005 Oswald Avery Award for Early Achievement, Infectious Diseases Society of America
- 2005 Burroughs Wellcome Fund Clinical Scientist Award in Translational Research
- 2006 E. Mead Johnson Award for Excellence in Pediatric Research, Society for Pediatric Research
- 2006 America's Top Pediatricians, Consumers Research Council
- 2010
- 2007 Outstanding Investigator Award, American Federation for Medical Research
- 2007 F. Peter Guengerich Award for Mentoring Postdoctoral Fellows, Vanderbilt University Medical Center
- 2007 Ernest W. Goodpasture Faculty Research Award, Vanderbilt University Medical Center
- 2007 Chancellor's Research Award, Vanderbilt University
- 2008 Teacher of the Year Award, Vanderbilt University School of Medicine Interdisciplinary Graduate Program
- 2010 Norman J. Siegel New Member Outstanding Science Award, American Pediatric Society
- 2012 Mentor of the Year Award, Vanderbilt Postdoctoral Association
- 2016 John H. Exton Award for Research Leading to Innovative Biological Concepts, Vanderbilt University Medical Center
- 2017 Samuel Rosenthal Prize for Excellence in Academic Pediatrics, Samuel Rosenthal Foundation
- 2017 Stanley J. Korsmeyer Award, American Society for Clinical Investigation

PROFESSIONAL ORGANIZATIONS

Elected Fellowship/Membership

- 1994 American Society of Microbiology
- 1997 American Society for Virology; Full Member
- 1997 Infectious Diseases Society of America member; 2007 Fellow
- 1998 Society for Pediatric Research; 2009 – 2012 Elected Council Member
- 1999 American Association of Immunologists [FASEB]
- 2003 American Federation for Medical Research
- 2004 American Society for Clinical Investigation, Fellow
- 2009 Association of American Physicians, Fellow
- 2010 American Pediatric Society, Fellow
- 2010 American Association for the Advancement of Science, Fellow
- 2010 American Academy of Microbiology, Fellow
- 2014 National Academy of Medicine, Elected Member

Professional Societies

Pediatric Infectious Diseases Society, since 1996

International Society for Vaccines, since 2008

HIV Medicine Association, since 2000

Society for Mucosal Immunology, since 2007

The Antibody Society, since 2009

International Society for Infectious Diseases, since 2014

American Society for Human Genetics, since 2017.

NAMED INVITED LECTURES

2005 Henry Shinefield Lecture, CDC - National Immunization Program, Clinical Immunization Safety Assessment (CISA) Network National Meeting, June 13 – 14, 2005, Nashville, TN.

2006 Danny Thomas Lecture, St. Jude Children's Research Hospital, Memphis, TN; June 22, 2006.

2007 Jack Light Lecture, Cedars Sinai Medical Center/UCLA Pediatrics, Los Angeles, CA; September 27, 2007.

2013 The Edwin Lennette Lecturer, American Society for Virology 32nd Annual Meeting, Pennsylvania State University, July 24, 2013.

2014 23rd Alexis S. Hartmann M.D. Visiting Professor, Washington University at St. Louis, March 27 – 28, 2014.

2016 Louis A. Bloomfield Memorial Lecture, Case Western Reserve University, Cleveland, Ohio, August 31, 2016.

PROFESSIONAL ACTIVITIES

Biotech

Founder, Corbeau Biotech LLC, Nashville, TN, 2010 – present

Vanderbilt University Committee Activity

- Member, Vanderbilt Institutional Biosafety Committee, 2002 – 2005.
- Chair, Vanderbilt Institutional Biosafety Committee, 2003 – 2005.
- Member, Vanderbilt Animal Care Committee, 2000 – 2003.
- Member, Department of Pediatrics Appointments and Promotion Committee, 2003 – present.
- Member, Oversight Committee of the Molecular Recognition Core Laboratory 1998 – 2006.
- Member, Pediatric Infectious Diseases Fellowship RRC Committee 1996 – 2005.
- Director, Clinical Fellowship Program, Pediatric Infectious Diseases, 2007 – 2009.
- Interviewer, Medical School Admissions Committee 1998 – 2002, 2013 – present, the Interdisciplinary Graduate Program, and the Medical Scientist Training Program 1998 to present.
- Faculty Advisor, numerous Pediatric Residents and Pediatric Infectious Diseases Fellows, 1996 – present
- Member, Vanderbilt Office of Research Taskforce on New Tools, 2002 – 2003.
- Head, Pediatric Research Training Taskforce, 2002.
- Chair, Search Committee, Pediatric Infectious Diseases Division Head, 2006 – 2007.
- Member of the Executive Faculty, Vanderbilt Medical Center, 2008 – present.
- Chair, Search Committee, Pediatric Allergy, Immunology, Rheumatology Division Head, 2006 – 2007.
- Chairman, Internal Advisory Board, Vanderbilt Institute for Clinical and Translational Research (VICTR) (CTSA); member 2008 – present; Chair 2009 – 2011, 2013.
- Executive Committee Member, Vanderbilt Institute for Nanoscale Science and Engineering (VINSE), 2008 – present.
- Workshop Leader, “Preparing Research Team Leaders”, Office of Biomedical Research Education and Training, June 2, 2009• Member, Search Committee, Petersen Chair, 2009, Department of Pediatrics.
- Member, Faculty Awards Committee of the School of Medicine, 2009 – 2012.
- Member, Genome Technology, Internal Advisory Committee, 2010 – 2012.
- Chair, Technology Review Committee of Vanderbilt University. August 2012 – June 2015; committee member 2010 – 2012.
- Member, Vanderbilt International Scholars Awards Program Committee, 2010
- Reviewer, Vanderbilt Clinical and Translational Science Program grant reviews, Sept. 7, 2010.
- Faculty Advisory Group Regarding Faculty Equity in Technology Transfer, 2011 – present.
- Member, Search Committee for the Chair of Biochemistry, 2011 – 12.
- Member, Search Committee for the Stahlman Professor of Pathology, Microbiology and Immunology, 2011.
- Genome Sciences Resource oversight committee, 2012.
- Search Committee for the Director of the Division of Infectious Diseases, 2012.

- Chancellor's Academic Planning Group for Trans-Institutional Programs, 2013.
- Search Committee for Vanderbilt leader in Human Genetics/Genomics Research, 2013 – 14.
- Genetics Executive Council, Vanderbilt University Medical Center, 2014 – present.
- Review Committee, Dorothy and Laurence Grossman Chair in Cardiology, 2014.
- Internal Advisory Committee for the Center for Structural Biology, 2015 – present.
- Faculty Advisory Committee, Vanderbilt Antibody and Protein Resource Core, 2015 – present.
- Review Committee, Elliott Chair in Ophthalmology, 2015.
- Review Committee, Stanley Cohen Innovation Fund awards, 2016.
- Chancellor's Biomedical Sciences Advisory Committee, 2016.
- Review Committee, Ernest W. Goodpasture Chair in Experimental Pathology for Translational Research, 2016.
- Co-chair, Fundamental Discovery Work Group, 2016 Vanderbilt Medical Center strategy development.

REVIEWER:

Scientific Reviewer for Sections, Government

Permanent Member, NIH Study sections

- NIAID Study Section Permanent Member, Microbiology and Infectious Diseases Research Committee (MIDRC), 2004 – 2008.

Chair, NIH Study Sections

- Ancillary Studies in Immunomodulation Clinical Trials, ZAI1-PA-I-(M1), January 19, 2010.
- Special Emphasis Panel/Scientific Review Group 2014/01 ZAI1 SV-A (J3) 1, "Innovation for HIV Vaccine Discovery (R01)", January 2014.
- Special Emphasis Panel, NIAID Clinical Trial Planning Grants (R34; PAR-13-150) and Implementation Grants and Cooperative Agreements (R01, PAR-13-149; U01, PAR-13-151); April 23, 2014.
- Special Emphasis Panel, NIAID, ZAI1-JKB-M-M1; May 18, 2016, Zika virus R21 grants.
- Member Conflict Topics in Virology, ZRG1 IDM-X 02 on 07/22/2016. Co-Chair.

Ad hoc Member, NIH and DoD Study Sections

- Hyperaccelerated Awards in Immune Modulation, NIAID Hyper-ID Scientific Review Group (SSS-J-01), Nov. 2002; Dec. 2002.
- NIDCD Otitis media RFA-DC-02-002 Study Section, 2002 and 2003.
- Impact of Microbial Interactions on Infectious Diseases, ZRG1 SSS-J 02 1, Nov. 2002.
- Experimental Virology Study Section, Feb. 2002.
- Regional Centers of Excellence for Biodefense, ZA11-KLW-M-M3, 2003.
- Biodefense and Emerging Infectious Diseases, ZAI1-AR-I-S1, May 2004.
- Innate and adaptive immunity of neonates, NIAID Special Study Section, May 2004.
- Innate and Adaptive Immune Systems in Premature Neonates, ZAI1-AWA-I-J2, July 28, 2004.
- Regional Centers of Excellence for Biodefense and Emerging Infectious Disease Research (RCEs), 2005.
- Immunity and Host-Defense (IHD), October 02-03, 2008.
- Challenge Grants Panel 9, 2009/10 ZRG1 IDM-C (58) R RFA09-003.
- Challenge Grants Editorial Panel 17, 2009/10 ZRG1 IMM-E (58) R.
- Microbiology and Infectious Diseases Research Committee, NIAID, 2009/10 ZAI1 AWA-M (S1) 1, July 2009.
- S10 Flow Cytometry Shared Instrumentation Grants, 2009/10 ZRG1 IMST-C (30), 7/09.
- Small Business Innovation Research (SBIR) Contract Proposals, NIAID, 2/24/10.

- Cell Biology and Molecular Imaging (IMST 16) Study Section, 3/11/10.
- HIV Vaccine Research and Design Program or HIVRAD (PAR-09-134), NIAID, NIH, 11/2010.
- NIAID P01 review, SEP ZAI1-RRS-A-M2, 04/27/2011.
- NIAID P01 review, SEP ZAI1-RWM-M-S1, 05/12/2011.
- NIAID R01/R21 reviews, ZRG1 IDM-U 02 M, Topics in Microbial Pathogenesis and Immunity, August 18 & 19, 2011.
- NIAID-AI-11-010, The Infant Immune System: Implications for Vaccines and Response to Infections (R01), Dec. 1-2, 2011.
- NIAID P01 review, SEP ZAI1 JKB-M (M2) 1, 03/26/2012.
- NIAID R01 reviews, SEP ZAI1 DR-A (M1) 1, Innovation for HIV Vaccine Discovery, 04/03/2012.
- NIH, ZRG1 CB-J (30) I Study Section, S10 flow cytometer application reviews, August 8-9, 2012.
- American Institute of Biological Sciences, US Army Medical Research and Materiel Command, September 2012.
- NIH, NIAID Allergy, Immunology, and Transplantation Research Committee (AITC). February 12-14, 2013.
- NIH NIAID DAIDS Vaccine Development Resources Group of Vaccine Research Program (VRP). Review Committee Member, 2013-present.
- Defense Threat Reduction Agency, Department of Defense. 2013.
- Investigator Initiated Program Project Applications, NIH NIAID Special Emphasis Panel, 2014/01 ZAI1 LGR-I (J1) 1; 09/16/2013 – 09/17/2013.”
- Southwest National Primate Research Center”, NIH P51 Special Emphasis Panel, 2014/01 ZOD1 CM-6 (03), November 2013.
- “Innovation for HIV Vaccine Discovery (R01)”, Special Emphasis Panel/Scientific Review Group 2014/01 ZAI1 SV-A (J3) 1, January 2014.
- “HIV Functional Glycomics in HIV Vaccine Design” Special Emphasis Panel (2014/05 ZAI1 BLG-M (M1) 1), April 10, 2014.
- “NIAID Clinical Trial Planning Grants (R34) and Implementation Grants and Cooperative Agreements (R01, U01)” (2014/05 ZAI1 BLG-M (M1) 1), April 10, 2014.
- Special Emphasis Panel/Scientific Review Group 2015/01 ZAI1 BLF-A (J2) 1. “Innovation for HIV Vaccine Discovery” (R01), RFA-AI-14-006, November 2014.
- NIAID Integrated Preclinical/Clinical AIDS Vaccine Development Program (IPCAVD) [Special Emphasis Panel 2015/10 ZAI1 RB-A (S1)], June 2015.
- Special Emphasis Panel 2016/01 ZAI1 DR-A (J1). P01 reviews.
- Special Emphasis Panel 2016 ZAI1PA-M-C2, SBIR Phase II Proposals.
- Pathogen/Host Interactions, 2016/05 ZRG1 IMM-M (90) S, R21 proposals.
- Special Emphasis Panel 2016/10 ZAI1 DR-A (S2); NIAID Clinical Trial Planning Grant (R34) and NIAID Clinical Trial Implementation Cooperative Agreement (U01) applications. July 2016.
- Member Conflict: Topics in Virology (2016/10 ZRG1 IDM-X (02)M), Special Emphasis Panel. July 22, 2016.
- 2017/01 ZAI1 DR-A (J1) 1, NIAID, NIH conference grant (R13) applications. October 31, 2016.
- Special Emphasis Panel ZRG1 BCMB-T (50) “RFA-GM-17-003: Centers for HIV / AIDS-Related Structural Biology (P50)”, March 21, 2017

Scientific Reviewer for Study Sections - Organizations

Permanent Member

March of Dimes Birth Defects Foundation, Committee C grant study section, 2006 – 2016.

March of Dimes Birth Defects Foundation, Committee S grant study section, 2017 – present.

Ad Hoc Member

- Thrasher Foundation, 2002 – 03.
- World Health Organization Grants Program, 1998 – 2000.
- U.S. Civilian Research and Development Foundation 2000 – 2002.
- Wellcome Trust grants program reviewer, 2002, 2006, 2007, 2015.
- University of Siena Research Program, 2002.
- The Swiss National Science Foundation, 2001 – 2002.
- BioAdvance/Greenhouse technical reviews, 2003 – 2008.
- Health Research Board of Ireland Grants Program, Referee, 2004.
- Maryland Industrial Partnerships grants reviewer, 2004.
- Genome British Columbia, grant reviewer, 2004.
- Society for Pediatric Research, Young Investigator Award Selection Committee, 2003 to 2006.
- Pediatric Infectious Diseases Society/MedImmune Young Investigator Grant Award Program, 2005.
- The United States-Israel Binational Science Foundation, 2006, 2008.
- US Immunodeficiency Network (USIDNET), 2006, 2007.
- Infectious Diseases Society of America Awards Committee, 2006 – 2009.
- American Institute of Biological Sciences (AIBS), US Army Medical Research and Materiel Command (USAMRMC), 2006.
- Abstract reviewer for the 2007 Pediatric Academic Societies Annual Meeting in Toronto, Canada.
- Agency for Science, Technology and Research's Biomedical Research Council (BMRC), Singapore, 2007.
- External Advisory Board Member, The New York Influenza Center of Excellence (NYICE), an NIH Center of Excellence in Influenza Surveillance and Research. 2008-12.
- Duke-National University of Singapore Program, 2009.
- M.J. Murdock Charitable Trust, 2009.
- The Danish National Research Foundation, 2009.
- The Danish Council for Strategic Research, 2009.
- 2010 Pediatric Academic Societies Annual Meeting in Vancouver, Canada, 2010.
- Istituto Pasteur-Fondazione Cenci Bolognetti, Italy, Grant Reviewer, 2010.
- 2011 PAS/ASPR Joint Meeting and the 2011 Eastern SPR Annual Meeting.
- Health Research Board, Ireland, 2011, grants reviewer.
- Food and Health Bureau (FHB) of the Hong Kong SAR Government [Research Fund for the Control of Infectious Disease (RFCID) and the Health and Health Services Research Fund (HHSRF)], 2012, grant reviewer.
- National Fellowships Committee for Sigma Delta Epsilon, Graduate Women in Science, 2012.
- Swiss National Science Foundation, 2012.
- Oak Ridge Associated Universities grant program, New York Capital Research Alliance, 2012.
- French National Research Agency (Agence Nationale de la Recherche), 2013.
- Israel Science Foundation, 2013.
- Medical Research Council, U.K., 2013, 2014.
- ICAR grants program, International Pediatric Research Foundation, 2013.
- Human Vaccines Project Working Group, 2014 – present.
- Advisory Committee of Experts, Second W.H.O. Integrated Meeting on development and clinical trials of influenza vaccines that induce broadly protective and long-lasting immune responses. 5th – 7th May 2014. Geneva, Suisse.
- Meharry Medical College, 2014, SCORE grant reviewer.
- University of Nebraska-Lincoln, Biomedical Research Grants, 2014.
- Member, RSV Expert Working Group, GISRS, Influenza Viruses and Vaccine Support, Global Influenza Programme, W.H.O.
- Oak Ridge Associated Universities (ORAU) *Zika Research Grant Initiative* reviewer, on behalf of the Florida Department of Health's Biomedical Research Programs, December 2016.

Scientific Reviewer for Study Sections, Vanderbilt

- Grant reviewer, Turner Scholar Grant Program, 2006 – present.
- Grant reviewer, Digestive Disease Research Center, 2007.
- Grant reviewer, Center for AIDS Research Developmental Core Award applications, 2007.
- Study Section Head and Reviewer, Vanderbilt Medical Center Discovery Grants, 2007.
- Grant reviewer, Diabetes Research and Training Center, 2009.

Scientific Editor/Reviewer for Peer Reviewed Journals:

Editor

- *Nanomedicine: Nanotechnology, Biology and Medicine*, (2004 – 2007)

Associate Editor

- *WIREs: Nanomedicine and Nanobiotechnology*, 2005 – present
- *PLoS Pathogens*, 2010 – present

Editorial Boards:

- *Nanomedicine*; 2005 – present
- *Virology*; 2010 – 2015.
- *Journal of Virology*; three terms: (2004 – 2006), (2006 – 2009), (2010 – 2012).
- *Faculty of 1000* Faculty Member (Microbiology); 2002 – 2014.
- *npj Vaccines*, 2016 – 2019.

Special Editor:

- *Pediatric Infectious Diseases Journal*, Nov 2004, Supplemental Issue on Respiratory Virus Infections.
- *Seminars in Pediatric Infectious Diseases*, Oct 2006, “Emerging Vaccines for Mucosal Infections”.
- *Proceedings of the National Academy of Sciences USA*, 2011.

Ad Hoc Reviewer:

- *Acta Paediatrica*
- *American Journal of Pathology*
- *American Journal of Perinatology*
- *American Journal of Respiratory and Critical Care Medicine*
- *Antiviral Research*
- *Archives of Diseases in Children*
- *Archives of Virology*
- *ASM Press Virology Textbooks*
- *Biotechniques*
- *BMC Systems Biology*
- *Cell Host & Microbe*
- *Cellular Immunology*
- *Clinical and Diagnostic Laboratory Immunology*
- *Clinical and Experimental Immunology*
- *Clinical Infectious Diseases*

- *Clinical Microbiology Reviews*
- *Emerging Infectious Diseases*
- *European Journal of Immunology*
- *Experimental Lung Research*
- *Expert Opinion on Emerging Drugs.*
- *Expert Opinion on Investigational Drugs*
- *Expert Review of Anti-infective Therapy*
- *Expert Review of Vaccines*
- *F1000Research*
- *Immunology*
- *Infections in Medicine*
- *Journal of American Family Practitioner*
- *Journal of the American Medical Association*
- *Journal of Bioinformatics and Sequence Analysis*
- *Journal of Clinical Microbiology*
- *Journal of Clinical Investigation*
- *Journal of Clinical Virology*
- *Journal of General Virology*
- *Journal of Experimental Medicine*
- *Journal of Immunological Methods*
- *Journal of Immunology*
- *Journal of Infectious Diseases*
- *Journal of Leukocyte Biology*
- *Journal of Medical Primatology*
- *Journal of Medical Virology*
- *Journal of Virological Methods*
- *Lancet*
- *LancetID*
- *mAbs*
- *Nature Biotechnology*
- *Nature Communications*
- *Nature Immunology*
- *Nature Methods*
- *Nature Protocols*
- *OMICS*
- *Pediatrics*
- *Pediatric Infectious Diseases Journal*
- *Personalized Medicine*
- *PLoS Medicine*
- *PLoS One*
- *PLoS Pathogens*
- *Proceedings of the National Academy of Sciences USA*
- *Respiratory Research*
- *Science*
- *Science Reports*
- *Scientific Reports*
- *Swiss Medical Weekly*
- *Thomson Current Drugs, Meetings Reviewer*
- *Vaccine*
- *Viral Immunology*
- *Virus Genes*
- *Virus Research*

Textbook Reviewer

- Janeway's *Immunobiology*, Seventh Edition, 2008; Eighth Edition, 2010; Ninth Edition, 2012.

Advisory activities, Government

- Scientific Advisory Board Member, NIH/NIAID Immune Epitope Database and Analysis Resource (IEDB), La Jolla Institute for Allergy and Immunology (LIAI). 2004 – 2009.
- U.S.-Japan Foundation Acute Respiratory Infections, Panel Advisor, 2003.
- NIAID/NICHD Funding Priority Panel: Developing Immune System: Frontiers in Knowledge, 2000.
- NIH/NIAID Orthopoxvirus Research Group 2000 – 2004.
- 'Reach-Back' Service, Department of Homeland Security, Office of Weapons of Mass Destruction, 2006 – present.
- U.S.-Japan Foundation HIV Panel Advisor, 2008.
- Panel Advisor, "Immunological Content Review of the Immune Epitope Database and Analysis Resource Meeting (IEDB)", NIAID, Bethesda, MD, 6/17/10.
- Scientific Advisory Board Member, NIH/NIAID Immune Epitope Database and Analysis Resource (IEDB), La Jolla Institute for Allergy and Immunology (LIAI). 2011 – present.
- Scientific Advisory Working Group member, NIH Vaccine Research Center, 2013 – present.
- Steering Committee Member, Campaign for AIDS Vaccine Discovery, (CAVD; Bill and Melinda Gates Foundation) grant to International AIDS Vaccine Initiative (IAVI) and the Neutralizing Antibody Center at the Scripps Research Institute, La Jolla, CA, 2013 – present.
- Scientific Advisory Board member, Integrated Preclinical/Clinical AIDS Vaccine Development (IPCAVD) Program, NIH/NIAID. 2014 – present.
- U.S. Chair for US-Japan Cooperative Medical Sciences Program (USJCMSP). *17th International Conference on Emerging Infectious Diseases (EID) in the Pacific Rim*, Taipei, Taiwan, January 25 – 29, 2015.
- Intelligence Science and Technology Experts Group (ISTEG) of the National Academies of Sciences, Engineering, and Medicine; supports the Office of the Director of National Intelligence (ODNI). Provides advice to agencies of the U.S. Intelligence Community.
- Board of Scientific Counselors (BSC), Review Meeting for the Division of Intramural Research, NIAID/NIH, December, 2016.

Advisory Activities, Industry: Scientific Advisory Boards

- MedImmune, Gaithersburg, MD, 2002 – 2007.
- Vaxin, Scientific, 2004 – 2005.
- Enumeral Technologies, Inc., Cambridge, MA, 2010 – 2015.
- PaxVax, Inc., 2014 – present.
- CompuVax, La Jolla, CA, 2014 – present.
- GigaGen, Inc. San Francisco, CA, 2015 – present.
- Meissa Vaccines, Inc., 2015 – present.
- Rensavir, Inc., 2015 – present.
- Ridgeback Biotherapeutics, 2016 – present.
- Sanofi Pasteur Research Advisory Board, 2017.
- Takeda, Norovirus Vaccine Advisory Board, 2017.

Advisory Activities, Industry: Consultant

- Ablynx, 2008.
- Absalus, 2003 – 2004.
- Anaptys, 2008 – 2010.

- Aviron, Consultant, 2000 – 2001.
- Biomedical Primate Research Centre, Rijswijk, Netherlands, 1996.
- BLiNK Therapeutics Limited, 2012.
- Council of Advisors, 2001 – present.
- Ebon Research Systems, Bethesda, MD, 1994.
- Epicyte, 2002 – 2004.
- Evogenix, 2006.
- Gilead Sciences, 2010.
- Glaxo SmithKline, 2012.
- ImmunoBiosciences, Raleigh, NC, 2009 – 2011.
- Mapp Biopharmaceuticals, 2004 – 2010.
- MedImmune, Inc, Gaithersburg, MD, 2002 – 2009.
- Morphotek, 2004.
- Novartis, 2008 – 2009.
- Planet, 2009.
- Sanofi, 2005 – 2010.
- Sanofi Pasteur, 2015 – present.
- Symphogen, Denmark, 2004.
- Syngenta, 2004 – 2005.

Advisory activities, Organizations

- The Brighton Collaboration. Neonatal Infection Working Group, 2004 – 2007.
- Council Member (for Infectious Diseases), Society for Pediatric Research, 2009 – 2012.
- Program Committee, Infectious Diseases Society of America, 2009 – 2012.
- Organizing Committee, AIDS Vaccine 2010 Conference, Atlanta, GA.
- Abstract reviewer, 2011 ASCI/ AAP Joint Meeting, Chicago, IL.
- American Society for Microbiology, Raymond W. Sarber Award Selection Committee, 2011 – 15.
- Founder and Director, Society for Pediatrics Young Investigator Coaching Program, 2012 – 2013.
- E. Mead Johnson Award Selection Committee, Society for Pediatric Research Council, 2012 – 2015. Chairman 2016.
- AIDS Vaccine 2013: Abstract Reviewer.
- FASEB Excellence in Science Award Selection Committee, 2013 – 15.
- WHO RSV Expert Working Group, 2014 – present.

Advisory activities, grants and contracts

- Consultant, R01 AI 059694, NIAID, NIH, Bioinformatics Strategies: Biodefense Vaccine Research, PI: Jason Moore, Dartmouth, 2009 – 2014.
- Consultant, Project N01AI40006-15-0-2, NIAID, NIH, Immune Epitope Database, Alessandro Sette, La Jolla Institute, 2003 – 2011.
- Consultant, U19, NIAID, NIH, Mechanisms driving breadth of HCV neutralization during repeated control of acute infection in humans, Johns Hopkins University, 2016 – 2021.

Meetings Organizer, Moderator

- Moderator, “Respiratory Viral Infection: Advances in epidemiology and pathobiology” Symposium. 40th meeting, *Infectious Diseases Society of America*, October 2002, Chicago, IL.
- Scientific Advisory Committee, *Viral Vaccine Meeting*, October 2003, Barcelona, Spain.
- Chair, *Third International Congress of Respiratory Viruses*, Chicago, IL, April 2004.
- Moderator, “Vaccines” session, 42nd Annual Meeting of IDSA, Sept 2004, Boston, MA.
- Founder and Chair, *Frontiers in Neonatal and Infant Immunology*, Madrid, Spain, March 2005.

- Program Review, "Neonatal Infectious Diseases", 2005 PAS Annual Meeting in Washington, DC.
- Session Moderator, 6th International RSV Symposium, Marco Island, FL, October, 2007.
- Group leader, Virology Poster Discussion Rounds, 47th Annual IDSA Annual Meeting, October 2009, Philadelphia, PA.
- Co-chair, "Regulation of HIV-specific B cell responses" scientific session, *The Search for Broadly Protective Anti-HIV Antibodies NIH meeting*, June 2010, Bethesda, MD.
- Moderator, "Neutralizing antibodies to viruses" session, 49th Annual Meeting of IDSA, Oct 2011, Boston, MA.
- Moderator, "Influenza" and "Correlates of Protection against Disease Caused by Virus Infection" sessions, 50th Annual Meeting of IDSA, Oct 2012, San Diego, CA.
- Scientific Advisory Committee, *RSV Vaccines for the World 2013*, Oct 2013, Porto, Portugal.
- Session Chair, Virus-Host Interactions Workshop, *Keystone Symposium on Pathogenesis of Respiratory Viruses*, Jan 2014, Keystone, CO.
- Member, International Advisory Committee, *XVIth International Congress of Virology*, Montreal, Quebec, July 2014.
- Member, Program Committee, *The American Association of Immunologists*, 2013-2016.
- Member, Organizing Committee, *2014 Spring Immunology Symposium*, Emory University, Atlanta, GA, June 2014.
- Rapporteur, Medical Countermeasures Panel Discussion, *Gaps and Opportunities in Chikungunya Research: Expert Consultation on Chikungunya Disease in the Americas*, June 30 – July 2, 2015. (NIAID, WHO), Rockville, Maryland.

RESEARCH SUPERVISION

Staff awards

- **Frances Smith-House, MS**, my laboratory manager, was selected as the recipient of the 2013 Edward Price, Jr., Research Staff Award for Excellence in Basic Research, the highest staff research award in the university.
- **Nurgun Kose**, a Senior Research Specialist in my laboratory, was selected as the recipient of the 2017 Price award.

Faculty career awards for junior faculty, for whom I serve(d) as the mentor or co-mentor

- **John Williams, M.D.** K08 AI056170 "Determinants of Protective Immunity to Metapneumovirus." 08/01/03 07/31/06 [John also obtained a related grant R03 AI054790 "Human Metapneumovirus Infections in Children" while a fellow in my laboratory].
- **Timothy Peters, M.D.** K08 AI058006 "Mechanisms of Human Metapneumovirus Replication." July 04 – June 07.
- **Brannon Alberty, M.D.**, NASPGHAN-CDHNF Fellow to Faculty Transition Award 2006, "Gut-homing Regulatory T Lymphocytes in Crohn's Disease."
- **Brett McKinney, Ph.D.**, K25 AI64625 "Cytokine signaling network response to smallpox vaccine." Mentored Quantitative Research Career Development Award. 2006 – 2009.
- **Hendrik Weitkamp, M.D.**, K08 HD061607, "Development of Intestinal Immune Regulation in Human Infants." 2009 – 2014.
- **Michael Rosen, M.D.**, NASPGHAN-CDHNF Fellow to Faculty Transition Award, "The Role of IL-13 and Natural Killer T-Cells in New Onset Pediatric Ulcerative Colitis." 2009.
- **Mark Hicar, M.D., Ph.D.**, K08 AI 083078, "Antibodies Recognizing Quaternary Differences in HIV Envelope Glycoproteins." 2009 – 2014; Also, 2009 Infectious Diseases Society of America (IDSA) Wyeth Young Investigator Award in Vaccine Development: "Trimer-specific antibodies influence on HIV envelope diversity." Now Assistant Professor on tenure track, SUNY Buffalo.

- **Scott Smith, M.D., Ph.D.** K08 AI 103038. Adult infectious diseases fellow. 2008 – 2012. Also awarded an IDSA/NFID Pfizer Young Investigator Award in Vaccine Development for the research project “Human Antibody Response to Chikungunya Virus Infection.”
- **Brian Engelhardt, M.D.** K23 HL122143, “Metabolic and CD4+ T Cell Dysregulation in Post-Transplant Diabetes Mellitus.” 2014-2019. Now Associate Professor of Medicine, Vanderbilt.

Mentor for Successful NIH Loan Repayment Program Competitive Awards

- **Brian Engelhardt, M.D.**
- **Mark Hicar, M.D., Ph.D.**
- **Christopher Keefer, M.D.**
- **Keipp Talbot, M.D.**
- **John V. Williams, M.D.**
- **Scott Smith, M.D., Ph.D.**
- **Daniel Dulek, M.D.**

Current postdoctoral fellows:

- **Jarrod Mousa, Ph.D.,** Research Postdoctoral Fellow. 2015-present. Jarrod is a structural biologist who is studying structure/function of human antibodies to paramyxoviruses.
- **Amandeep Sangha, Ph.D.** Research Postdoctoral Fellow. 2015-present. Amandeep is a computational biologist who is studying structure/function and design of human antibodies to filoviruses. Co-mentored with Jens Meiler, Ph.D.

Former postdoctoral fellows trained at Vanderbilt:

- **Koichi Kusuhara, M.D.** (1997 – 1998). Research fellow. Now Chair, Department of Pediatrics, School of Medicine, University of Occupational and Environment Health, Japan
- **Hendrik Weitkamp, M.D.** (1998 – 2002). Research fellow. Now Associate Professor, Department of Pediatrics, Division of Neonatology, Vanderbilt University Medical Center.
- **Rahaman Suara, M.D.** (1998 – 2001), First, Assistant Professor of Pediatrics, Meharry Medical College, Nashville, TN; now in medical practice in TN. *URM trainee.*
- **Madhav Sharma, Ph.D., M.B.A.** (1999 – 2000). Now Senior Research Scientist in the Department of Pediatrics in the Medical College of Georgia at Georgia Regents University.
- **Michael Rock, Ph.D.** (2000 – 2002). Was Research Associate Professor through 2016, Vanderbilt University Medical Center. Now in private industry.
- **John V. Williams, M.D.** (2001 – 2003). Now Division Head, Pediatric Infectious Diseases, Professor with tenure, University of Pittsburgh, PA and. NIH R01 funded investigator.
- **Cuixia Tian, M.D.** Research Postdoctoral Fellow, 2003 – 2006. Now Assistant Professor, Child Neurology, Cincinnati Childrens Hospital.
- **Sujin Lee, Ph.D.** Research Postdoctoral Fellow, 2003 – 2007. Now Assistant Professor of Pediatrics, Emory University.
- **Brannon Alberty, M.D.** Fellow. 2005 – 2006. First, Assistant Professor of Pediatrics at the University of Kentucky. Now in medical practice.
- **Xiacong Yu, Ph.D.** Research Postdoctoral Fellow. 2004 – 2008. Now Instructor, Department of Medicine, Beth Israel Deaconess Medical Center, Harvard University, Boston, MA.
- **Christopher Keefer, M.D.** 2005 – 2008. Pediatric Infectious Diseases Fellow. Now, Assistant Professor in Pediatrics at Meharry Medical College, Nashville, TN.
- **Keipp Talbot, M.D.,** Adult Infectious Diseases Fellow. 2004 – 2006. Now Assistant Professor of Medicine, Vanderbilt University Medical Center.
- **Sam Kuhn, Ph.D.** Research Postdoctoral Fellow. 2006 – 2007. Now Scientist with HemCon Medical Technologies, Portland, OR.

- **Aaron Derdowski, Ph.D.** Research Postdoctoral Fellow. 2006 – 2007. Now Engagement Manager, Proactive Worldwide Consulting.
- **Sunny Mok, Ph.D.** Research Postdoctoral Fellow. 2005 – 2008. Sunny generated and tested alphavirus based vaccines for RSV and MPV. Currently Scientist II at MedImmune.
- **David Vigerust, Ph.D.** Research Postdoctoral Fellow. 2007 – 2009. Now, Vice President at Silverstaff Clinical Labs. *URM trainee.*
- **Mark Hicar, M.D., Ph.D.** Pediatric Infectious Diseases Fellow. 2006 – 2009. Now, Assistant Professor of Pediatrics, SUNY Buffalo, NIH R01-funded PI.
- **Catherine (Prudhom) Gineste, Ph.D.** Research Postdoctoral Fellow. 2007 – 2009. Now Research Scientist at SRI International, Harrisonburg, Virginia.
- **John Stone, Ph.D.** Research Postdoctoral Fellow. 2008 – 2010. Now Assistant Professor of Chemistry at Georgia Southern University.
- **Jens Krause, M.D.** Pediatric Infectious Diseases Fellow. 2008 – 2011. Now, Assistant Professor at the Children's Hospital of the University of Freiburg Medical School in Germany.
- **Natalie J. Thornburg, Ph.D.** Research Postdoctoral Fellow. 2007 – 2012. Now Lead Research Microbiologist, U.S. Centers for Disease Control and Prevention.
- **Gopal Sapparapu, Ph.D.** Research Postdoctoral Fellow. 2007 – 2012. Now Research Assistant Professor, Vanderbilt University Medical Center
- **John T. Bates, Ph.D.** Research Fellow. 2010 – 2013. Now Assistant Professor, Microbiology and Immunology, University of Mississippi Medical Center.
- **Jennifer Pickens Ph.D.** Research Postdoctoral Fellow. 2012 – 2015. Jennifer studied the cell biology of RSV infection. Now Assistant Professor at Sewanee University.
- **Iuliia Gilchuk, Ph.D.** Research Postdoctoral Fellow. 2012 – 2015. Now Staff Scientist, Vanderbilt University Medical Center.

Visiting Scientists in the Crowe Laboratory

- **Reiko Saito, M.D., Ph.D.**, Assistant Professor, Niigata University, School of Medicine, Niigata, Japan; Mini-sabbatical, April 2004.
- **Jung-Yun Hong, M.D., Ph.D.**, Assistant Professor of Pediatrics, College of Medicine, Cheju National University of Korea, Jeju City, Korea, sabbatical August 2005 – Oct 2006.

Graduate students:

Current PhD Candidates training with Dr. Crowe

- **Jessica Finn**, 2012 – present, Department of Pathology, Microbiology and Immunology. Jessica is using combined computational and wet-laboratory studies to study the role of unusual antibodies to viruses that incorporate long HCDR3 loops with secondary structural elements.
- **Sandhya Bangaru**, 2013 – present, Department of Pathology, Microbiology and Immunology. Sandhya is studying human antibodies to influenza viruses with pandemic potential.
- **Alberto Cisneros**, 2013 – present, Chemical and Physical Biology Program. Alberto is developing novel microfluidics techniques for large-scale interrogation of human antibody repertoires. *URM student.*
- **Alex Sevy**, 2014 – present, Chemical and Physical Biology Program. Alex is using combined computational and wet laboratory techniques to study human antibody recognition of viral antigens.
- **Gabriela Alvarado**, 2014 – present, Department of Pathology, Microbiology and Immunology. Gaby is studying human antibodies to viruses. Appointed to the nationally competitive Yale Ciencia Academy. *URM student.*
- **Marion Sauer**, 2015 – present, Chemical and Physical Biology Program. Marion is using single particle EM and computational modeling techniques to study the basis for neutralization of viruses by human monoclonal antibodies.

- **Clayton Wandishin**, 2015 – present, Chemical and Physical Biology Program. Clayton is using neutron and x-ray scattering and computational modeling techniques to study the basis for neutralization of viruses by human monoclonal antibodies. *URM student*.
- **Laura Powell**, 2015 – present, Department of Pathology, Microbiology and Immunology. Laura is studying the human B cell response to rabies vaccination or infection.
- **Monique Bennett**, 2015 – present, Department of Pathology, Microbiology and Immunology. Monique is studying the human B cell response to *Staphylococcus aureus*.
- **Lauren Williamson**, 2016 – present, Department of Pathology, Microbiology and Immunology. Lauren is studying the human B cell response to picornaviruses.

Former PhD Candidates who trained with Dr. Crowe

- **Sean Brock**, 1999 – 2003, Department of Microbiology and Immunology. Now scientific intellectual property lawyer in Philadelphia.
- **Marietjie Venter, MS** 2000 – 2003, PhD in Microbiology and Immunology, University of the Witwatersrand, Johannesburg, South Africa (Crowe as mentor). Now Professor, Center for Viral Zoonosis, Department Medical Virology, University of Pretoria, South Africa
- **Nicole Kallewaard-Lelay**, 2000 – 2005, Department of Microbiology and Immunology. Now, Scientist, MedImmune, Inc.
- **Alec Weisberg (MSTP)** 2001, Department of Microbiology and Immunology, (returned to medical school). Now cardiologist, Kansas City, MO.
- **Amber Bowen** 2002 – 2006, Department of Microbiology and Immunology. No longer in science.
- **Gabriella Cseke**, Department of Chemistry, 2003 – 2006, co-mentored with David Wright of Chemistry and John Williams, MD. Now Scientist at Hepatares Therapeutics, Hertford, England.
- **Thomas Utley** 2003 – 2008, Department of Microbiology and Immunology. Now, Licensing Analyst, Vanderbilt University.
- **Michael Lindquist**, 2005 – 2011, Department of Microbiology and Immunology. Now postdoctoral research fellow at the United States Army Medical Research Institute for Infectious Diseases, Ft. Detrick with Dr. Connie Schmaljohn.
- **Fyza Shaikh**, 2007 – 2012, MSTP and Department of Microbiology and Immunology. Now in a heme-onc fellowship at Johns Hopkins University.
- **Bryan Briney**, 2008 – 2012, Department of Microbiology and Immunology. Now Assistant Professor of Immunology, The Scripps Research Institute.
- **Mohammed Aiyegbo**, 2006 – 2013, Department of Microbiology and Immunology. Now post-doctoral fellow at NYU. *URM student*.
- **Jordan Willis**, 2009 – 2014. Chemical and Physical Biology Program. Now postdoctoral fellow, The Scripps Research Institute.
- **Andrew Flyak**, 2012 – 2016, Department of Pathology, Microbiology and Immunology. Now postdoctoral fellow, Cal Tech.
- **Valentine Chukwuma**, 2010 – 2016. Department of Microbiology and Immunology. Now Vanderbilt medical student. *URM student*.

Rotating Vanderbilt graduate students who trained in Crowe for 2 -6 months:

Vanderbilt Interdisciplinary Graduate Program

- 1999 Craig Forrest, Jason Hammonds
- 2000 Angela Singleton
- 2001 Rachel Graham, Nicholas Shinnars
- 2002 Butch Granada, Rachel Henry, Daniel O'Brien
- 2003 Elizabeth Johnson
- 2004 Adrian Pineda, Jud Schneider
- 2005 Megan Johnson

- 2006 Amanda Hafer, Laura Johns, Paul Miller, Nuruddeen Lewis, Tom Beckerman
- 2007 Michael Irvin
- 2008 Laura Ooms, Jamie Ausborn, Ernest Yufenyuy
- 2009 Yaoyi Chen
- 2010 Matthew Varga, Bradley Voss
- 2011 Laurel Jackson, Katie Nicholas, Ryan Craven, Jennifer Malinowski
- 2012 Kate Bradley, Allison Oberholtzer, Martha Wall
- 2014 Stephanie Lamb, Evan Perry
- 2015 Ying Ji
- 2016 Nathaniel Chapman, Michael Doyle

Vanderbilt Bioengineering

- 1999 Molly James

Vanderbilt Medical Scientist Training Program

- 2007 Indriati Hood
- 2008 John Erickson
- 2010 Matthew Surdel
- 2011 Meredith Rogers
- 2016 Darpan Patel

High School Summer Students in the Crowe laboratory

- 1997 Charles Spencer. Now has obtained PhD, is faculty member.
- 2010 Leland Brown. Also 2011, 2012. *URM student*.
- 2011 Jonathan Ferrell.

Undergraduate Students in the Crowe laboratory

- 1997 Michael Jolly, from Dept. of Molecular Biology, also 1998 – 2000.
- 2000 Darren Kies, Vanderbilt University. Also 2001, 2002.
- 2001 McLean Coble, Vanderbilt University. Senior Honors Student 2002-03.
- 2002 Joshua Heck, Vanderbilt University. 2002 – 2008. ASM Undergraduate Research Fellowship.
- 2002 Josie Vitale, Vanderbilt University. Also 2003.
- 2003 Ashley Long, Vanderbilt University. Also 2004, 2005.
- 2003 Kevin Dischert, Vanderbilt University. Also 2004, 2005.
- 2004 Matt Crozier, Vanderbilt University. Also 2005.
- 2004 Emily Deckelman, Vanderbilt University. Also 2005, 2006.
- 2004 Ann Rice, Vanderbilt University. Also 2005.
- 2004 Christian Fuchs. Cellular and Molecular Microbiology Training Program.
- 2007 Jon Hedgecock, Vanderbilt University. Also 2008. ASM Undergraduate Research Award.
- 2007 Nicholas Ware, Dartmouth College, summer 2007.
- 2009 Chelsey Huffman, Cumberland University.
- 2010 Luke Starner, Belmont University.
- 2010 Ma'Recha Gay, Oakmont University. Annual Biomedical Research Conference for Minority (ABRCMS) award. *URM student*.
- 2010 Sarah Sweitzer, Gordon College, post-baccalaureate.
- 2010 Liliane Ernst, Vanderbilt University.
- 2010 Amanda Chen, Vanderbilt University. Also 2011.
- 2011 Sarah Hayward, Wake Forest University. Also 2012. Now grad student, Emory.
- 2012 Leland Brown, East Tennessee State University. Also, 2013, 2014. *URM student*.
- 2011 Mason Sanders, Rice University.

- 2013 Graham Englert, Purdue University.
- 2013 John Shannon, Colorado State University; 2014 Keystone travel award.
- 2014 Abigail Bray, Sewanee, The University of the South. Also 2015.
- 2014 Alexander Pak, Nazarbayev University, Astana, Republic of Kazakhstan.
- 2014 Steven Wood, Biomedical Engineering, Vanderbilt University.
- 2015 Ghazia Abbas, Forman Christian College, Lahore Pakistan.
- 2015 Giovanni Zepeda-Dominguez, Taos, NM. *URM student*.
- 2016 Chandler Floyd, Harvard College. *URM student*.
- 2016 Rhea Manohar, University of Miami.
- 2016 Katie Ankenbauer, Lipscomb University.

Medical Students in the Crowe laboratory

- 1997 Robert Matthias, Vanderbilt University.
- 1998 Angela Singleton, Vanderbilt University.
- 1998 Brandon Strange, Meharry Medical College Student. *URM student*
- 2001 Elizabeth Bures, Nebraska University. SPR Student Research Program award.
- 2001 Joyce Pingsterhaus, Washington University in St. Louis. SPR Student Research Program.
- 2006 Lauren Weigand, 2006 – 2007. Emphasis Research Program.
- 2006 Josh Heck. 2006 – 2007. Emphasis Research Program.
- 2009 Alexander Thurman, Indiana University School of Medicine. SPR Student Research Program.
- 2010 Ilyas Eli, Vanderbilt University. 2010 – 2012. Emphasis Research Program. *URM student*.
- 2011 Garrett Sauter, Wayne State University. SPR Student Research Program.
- 2011 Shyam Deshpande, Vanderbilt University. 2011 – 2013. Vanderbilt Emphasis Research Program student. Vanderbilt Founders Medal (top student at graduation).
- 2014 Ebony Mullen, Meharry Medical College. *URM student*.
- 2016 Ashley Wu, Vanderbilt School of Medicine. Research Immersion Project.

MPH Students in the Crowe laboratory

- 2015 Vidisha Singh, Emory University.

Principal Investigator, Vanderbilt Predoctoral Training Program

T32 AI 089554, NIAID, NIH

Virology Training Program

05/01/10 – 04/30/15

Annual Costs \$297,482

PI: Crowe

Role: PI of the Training Program, and Faculty Mentor

Mentor on Vanderbilt Predoctoral/Postdoctoral Training Programs

T32 AI 07474, NIAID, NIH

Molecular Basis of Infectious Diseases Training Program

07/01/10 – 07/31/20

PI: Spyros Kalams, M.D.

Role: Faculty Mentor and Member of the Executive Committee

T32 GM 08554, NIGMS, NIH

Cellular, Biochemical and Molecular Sciences (CBMS) Training Program

PI: James Patton, Ph.D.

Role: Faculty Mentor

T32 HL069765, NHLBI, NIH
Immunobiology of Blood and Vascular Systems Training Program
PI: Jacek Hawiger, M.D., Ph.D.
04/01/2007 – 08/31/2017
Role: Faculty Mentor

T32 DK 007673, NIDDK, NIH
Digestive Diseases Training Grant
PI: Richard Peek, M.D.
07/01/2008 – 06/30/19
Role: Faculty Mentor

T32 Program, HD 060554, NICHD, NIH
PI; William Cooper, MD
Conducting Child Health Care Research in Vulnerable Populations
05/01/2009 – 04/30/2020
Role: Faculty Mentor

T32 Program, AI007281, NIAID, NIH
PI: Fernando Villalta, Ph.D., Meharry Medical College
Molecular Microbial Pathogenesis Training Program
07/01/2015 – 06/30/2019
Role: Faculty Mentor

Mentor, Undergraduate Training Programs

Vanderbilt University Summer Research Experiences for Undergraduates (REU) Program
National Science Foundation
2010-present
PI: McCabe
Role: Faculty Mentor

Mentor, NIH F or K on Foundation Career Awards

F32 AI080117, NHLBI, NIH
Natalie Thornburg, Ph.D.
Human host responses to RSV infection
09/30/2009 – 09/29/2011
Role: Faculty Mentor

F32 AI 080108, NIAID, NIH
Bernardo Mainou, Ph.D.
Role of beta1 integrin in mammalian reovirus infection
07/01/2008 – 06/30/2010
Role: Scholarship Oversight Committee

K01 HL103179, NHLBI, NIH
Kyra Richter, Ph.D.
The role of CD8 T cells in chronic granulomatous disease
08/05/2010 – 05/31/2015

Role: Scholarship Oversight Committee

K08 HD061607, NICHD, NIH
Joern Hendrik Weitkamp, M.D.
Development of intestinal regulation in human infants
07/09/2010 – 04/30/2014
Role: Faculty Mentor

2009 IDSA ERF/NFID Wyeth Young Investigator Award in Vaccine Development
Mark D. Hicar, M.D., Ph.D.
Trimer-specific Antibodies: Influence on HIV Envelope Diversity
07/01/2009 – 06/30/2010
Role: Faculty Mentor

K23 HL 122143
Brian Engelhardt, M.D.
Metabolic and CD4+ T Cell Dysregulation in Post-Transplant Diabetes Mellitus
07/18/2014 – 07/30/2017
Role: Faculty mentor

Isaac Thomsen, M.D.
K23 AI 113150
08/1/2014 – 07/31/2019
Evaluating the Functional Antibody Response to Pediatric *S. aureus* Infections
Role: Scholarship Oversight Committee

Chair, Ph.D. Thesis Committees in the Graduate School

- Kenneth Martin, Department of Microbiology and Immunology, 2003-2011

Ph.D. Thesis Committees in the Graduate School, Committee Member

Department of Microbiology and Immunology

- Jodi Connelly, 1997 – 2001
- Don Wyma, 1999 – 2002
- Jason Hammonds, 1999 – 2005
- John Rutigliano, 2000 – 2003
- Philip Budge, 2000 – 2003
- Hassan Ahmed, 2001 – 2003 (withdrew)
- Carlos Acevedo-Suarez, 2002 – 2006
- Jackie Campbell, 2001 – 2006
- Saif Lalani, 2006 – 2008
- Mingli Qi, 2006 – 2008
- Joseph Conrad, 2006 – 2011
- Ernest Yufenyuy, 2010 – 2014
- John Erickson, 2010 – 2014
- Katie Winarski, 2012 – 2016
- Katherine Nicholas, 2012 – 2016
- Chike Abana, 2015 – present

Program in Human Genetics

- David M. Reif, 2005 – 2006

- William S. Bush, 2006 – 2008
- Emily Holzinger, 2010 – 2013

Department of Cell and Developmental Biology

- Twila Mason, 2010 – 2013

Chemical & Physical Biology Program

- Ian Setliff, 2017 – present

Department of Biomedical Engineering

- Molly James, 1999 – 2000 (withdrew)
- Frances C Knight, 2016 – present

Department of Chemistry

- Scott A. Miller, 2003 – 2006
- Gabriella Cseke, 2003 – 2006
- Elizabeth Bentzen, 2003 – 2006
- Artez Sims, 2011 – 2013
- Christine Markwalter, 2015 – present

Interdisciplinary Materials Science

- Chinmay Soman, 2006 – 2008

Biomedical Engineering

- Frances Knight, 2016 – present

Graduate Student Prequalifying Advisory Committees, Vanderbilt University

- 2007 Devin Stauff, Department of Microbiology and Immunology.

Program in Human Genetics, Qualifying Exam Committees

- 2012 Rafal Sebastian Sobota.

Ph.D. Thesis Committees at Other Universities

- Tiffany Walker, Department of Biomedical Sciences, Meharry Medical College, 2006 – 2012.
- Aaron Lifland, Department of Biomedical Engineering, Georgia Tech, 2011 – 2014.

MSCI or MPH mentoring committees

- Mercedes Judkins, MD, Pediatric Intensive Care fellow, 2004 – 2006.
- Jennifer Domm, MD, Pediatric Hematology and Oncology fellow, 2004 – 2006.
- Brannon Alberty, MD, Pediatric Gastroenterology Fellow, 2004 – 2006.
- Keipp Talbot, MD, Adult Infectious Diseases Fellow, 2004 – 2006.
- Brian Engelhardt, MD. Adult Hematology-Oncology Assistant Professor. 2006 – 2008.
- Michael Rosen, MD, Pediatric Gastroenterology Fellow. 2007 – 2010.

Masters of Laboratory Science Thesis Committee

- Jody Peters, 2004 – 2006.

- Laura Hunt, 2006 – 2008.

Infectious Diseases Fellow Mentoring Committees

- Jennifer Schuster, MD, Pediatric Infectious Disease Fellow, 2012 – 2014. Bioinformatics Fellow Mentoring
- Brett McKinney, PhD, NIH K25 Mentored Quantitative Research Career Development Award. Cytokine signaling networks and the smallpox vaccine, 2006 – 2009.

Research Postdoctoral Fellow Mentoring Committees

- Vaibhav Shah, Ph.D., Pathology, Microbiology and Immunology, 2012-2013.

Faculty Mentoring Committees

- Natasha Halasa, M.D., M.P.H. Assistant Professor in Pediatrics, Infectious Diseases. 2005 – 2010.
- Brian Engelhardt, M.D. Associate Professor in Medicine, Hematology/Oncology. 2007 – present.
- Nishitha Reddy, M.D. Assistant Professor in Medicine, Hematology/Oncology. 2008 – 2010.
- Jonathan Irish, Ph.D. Assistant Professor in Cancer Biology, 2012 – present.

Coursework/Lectures

Graduate School, residency, Fellowship Courses:

- Founder and Director, 15-hour course in grant writing, Microbiology and Immunology 335, Department of Microbiology and Immunology. I developed this course and directed it for seven years, 2004 – 2010.
- “Molecular Virology” graduate course lecturer, 1998 – 2005, Co-Course Director 1999. Course Director, 2000, 2002.
- Molecular and Cellular Immunology M&IM 3283 graduate course lecturer, Yearly 1997 – present.
- Interdisciplinary Graduate Program lecturer in Microbiology, Yearly 1998 – present
- Coordinator, Vanderbilt Molecular Recognition Interest Group, 1998 – 2000.
- Foundations in Microbiology and Immunology, Microbiology and Immunology 334
- Virology Section lecturer 2001 – 2005; Section Director 2002. Toolbox lecturer, 2010, 2011.
- Immunology section lecturer, 2 sessions, 2004 – 2012.
- “Managing a laboratory,” Masters in Clinical Investigation Lecture series, Mar 2006.
- Epithelial Pathobiology graduate school course CBIO342, one lecture “Viruses and epithelial cells,” 2007, 2008; “Aim High: Respiratory virus infection of epithelial cells,” Nov 2012.
- Pathology course PATH351B, Cellular and Molecular Basis of Pathology, “Vaccine Research and Development”, 1.5 hour lecture, 2008 – 2014.
- Clinical and Translational Scientist Development Seminar Series, “Mentoring.” Sept 2010.
- “Model Systems in Biomedical Research” IGP Module Course, 2015. “Human antibody responses to viruses.”
- “Emerging Genomics Technologies”, Cell Biology 310 course, 2013 – present.
- Clinical Pharmacology fellows’ series, “Human monoclonal antibodies as therapeutic molecules,” 2015-present.
- Protein-Protein Interactions course IGP Module; “Antigen-antibody interactions” lecture, 2016.
- Microbes and Immunity, first year med school course, Intermediate Group Leader, 2016-2017.

Undergraduate Courses

- Freshman seminar series, "Vaccines for the Developing World," Vanderbilt University, February 2011.
- Special Topics in Drug Delivery, Biomedical Engineering 290A/395B Special Topics in Drug Delivery, "Vaccine design and testing," yearly lecture, 2011 – present.

Medical School Courses

- "Microbial Topics" Small Group Leader, Department of Microbiology first year course for medical students. Yearly 1997 – 2002.
- Medical Microbiology Course, First year medical school, lecturer, 2003, 2004. "Acute Viral Infections can be limited to mucosal surfaces: Rotaviruses," and "Orthomyxoviruses."
- "Microbes and Immunity" session leader, first year medical school course, 2015.

High School and Middle School Teaching

- Program for Talented Youth, Summer Enrichment Program, Nashville, TN. Course in "Nanomedicine". Co-taught this one-week course with David Wright, PhD, July 2007.
- Young Scholars Medical Program, Vanderbilt University, July 2007, "Nanotechnology and Medicine." Lecture and laboratory experience for gifted high school students.
- Research Explorers, Tennessee Council of the Boy Scouts of America, boys and girls in grades 9-12. Nanotechnology and infectious diseases lecture, February 2008.
- Vanderbilt Virtual School, Televised national outreach to high school students, "Nanotechnology, Nanobiotechnology, and Nanomedicine." Apr 2010 and Nov 2010.
- School for Science and Math at Vanderbilt, "Human Immunology." Nov 2010.

Community Outreach

"The Swine Origin Influenza Outbreak", Adventure Science Center, Nashville, TN, April 2009.

Press

- Midsouth Regional Emmy Award, Community Service category, for *Nashville Public Television: Children's Health Crisis*, March 2012.
- Multiple appearances in local, national and international media venues, including National Public Radio, CNN, CBS Evening News, BBC, Fox, *New York Times*, *Wall Street Journal*, *El Mundo*, *Correio Braziliense* and others.
- *This Week in Virology* podcast, link here, Apr 2015.

CONTINUING MEDICAL EDUCATION

- 1998 – 2013, Pediatric Faculty Research Conference, Annual presentations on RSV, human metapneumovirus, smallpox or rotavirus infections and human immune responses.
- Infectious Diseases Grand Rounds, 2001 "Human monoclonal antibodies: State of the Art." 2003 "Human immune responses to smallpox vaccination."
- Amos Christie Symposium, 2003. "Human metapneumovirus infections in children."
- Bill Wilkerson Center, Apr 2003. "The child with CMV." CE for physical therapists.
- Vanderbilt Student Health Service, CME conferences 2001, "Osteomyelitis", 2003 "Cat scratch disease"
- Vanderbilt Neonatal Conference. 2003. "Neonatal candidiasis." 1998 "Neonatal syphilis."
- General Clinical Research Center, June 2002, "Use of clinical databases for infectious disease epidemiology studies: Human metapneumovirus infections in children."

- Digestive Diseases Research Retreat 2003. "Rotavirus and immune factors."
- Infectious Diseases fellows' conference, 2000 – 2002. "The academic physician career track."
- Pediatric Clinical Research Office lecture series for fellows, 2003 "Succeeding in academic medicine."
- "Update on Influenza," Vanderbilt Canby Robinson Society, April 2006.
- "Update of Influenza," 19th Annual Infectious Diseases in Children Symposium, Nov 2006.
- Infectious Diseases Grand Rounds, "Broadly cross reactive antibodies to viruses: Are universal HIV and influenza vaccines on the way?" Sept 2010.
- "RSV Vaccine Development." Vanderbilt Program in Molecular Medicine, May 18, 2016
- Vanderbilt Pediatric Grand Rounds
- 2000 "Evidence based approach to treatment of the common cold."
- 2001 "CD40L: Master regulator of human immune responses."
- 2002 "Molecular basis of human immunodeficiencies."
- 2003 "Therapeutic monoclonal antibodies: Coming to a patient near you."
- 2004 "Nanomedicine: Big things on a small scale."
- 2005 "Getting a grip on life: Why infant antibodies induced by virus infection don't function well"
- 2006 "Cell biology of RSV infection: How viruses know where the top of a cell is?"
- 2006 "Reinventing the wheel: Rotavirus vaccines"
- 2014 "Ebola 2104: VUMC preparedness"

CLINICAL TEACHING

- **Pediatric Infectious Diseases.** Two months per year inpatient teaching service, 1996-2002; Two months per year outpatient teaching service 1996 – 2010.
- **General Pediatrics.** One month per year as teaching and admitting physician, 1996 – 2001; Two-four weeks a year as teaching attending, 2002 – 2005.

CLINICAL TRIALS, PI

ClinicalTrials.gov Unique Protocol ID:IRB#170398
 Human Immunome Program
 Start Date: April 2017
 Primary Completion Date: February 28, 2028

CURRENT RESEARCH FUNDING: PRINCIPAL INVESTIGATOR

R01 AI127828, NIAID/NIH

Human Neutralizing Antibodies for Zika Virus
 Multiple PI: Crowe and Michael Diamond (WUSTL)
 01/01/2017 – 12/31/2021

The purpose of this grant is to study the structural and functional basis of Zika virus neutralization by human mAbs isolated from humans.

R01 AI114816, NIAID/NIH

Multiple PI: Crowe and Michael Diamond (WUSTL)
 Structural and Functional Basis of Ultrapotent CHKV Neutralization by Human MABs
 02/10/2015 – 01/31/2020 \$3,662,551

The purpose of this grant is to study the structural and functional basis of ultra potent CHKV neutralization by human mAbs isolated from humans.

U19 AI109711 NIAID/NIH

Advancement of Treatments for Ebola and Marburg Virus Infections

PI: Geisbert (UTMB Galveston)

Role: I am PI for Research Project 3: Therapeutic Human Monoclonal Antibody Treatments for Filoviruses.

03/01/2014 – 02/28/2019

Total U19 budget	\$26,000,000
Subproject Annual Direct Cost:	\$700,000
Subproject Annual Indirect Cost:	\$392,000
Subproject Annual Total Cost:	\$1,092,000

The purpose of this grant is to develop and advance treatments for Ebola and Marburg virus infection. This is a multi-investigator grant. Vanderbilt is conducting studies to isolate and characterize human monoclonal antibodies to filoviruses and their epitopes.

U19 AI117905, NIAID/NIH \$9,044,429

Multiple PI: Crowe and Jens Meiler

Structure Based Design of Antibodies and Vaccines

06/01/2015 – 05/31/2020

The purpose of this grant is to develop new computational modeling methods for the design of novel antibodies and antigens.

Annual Supplement: Infrastructure and Opportunity Fund \$314,000/year

HHSN272201400024C Contract, NIAID/NIH

Title: Genetic and Structural Basis for Virus Neutralization

Program: B Cell Epitope Discovery and Mechanisms of Antibody Protection

Total Award Amount to Vanderbilt

Role: PI

Project Period:	09/30/14 – 09/29/19	
Yr1 Direct cost:	\$541,588	Total directs for all years: \$2,790,297
Yr1 Indirect cost:	\$158,412	<u>Total indirects for all years: \$709,703</u>
Yr1 Total cost:	\$700,000	Total award \$3,500,000

This is a B cell epitope-mapping contract focused on H7 influenza epitopes.

Supplement, August 1, 2015, for universal influenza vaccine development; Total award - \$2,000,000

Supplement, 2016, "Human monoclonal antibodies against Zika virus", for Zika human antibody epitope mapping; 9/1/2016 – 8/31/2017; Total award: \$800,000 (\$506,329.10 direct costs; \$293,670.90 indirect costs).

HHSN272201400018C Contract, NIAID/NIH

Title: B Cell epitope mapping of viral and parasitic antigens

Program: B Cell Epitope Discovery and Mechanisms of Antibody Protection

Role: Vanderbilt subcontract PI

(overall PI is Daved Fremont, Washington University at St. Louis)

Project Period:	09/30/14 - 09/29/19	
Yr1 Direct cost:	\$203,959	Total directs for all years: \$917,199
Yr1 Indirect cost:	\$116,256	<u>Total indirects for all years: \$522,801</u>
Yr1 Total cost:	\$320,215	Total award \$1,440,000

This is a B cell epitope mapping contract. Our site has a subcontract to isolate human monoclonal antibodies to Japanese encephalitis virus and dengue virus serotype 4.

HHSN Contract HHSN272201400058C, NIAID/NIH

Title: B-cell Epitope Discovery and Mechanisms of Antibody Protection for HCV and EBOV Envelope proteins

Program: B Cell Epitope Discovery and Mechanisms of Antibody Protection

Total Award Amount to Vanderbilt

Role: Vanderbilt subcontract PI (overall PI is Ben Doranz, Integral Molecular)

Project Period: 09/30/14 – 09/29/19

Direct cost (YR 1): \$95,541 Total directs for all years: \$281,081

Yr 1 Indirect cost: \$54,459 Total indirects for all years: \$160,218

Yr 1 Total cost: \$150,000 Total award \$441,299

This is a B cell epitope mapping contract. Our site has a subcontract to isolate human monoclonal antibodies to hepatitis C virus and to provide proteins for previously isolated human monoclonal antibodies to Ebola Zaire virus.

Supplement, August 1, 2015, for new human mAbs to Ebola from Nigerian survivors; \$2,000,000.

Defense Threat Reduction Agency (Department of Defense)

Award Number: HDTRA1-13-1-0034

“Human Monoclonal Antibodies against Ebola and Marburg Viruses”

Role: PI

Direct cost award for years 1 and 2: \$1,954,992

Total award: \$4,422,202

04/01/2013 – 03/31/2018

The purpose of this award is to isolate and characterize human monoclonal antibodies to Ebola and Marburg viruses from survivors of those infections.

Human Vaccine Project Initiative, Inc. (HVPI)

\$330,286

“Deciphering The Human Immunome” – Pilot Study I

Role: PI

05/01/2016 – 12/31/2016.

The purpose of this award is to perform complete repertoire immunome sequence analysis on two individuals using nextgen amplicon sequencing, to estimate the size of individual immunomes.

Moderna Therapeutics

\$312,500

“Collaboration Antibody Research Program”

Role: PI

09/01/2015 – 08/31/2016

This is an industry sponsored study to isolate human monoclonal antibody targets for selected infectious diseases targets.

CURRENT RESEARCH FUNDING: CO-INVESTIGATOR

P01 AI106695, NIAID, NIH

Protective immunity following dengue virus natural infections and vaccination

07/29/2015 – 06/30/2020 \$1,491,500 total to VU

PI: Harris, U.C. Berkeley

Role: Co-investigator

This is a program project to study human immune responses to dengue virus vaccination or infection. Our role is to isolate human mAbs to dengue, and to study human antibody gene repertoires.

W31P4Q-14-1-0010 Defense Advanced Research Project Agency (DARPA)

Ebola Virus Specific Human Antibodies from Survivors of Natural Infection (Our subcontract title)

PI: Rafi Ahmed, Emory University

Role: Co-investigator

2/14/2014 – 02/13/2017 \$953,758 total cost to VU

This is a \$10.8 million grant to study the human immune response to Ebola virus infection. Our role is to make human monoclonal antibodies from the blood of Ebola survivors treated at Emory University.

W31P4Q-13-1-003 Defense Advanced Research Project Agency (DARPA)

Immediate and Persistent E-DNA Protection Against Dengue

PI: Weiner, University of Pennsylvania

My role: PI of the Vanderbilt subcontract site

7/1/2014 – 04/30/2017

\$288,938

The purpose of this primary grant is to study the delivery of antiviral antibody genes by DNA. Our subcontract site is working on anti-staphylococcal and anti-chikungunya antibodies, and antibody discovery technologies.

W31P4Q-15-1-0003 Defense Advanced Research Project Agency (DARPA)

PI: Simon (Inovio)

My role: PI of the Vanderbilt subcontract site

3/12/2015 – 1/7/2017

Total cost \$843,000

The purpose of this grant is to develop and test DNA vectored delivery of antibody genes in humans. Our role is to provide antibody genes for human monoclonal antibodies to Ebola virus and Marburg virus.

CBRNE Mission Support Contract (ECBC/RDECOM)

U.S. Army Research and Development

Prime contractor: ITT; Vanderbilt is subcontractor

Total award: \$485 million.

My role on this is as one of four Vanderbilt investigators proposing and performing laboratory based concepts in microbiology and immunology as part of this defense related research contract.

NIAID Vaccine and Treatment Evaluation Unit (VTEU)

09/13 – 08/22

HHSN272201300023I

\$95,170,200

Role: Co-Investigator

The VTEU, in existence for over 50 years, is a network of 9 academic centers whose work focuses on the evaluation of new vaccines and new therapeutics for infectious diseases.

Role: Co-Investigator, to supervise and conduct immunology studies, especially studies of H3N2 variant and H7 virus antibody-mediated immunity.

Funded task orders under this contract

- “Assays for RSV Vaccine Development”

Task Order #2

Protocol 13-0089 / 14-0074

2/1/2015 – 12/31/2018

Funded Amount:

Option D-2 (Line 3) Lab Analysis = \$752,213; [Crowe Lab portion is \$671,780]

The goal of this work is to develop and test new assays for detecting RSV B cell responses in children.

- “A Comparison of Immune Responses of DTwP (whole-cell pertussis vaccine) vs. DTaP (acellular pertussis vaccine) in Healthy Infants and Young Children”

Task Order #5

Protocol 13-0090

4/17/2015 – 12/31/2019

Funded Amount:

Option D-3 (Line 4) B-Cells = \$1,259,994, [Crowe Lab portion is \$689,963]

The goal of this work is to study pertussis-specific B cell responses in children in Peru and to compare whole cell and acellular vaccine responses.

“A Phase I Randomized, Double-Blind, Controlled Trial in Healthy Adults to Assess the Safety, Reactogenicity, and Immunology of a Monovalent Inactivated Influenza A/H5N8 Virus Vaccine Administered Intramuscularly Given with or without AS03 or MF59 Adjuvants: Assessment of Immunological Responses and Lymphocyte Interplay”

Task Order #11

Protocol 15-0066

9/16/2016 – 6/30/2019

RTOP 15-0066.B1C1D1.0041 2016 – 2017

Options 6, 8, 10 for B cell, antibody, and epitope studies in H5 (gyrfalcon clade 2.3.4.4) N8 vaccine study

Funded Amounts:

Option D-6 (Line 2) B-Cells = \$264,114, [Crowe Lab portion is \$217,919]

Option D-8 (Line 3) ELISA = \$186,448, [Crowe Lab portion is \$135,530]

Option D-10 (Line 4) Epitope = \$560,492, [Crowe Lab portion is \$511,314]

Crowelab total funding: \$863,000 total cost.

These studies will characterize human B cell responses after H5N8 CSL vaccine administration, with or without AS03 or MF59 adjuvant.

5P30 DK058404-11, NIH/NIDDK (Peek) \$737,850

Molecular and Cellular Basis of Digestive Disease

05/31/2017

Role: Core Director

This is our Digestive Diseases Research Center. My role is to direct the Flow Cytometry Shared Resource.

06/1/2012 –

5P30 CA068485, NIH/NCI (Pietenpol)

Cancer Center Support Grant

09/01/1997 – 08/31/2020

This is the Cancer Center Support Grant from NCI that supports the Vanderbilt Ingram Cancer Center. I am Director of the Flow Cytometry Shared Resource.

2 R01 AI073755-06, NIAID/NIH (Diamond/Washington Univ. St. Louis)

“Antibody-Based Protection Against Dengue Virus”

VU=\$30,000 direct/yr

Role: Co-Investigator, PI of Vanderbilt subcontract

06/18/2013 – 05/31/2018

The goal of this grant is to study the function of antibodies against dengue virus.

2016 Supplement: Antibody-Based Protection Against Zika Virus

Budget Period-2/9/2016 – 5/31/2017; Budget- \$51,905 (33,060 direct cost, 18,844 indirect cost)

Vanderbilt Program for Next-Generation Vaccines – Integrating Structural Biology with Big Data

Trans-Institutional Programs (TIPs) funding

7/1/2016 – 6/30/2019

\$2,100,000

This is a Vanderbilt funded program to further develop a computational structure based vaccine program.
Role: Co-PI

Takeda Pharmaceutical Company

Delineation of polyclonal antibody specificities in sera from donors infected by or vaccinated against dengue viruses
Role: Co-PI

PREVIOUS RESEARCH FUNDING (with direct amounts):

07/01/96 – 06/30/98 "Ontogeny of specific antiviral B cells in human neonates" 1996 Pfizer Scholars Program for New Faculty. Principal Investigator: James E. Crowe, Jr.	\$ 130,000
07/01/96 – 06/30/99 "Vaccines for neonates" The Memorial Foundation , Goodlettsville, TN. Served as startup funds for Crowe Lab (a competitive foundation award)	\$ 300,000
06/1998 "Technologies for generation of single cell derived human B cell clones" Pasteur Merieux Connaught University Liaison Program Award Principal Investigator: James E. Crowe, Jr.	\$ 30,000
02/01/1998 – 01/31/2000 "Development of virus-specific B-cell immune responses in human neonates" Basil O'Connor Starter Scholar Research Award March of Dimes Birth Defects Foundation Principal Investigator: James E. Crowe, Jr.	\$ 100,000
01/1999 RSV neutralization assays Kaiser Permanente Vaccine Study Center, CA	\$ 1,000
11/1/99 – 10/31/00 "Generating therapeutic human monoclonal respiratory syncytial virus (RSV) Abs using Xenomouse technology" Abgenix, Inc. Principal Investigator: James E. Crowe, Jr.	\$ 45,065
02/01/99 – 1/31/02 "CD40L in allograft tolerance and viral immunity" 5R01AI44078-02, NIAID, NIH Principal Investigator: Richard Pierson, MD My role was that of a Co-investigator (5% effort)	\$ 264,458/yr
March 2001 "QP21 Q-Pix Colony Picker" NIH NCRR Shared Instrument Award	\$ 113,681

Principal Investigator: Raymond L. Mernaugh, PhD
My role was that of a Co-investigator

02/01/2001 – 01/31/2002 \$ 91,374

“The correlation between natural rotavirus infection and lymphocyte activation ”

Wyeth Lederle Vaccines and Pediatrics

Principal Investigator: James E. Crowe, Jr.

11/01/2000 – 10/31/2002 \$ 183,820/yr

“Defining epitope specificity and HLA restriction patterns in RSV-induced CD8+ T cells”

Wyeth Lederle Vaccines and Pediatrics

Principal Investigator: James E. Crowe, Jr.

10/01/1997 – 08/31/2003

“Ontogeny of RSV-Specific B Cell Responses in Humans”

\$ 150,000/yr

R01 HD36311, NICHD, NIH

Principal Investigator: James E. Crowe, Jr.

09/01/2000 – 08/31/2003

“Respiratory virus neutralization mediated by intracellular antibodies”

\$ 150,000/yr

R21 DE14039-01, NIDR, NIH

Principal Investigator: James E. Crowe, Jr.

09/15/2000 – 09/14/2003

“Human monoclonal antibodies that neutralize vaccinia virus”

\$ 144,061/yr

U01 AI48512-01, NIAID, NIH

Principal Investigator: James E. Crowe, Jr.

01/22/96 – 06/30/2003

“Animal Models for RSV Pathogenesis” section

\$ 627,717/yr

In “Respiratory Pathogens Research Unit”

N01-AI-65298, NIH-NIAID

Principal Investigator: Robert Couch, MD

My role was that of a Co-investigator.

01/01/02 – 12/31/03

“Human metapneumovirus infection”

\$ 50,000

Vanderbilt Intramural Research Program, Discovery Award

Principal Investigator: James E. Crowe, Jr.

This grant provided support for molecular identification of isolates of a newly identified virus.

MedImmune, Inc.

Human metapneumovirus infections of children

PI: James E. Crowe, Jr.

Yearly Support (Direct Cost)

\$ 151,850

Total Award Amount (Direct and Indirect)

\$ 242,960

04/01/03 – 3/31/04

This grant provided support for exploration of the genetic diversity of isolates of a newly identified virus.

P30 DK-58404, NIDDK/NIH

Molecular and Cellular Basis of Digestive Diseases

Co-Investigator; (PI is Raymond DuBois)

Yearly Support (Direct Cost) \$ 595,862
 Total Award Amount (Direct and Indirect) \$ 2,980,282
 06/01/02 – 05/31/04 (our project)
 This was a Digestive Diseases Research Center Pilot and Feasibility Grant, entitled Intracellular neutralization of rotavirus, for \$25,000/year to study a novel method of virus neutralization by IgA antibodies.

1PN1 EY-16567, NEI, NIH

Immunomodulation on the Nanoscale: Vanderbilt Alliance for Nanomedicine

PI: James E. Crowe, Jr., MD

Yearly Support (Direct Cost) \$ 50,000

Total Award Amount (Direct and Indirect) \$ 75,500

09/30/04 – 03/31/05

This was a planning grant for an NIH Nanomedicine Center. I am the Director for the Vanderbilt Alliance for Nanomedicine, a multi-disciplinary, multi-institution center involving Vanderbilt University Medical Center, Vanderbilt University, and Oak Ridge National Laboratory.

“Epitope Discovery Award”, 2002-2004, Vanderbilt University Award \$ 50,000

PI: David Wright, PhD

Role: Co-Investigator

The purpose was to develop new methods of epitope discovery using nanoparticles.

1 S10 RR019032 Shared Instrumentation Award, NCRR, NIH

High throughput flow cytometer

PI: James E. Crowe, Jr.

Total Award Amount \$ 459,207

04/01/2004 – 03/31/2005

This application was for a new flow cytometer instrument for the institutional flow cytometry core lab for which I am the Director.

The Defense Advanced Research Projects Agency (DARPA)

“Network inference of human B cells using BioSPICE”

Co-Investigator; (PI was Michael Simpson at ORNL)

Yearly Support (Direct Cost) \$ 150,000

(Crowe lab portion only) \$ 35,000

03/01/05 – 06/30/06

This was a project with scientists at Oak Ridge and UT to develop novel mathematical models for analyzing time series data of B cell signaling networks.

R03 TW-00149 (FIRCA), Fogarty Center and NIAID, NIH

“Epitope specificity of RSV nucleoprotein-specific T-cells”

PI: James E. Crowe, Jr.

Yearly Support (Direct Cost) \$ 32,000

Total Award Amount (Direct and Indirect) \$ 96,000

07/01/02 – 06/30/05

This was an award for study of RSV-specific T cell responses in subjects in South Africa.

R01 AI-48677, NIAID, NIH

“Novel methods for generation of human B cell hybridomas”

PI: James E. Crowe, Jr.

Yearly Support (Direct Cost) \$ 225,000

Total Award Amount (Direct and Indirect) \$ 1,189,125

2004 Supplemental Award \$ 41,500

09/01/2002 – 08/31/2006

The purpose of this grant was to develop new methods for generation of human hybridomas. This was a Bioengineering Research Grant award, principally aimed at development of electrofusion devices and protocols.

R01 AI-53222, NIAID, NIH

“Human T cell responses to RSV”

PI: James E. Crowe, Jr.

Yearly Support (Direct Cost) \$ 225,000

Total Award Amount (Direct and Indirect) \$ 1,176,375

07/01/03 – 06/30/07

This project investigated the specificity and phenotype of human T cell responses to respiratory syncytial virus.

Alnylam, Research Contract

“Effect of inhibitory RNAs on RSV replication in cotton rats”

09/15/06 – 09/14/07

Annual Costs \$ 15,971

This was a research contract to study the effect of siRNAs on RSV replication.

Role: PI

R01, AI-57661, NIAID, NIH

“Cell-mediated immune responses to vaccinia viruses”

PI: James E. Crowe, Jr.

Yearly Support (Direct Cost) \$ 225,000

Total Award Amount (Direct and Indirect) \$ 1,189,125

2004 Supplemental Award, direct \$ 150,000

9/15/03 – 2/28/2008

This grant was a biodefense related study of the human T cell response to vaccinia virus inoculation (for immunization against smallpox).

M01-RR-000095, NCRR, NIH GCRC Supplement Award

“Human Immunology Core Laboratory”

PI: James E. Crowe, Jr. (Jeff Balsler was PI of the parent GCRC)

Yearly Support (Direct Cost) \$ 271,668

Total Award Amount (Direct and Indirect) \$ 317,541

01/01/03 – 10/31/07

This grant provided for support of a core laboratory aimed at increasing the use of human cytokine and T cell assays in the context of clinical trials.

S10 RR023901, NCRR, NIH

\$ 425,546

“Olympus FV1000 Confocal Fluorescence Microscope”

04/01/07 – 03/31/08

PI: James Goldenring

Role: Co-Investigator

This was a shared instrumentation grant application for a confocal microscope.

N01 AI-25462, Vaccine Treatment and Evaluation Unit, NIAID/NIH

“Evaluation of control measures against infectious diseases other than AIDS”

Co-Investigator; (PI was Kathryn Edwards)

Yearly Support (Direct Cost) \$ 2,628,646

Total Award Amount (Direct and Indirect) \$ 11,230,143

06/01/2002 – 12/31/2008

This was a vaccine testing center contract. The bulk of the work in the contract was aimed at testing vaccines in adults for purposes of biodefense. My role was to supervise and conduct immunology studies, especially studies of cell-mediated immunity.

1UL 1RR024975 from the National Center for Research Resources, NIH

Vanderbilt Institute for Clinical and Translational Research

2008 Equipment Awards

1. Multiplex detection of human cytokines	\$25,000
2. Image analysis of human cells infected with viruses	\$12,899

NIAID Regional Centers of Excellence New Opportunities Award

“Passive immunotherapeutics for select agents”

PI: James E. Crowe, Jr.

Yearly Support (Direct Cost) \$ 103,698

Total Award Amount \$ 318,000

03/01/2007 – 02/28/2009

This was a biodefense grant to develop human monoclonal antibodies to select agents.

2008 Pfizer Visiting Professor: Infectious Diseases \$ 7,500

Role: Principal Investigator

This was a competitive visiting professor program grant we were awarded to support the visit of Dr. Dennis Burton, PhD to visit the Vanderbilt Vaccine Center that I direct.

U54 AI057157, NIAID/NIH

Region IV Southeast Regional Center of Excellence in Emerging Infections and Biodefense

Co-Investigator; (PI is Fred Sparling [UNC-CH])

Yearly Support (Direct Cost to our Core) \$ 156,000

03/01/07 – 2/28/09

This award was a multi-institutional award to support regional expertise in biodefense. I was the Director of Core C, the Monoclonal Antibody and Biosensor Core.

U19 AI-057229, NIAID, NIH

“Protective mechanisms against a pandemic respiratory virus”

Co-Investigator; (PI is Ann Arvin [Stanford])

Yearly Support (Direct Cost) (our portion) \$ 60,000

Total Annual Award Amount \$ 2,000,000

09/01/03 – 08/31/08

This was Project 3 (B Cell Immunity to Influenza) of a center for translational human immunology based at Stanford. I am studying the molecular basis for heterosubtypic immunity by cloning B cells specific for influenza HA.

U19 AI057229-05S1 \$102,236

A Type 3 supplement was awarded to Crowe on 9/25/08 for H5N1 human monoclonal antibody studies.

N01 AI25462 (Edwards), NIH/NIAID

CISA Genomics Initiative

The purpose of this project was to develop techniques for studying the association of genetic variation with adverse events following influenza vaccination.

Role: Co-Investigator

R01 AI 057933, NIAID, NIH

“Human antibody responses to rotavirus”

PI: James E. Crowe, Jr.

Yearly Support (Direct Cost) \$ 225,000
Total Award Amount (Direct and Indirect) \$ 1,189,125

07/01/04 – 06/30/08 (no cost extension to 06/30/09)

This project used single cell sorting techniques to isolate and analyze human rotavirus specific B cells in order to determine the immunodominant gene segments used in the human rotavirus specific B cell repertoire.

R01AI 59694, NIAID, NIH

“Bioinformatics strategies for biodefense vaccine research”

Role: Consultant; (PI is Jason Moore, PhD)

Yearly Support (Direct Cost) \$ 356,625
Total Award Amount (Direct and Indirect) \$ 1,726,181

7/1/04 – 6/30/08

The purpose of this application was to develop computer algorithms to analyze complex protein array data obtained for cytokines and chemokines made in response to vaccines relevant to biodefense. The data being analyzed is from my laboratory. I was supervising one of the bioinformatics faculty members.

N01 AI40079, NIAID, NIH

“Large-Scale Vaccinia Virus-Derived CTL Epitope Discovery”

PI: Sebastian Joyce

Role: Co-investigator

Yearly Support (Direct Cost) \$ 963,432
09/04/2004 – 09/03/2009

The goal of this contract was to identify CTL epitopes for vaccinia virus using a novel approach to identify natural ligands.

Role: Co-investigator.

R01 EB 04537, NIBIB, NIH

“Viral detection using fluorescent nanocrystals”

PI: David Wright

Role: Co-Investigator

Yearly Support (Direct Cost) \$ 300,000
09/15/06 – 08/31/09

This was an application to develop quantum dot detection strategies for RSV proteins and RNAs.

R01 AI 59597, NIAID, NIH

Alphavirus-based Vaccine for Prevention of MPV

PI: James E. Crowe, Jr.

Yearly Support (Direct Cost) \$ 250,000
Total Award Amount (Direct and Indirect) \$ 1,304,274

03/15/05 – 02/28/09, no cost extension to 02/28/2010.

The purpose of this application was to develop alphavirus-vectored MPV and RSV vaccines.

R01 AI 59597-03S1 \$145,860

07/01/2007 – 02/28/09

A Diversity Supplement to this grant for David Vigerust, PhD also was awarded, for training purposes.

R01 AI 59597-03S2 \$100,000

A one-year supplement was awarded in 2007 for the study of HIV- specific B cell repertoires in response to RFA-AI-07-016 [NIAID Competing Supplements (Revisions) for B Cell Immunology and HIV-1 Neutralizing Antibody Projects (R01)].

R03 AI068069, NIAID, NIH

Epidemiology and Clinical Features of Human Coronavirus

PI: John Williams, MD

02/01/2007 – 01/31/2010

Role: Consultant

5P30 CA068485, NCI, NIH

\$ 3,448,549

Cancer Center Support Grant

PI: Jennifer Pietenpol, PhD

09/28/2004 – 08/31/2009

This was the Cancer Center Support Grant from NCI that supports the Vanderbilt Ingram Cancer Center. I was Director of the Flow Cytometry Shared Resource that became a new shared resource as of September 2004.

R01 AG 15978, NIA, NIH

PI: M.A. Westerink (Med. College of Ohio)

Elderly Immune Response to Pneumococcal Polysaccharide

09/01/06 – 08/31/10

This was an application to study human B cells responses to pneumococcal polysaccharides.

Role: Consultant

R43 AI-63681, NIAID, NIH

A Mab Plantibody Cocktail for RSV Immunoprophylaxis

PI: Larry Zeitlin (Mapp Pharmaceuticals)

I am the academic Co-Investigator

Yearly Support (Direct Cost)

\$ 300,000

Yearly Support, Crowe portion (Direct Cost)

\$ 99,732

12/01/05 – 11/30/08; no-cost extension to 11/30/09

The purpose of this application was to develop human monoclonal antibodies directed to RSV and produced in plants as a prophylactic pharmaceutical for prevention of RSV disease.

Role: Co-investigator.

R21 AG 30321, NIA, NIH

Respiratory Syncytial Virus Nanoparticle Vaccines

Role: PI

Yearly Support (Direct Cost)

\$ 125,000

09/30/2007 – 07/31/2009 (NCE to 07/31/2010)

This was a grant to develop nanoparticle-based vaccines for RSV.

S10 RR 026719, NCRR, NIH

Acquisition of a ClonePix FL System

02/01/2010 – 01/31/2011

PI: Albert Reynolds, PhD

Role: Co-Investigator

This was a shared instrumentation grant to obtain an automated cell cloning device.

Burroughs Wellcome Fund

Clinical Scientist Award in Translational Research

Immunology and Cell Biology of Human Metapneumovirus Infections

PI: James E. Crowe, Jr.

Yearly Support (Direct Cost)

\$ 150,000

Total Award Amount

\$ 750,000

07/01/2005 – 06/30/2010

This was an application to support a training program for physician scientists in the study of human metapneumovirus infections.

R21 AI083574

Rotavirus VP6 Specific Human IgA Antibodies

Role: PI

Total Support (Direct Cost) \$ 275,000

07/01/2009 – 06/30/2011

This was a grant to study intracellular neutralization of rotavirus by IgA antibodies, and to develop bispecific scFv that mimic antiviral IgAs.

P01 AI 058113, NIAID, NIH

Molecular and Biological Characterization of Pandemic Flu

PI: Adolfo Garcia-Sastre, Mt. Sinai School of Medicine.

My role: PI of B Cell Project on this P01

Total annual support to our laboratory: \$ 230,250

Duration: 2009 – 2011.

U54 AI 057157, NIAID, NIH, Supplement

Proteins for Dengue Project

The purpose of this supplement is to support equipment and supplies for large-scale production of dengue virus reagents for our RCE project (above).

Total award: \$126,903

Role: PI

2009-2010

P30 AI 054999, NIAID, NIH

Vanderbilt-Meharry Center for AIDS Research

Co-Investigator; (PI is Richard D'Aquila)

Yearly Support (Direct Cost) \$ 528,468

Total Award Amount (Direct and Indirect) \$ 2,291,517

05/15/2003 – 08/31/2011

This was a center award to enhance the institutional environment for studies related to the pathogenesis of HIV infection. I was a co-investigator, helping to direct the immunopathogenesis laboratory.

U19 AI-57229, NIAID, N

5P30 DK058404-10, NIH/NIDDK (Peek) \$ 737,850

Molecular and Cellular Basis of Digestive Disease

06/1/2007 –

05/31/2012

Role: Core Director

This is our Digestive Diseases Research Center. My role was to direct the flow cytometry shared resource.

NIH S10 Parallel Computer with High Memory Nodes, 2013. \$ 597,524

Role: Co-Investigator

Vanderbilt Ingram Cancer Center Support Grant pilot project

“Human neonatal control of transforming growth factor ”

Role: PI

Total Award: \$ 35,000

09/1/2011 – 08/31/2012

This was a pilot project award to explore the mechanism for why infants do not regulate TGF in the same manner as adults.

Innovation and Discovery in Engineering and Science (IDEAS) \$ 100,000/year
A Multiplexed Diagnostic for the Detection of Respiratory Viruses”
David Wright (chemistry) with Frederick Haselton (biomedical engineering); and James Crowe (Pediatrics) –
Project involving detection of respiratory viruses using nanodevices.
July 1, 2010 – June 30, 2012

U01 AI 78407, NIAID, NIH
Clonal Analysis of the Human B Cell Response to HIV
PI: James E. Crowe, Jr.
02/01/2008 – 02/28/2013
Yearly Support (Direct Cost) \$ 479,500
Total Award Amount (Direct and Indirect) \$ 2,397,500
The purpose of this grant was to isolate human monoclonal antibodies to HIV, and to study HIV specific human B cell repertoires.

- **3 U01 AI 78407-02S1, Administrative supplement** \$ 882,141
09/28/2009 – 08/31/2012
The purpose of this supplement was to use 454 high throughput sequence analysis for identification of HIV-specific human monoclonal antibodies.

- **3 U01 AI078407-03S1, Administrative supplement** \$ 7,750
06/01/2010 – 09/30/2010
The purpose of this supplement was to hire one undergraduate research assistant for the summer to assist with the project.

- **3 U01 AI078407-03S2, Administrative supplement** \$ 51,307
09/07/2010 - 09/06/2011
The purpose of this supplement was to support one underrepresented minority graduate student for training.

S10 RR 027977, NCRR, NIH
“Multi-Laser Flow Cytometer for Polychromatic Analysis.”
Role: PI
This was a Shared Instrumentation Grant application for a custom five-laser LSRII cytometer.
Total Award \$ 482,250

NIAID, NIH ARRA administrative award for supplemental funding \$ 499,170
“Alphavirus-based Vaccine for Prevention of MPV Infection”
Role: PI
7/26/10 – 7/25/2012
The purpose of this supplement to our Regional Centers of Excellence award was to support the production of experimental vaccine lots for RSV and MPV with testing for immunogenicity and protective efficacy in nonhuman primates.

1S10 OD 012324-01
Acquisition of a super-resolution optical microscope
PI: Matt Tyska
My role: Major User
Total annual award: \$600,000
2012
This was a Shared Instrumentation Grant application for a super-resolution optical microscope.

2013 Administrative Supplement, Scientific Research Meeting \$15,000
The purpose of this supplement was to conduct a research-planning meeting in Chicago for an interdisciplinary group to develop Chikungunya and dengue virus antibodies and vaccines.
PI: Crowe

1G20RR030956-01, NCRR, NIH
VANTAGE: Consolidation to Create the Vanderbilt Technologies for Advanced Genomics
PI: Susan Wentz, PhD
04/25-2010 – 04/24/2012
Role: Co-Investigator
This was a major core renovation grant to integrate our flow cytometry core with genomics core services.

March of Dimes Foundation
“Epithelial cell stress response and RSV infection”
Role: PI
Total Award: \$240,000
2010-2013
The purpose of this grant was to study the role of stress granule formation in RSV replication in epithelial cells.

3UL1 RR 024975-03S4 NCRR, NIH
“Project Management for Translational Science”
The Vanderbilt Institute for Clinical and Translational Research (VICTR) UL1
Direct - \$189,680, Indirect - \$104,798, Total - \$294,478
PI: Gordon Bernard
My role: Co-investigator, PI of Project that is target of the supplement
The purpose of this supplement was to support a Project Manager to move our experimental RSV vaccine candidate into clinical trials.

R21 AI092268, NIAID/NIH
Epitope shifting and antibody maturation during rotavirus infection
PI: Ben Spiller,
My role: Co-investigator
\$194,882

HHSN272200900055C Contract, NIAID/NIH (Integral Molecular)
B Cell Epitope Discovery and Mechanisms of Antibody Protection
Role: PI of Vanderbilt subcontract
07/01/2012 – 06/30/2013

HHSN272200900055C Contract, NIAID/NIH (PI: Doranz; Integral Molecular)
“Antibodies to Chikungunya virus and hepatitis C virus”
Federal Direct Costs to VU: \$128,074
Total Award: \$179,303
Role: Vanderbilt PI of subcontract
07/01/2012 – 06/30/2013
This was a B cell epitope-mapping contract; we had a subcontract to develop human monoclonal antibodies to hepatitis C and Chikungunya viruses

U54 AI 057157, NIAID, NIH
Region IV Southeast Regional Center of Excellence in Emerging Infections and Biodefense
Co-Investigator; (PI is Fred Sparling [UNC-CH])
Yearly Support (Direct support to our laboratory): \$ 172,900

09/04/09 – 2/28/14

This award was a multi-institutional award to support regional expertise in biodefense. I am the project director for Project 9.1, "Genetic and Structural Determinants of Human Antibodies to Dengue Virus."

P01 AI 078064, NIAID, NIH

Programming HIV Immunity for Broadly Neutralizing Antibodies by Vaccination

Co-Investigator; (PI is Nancy Haigwood [Oregon Primate Center]; VUMC PI is Spyros Kalams)

Total support: \$ 1,683,417

Direct annual cost to our laboratory: \$ 83,005

2/1/09 – 1/31/14

The overall goal was to design novel vaccines based on Env genes derived from virions (plasma RNA, not cellular DNA) from HIV-infected subjects who develop broad Nabs in an accelerated fashion (<3 years). Our part of the project is to make human mAbs from HIV-infected individuals.

R01 AI 090656 NIAID, NIH (HITIT award) VU: \$93,000 directs/year

Broadly Reactive Antibodies against Chimeric Virus-Host Antigens

PI: Donald Forthal, UC-Irvine

07/01/2010 – 06/30/2014

Role: Co-Investigator.

The purpose of this grant was to determine whether humans infected with HIV make antibody responses to antigens that are chimeras of virus and host proteins.

R21 AI098592, NIAID/NIH (Spearman/Emory)

VU-\$75,000 direct/yr

HIV-specific B cell repertoire in humans following cross-clade immunization

07/01/2012 – 06/30/2014

Role: Co-Investigator

The purpose of this grant was to determine the molecular basis for cross-clade responses in HIV vaccinated individuals.

N01 AI 25462, Vaccine Treatment and Evaluation Unit, NIAID, NIH

Evaluation of control measures against infectious diseases other than AIDS

Co-Investigator; (PI is Kathryn Edwards)

Yearly Support (Direct Cost)

\$ 3,102,081

Total Award Amount (Direct and Indirect)

\$ 23,700,000

11/01/2007 – 10/31/2014

This was a vaccine testing center contract. The bulk of the work in that contract was aimed at testing vaccines in adults for purposes of biodefense.

HHSN272200900047C Contract, NIAID/NIH

Genetic and Structural Basis for Virus Neutralization

B Cell Epitope Discovery and Mechanisms of Antibody Protection

Role: PI

Annual award: \$ 660,590

Total Award: \$ 5,281,906

09/30/2009 – 09/29/2014

This was a B cell epitope-mapping contract focused on H5 influenza and poxvirus epitopes

5T32 AI 89554, NIAID, NIH

Virology Training Program

Role: PI of the Training Program, and Faculty Mentor

Total Award: \$796,861

05/01/2010 – 04/30/2015

This was a training grant program to train PhD candidate students in molecular and cellular virology research. Annual Costs - Federal Direct Costs \$172,928, Federal F&A Costs \$8,714, Total Budget \$181,642

Defense Threat Reduction Agency (Department of Defense)

Award Number: HDTRA1-10-1-0067

Molecular and Structural Basis for Fine Specificity of Antiviral Antibodies

Role: PI

Total Award \$2,000,000

2010-2015

The purpose of this award was to isolate and study human monoclonal antibodies to the 2009 pandemic influenza virus pH1N1.

5P30 CA068485, NIH/NCI (Pietenpol) \$3,781,250

Cancer Center Support Grant

09/01/2010 – 08/31/2015

This was the Cancer Center Support Grant from NCI that supports the Vanderbilt Ingram Cancer Center. I am Director of the Flow Cytometry Shared Resource.

R01 GM 094198, NIGMS, NIH Direct cost \$227,125/year

Single RNA Sensitive Probes for Studying Viral Replication and Budding

PI: Philip Santangelo, Georgia Tech

Role: Co-investigator

7/1/2010 – 6/30/2015

The purpose of this grant was to develop novel imaging probes for RNA virus genomes in live cells.

R21 AI103834-01, NIAID/NIH

Human Neutralizing Monoclonal Antibodies for Rift Valley Fever Virus

PI: James E. Crowe, Jr.

06/01/2013 – 05/31/2015

Total Award Amount (Direct and Indirect) \$462,799

The purpose of this grant was to isolate human monoclonal antibodies to Rift Valley fever virus.

NIAID Vaccine and Treatment Evaluation Unit (VTEU) 11/07 - 09/15

HHSN272200800007C

Role: Co-Investigator

The VTEU was a network of 8 academic centers whose work focuses on the evaluation of new vaccines and new therapeutics for infectious diseases, other than HIV / AIDS. My role is to supervise and conduct human immunology studies.

Completed Options Under this Contract

- "A Phase II Open-Label study in Healthy Pediatric Populations to Assess the Safety, Reactogenicity, and Immunogenicity of an Intramuscular Unadjuvanted Subvirion Monovalent Inactivated Influenza H3N2 Variant (H3N2v) Vaccine

3/8/2013 – 3/7/2015

Contract HHSN272200800007C, Option 10G-12-0015

Funded Amount \$500,000

This was an award to study human B cell responses to H3N2 variant (H3N2v) vaccine.

- “A Phase II Randomized, Double-Blinded, Controlled Study in Healthy Adults to Assess the Safety, Reactogenicity, and Immunogenicity of a Monovalent Influenza A/H7N9 Virus Vaccine Administered at Different Dosages Given with and without AS03 and MF59 Adjuvants”

8/29/2013 – 8/28/2015

Contract HHSN272200800007C, Option 10I-13-0033

Funded Amount \$500,000

This was an award to study human B cell responses to H7N9 vaccine.

P30 AI-54999, NIAID/ N

R01 AI106002, NIAID/NIH

Molecular Determinants of Cross-Reactive Antibody Response to Influenza in Humans

PI: James E. Crowe, Jr.

08/15/2012 – 07/31/2016

Yearly Support (Direct Cost)

\$ 250,000

Total Award Amount (Direct and Indirect)

\$ 1,560,000

The purpose of this grant was to isolate human monoclonal antibodies to influenza, and to study influenza specific human B cell repertoires, with emphasis on broadly cross-reactive antibodies.

R56 AI110750, NIAID/NIH

Hybrid Methods for Prediction and Design of Novel Human Influenza Antibodies

09/05/2014 – 08/31/2015

Role: Co-PI, with Jens Meiler

Total Award Amount

\$433,256

The purpose of this award was to develop and implement new computational methods for design of antibodies to influenza virus.

HHSN272201400007C (Rothman/Pekosz/JHU); Center of Excellence for Influenza Research and Surveillance (CEIRS)

“The Human Influenza Immunome Project”

10/1/2014 – 11/14/2016

Direct Cost First Year Award:

\$373,248

Total First Year Award to Vanderbilt:

\$585,999

Role: Vanderbilt subcontract PI (overall PI is Andrew Pekosz, Johns Hopkins University)

The purpose of this subcontract was to perform and analyze high throughput sequencing experiments to define the human B cell repertoire relevant to influenza virus.

R01 AI107731-01 (de Silva, UNC), NIH/NIAID

Molecular Basis of Dengue virus neutralization by human antibodies

\$100,000/year direct cost

07/01/2013 – 06/30/2016

Role: Co-Investigator

This was a grant to define the molecular basis of neutralization of dengue virus.

1 R43 AI118087-01, NIAID, NIH

Universal Flu Vaccine Based on Conformationally Locked Soluble Headless HA

PI: Yondola, Avatar

Role: Academic collaborator, making/providing HA-stem specific antibodies.

02/17/2015 – 02/16/2017

This was an SBIR grant led by Avatar Medical, LLC. to develop a universal influenza vaccine using a headless HA construct.

Bill and Melinda Gates Foundation

Ebola Human Antibody Initiative: Isolation of Ebola-reactive human antibodies from subjects with seroreactivity

Atreca Consortium (Atreca, Inc./UCLA/Vanderbilt/BSRI)

12/2014 – 11/2016

Role: Co-Investigator

This was a grant to isolate and study Ebola antibodies from the cells of survivors in Democratic Republic of the Congo.

PATENTS AND PATENT APPLICATIONS PENDING

A) For human monoclonal antibodies against RSV - NIH E-001-1996 patent family

U.S. Patent Serial #08/162,102 entitled HUMAN NEUTRALIZING MONOCLONAL ANTIBODIES TO RESPIRATORY SYNCYTIAL VIRUS. Issue date 6/9/98. Inventors: Dennis Burton, Carlos Barbas, Robert M. Chanock, Brian R. Murphy, and **James E. Crowe, Jr.**

US 2012/0087909 A1. NEUTRALIZING MONOCLONAL ANTIBODIES TO RESPIRATORY SYNCYTIAL VIRUS - Pending. Inventors: Glenn Pilkington, Page Gilmour, **James Crowe, Jr.**, Brian Murphy, and Robert Chanock

MONOCLONAL ANTIBODIES TO RESPIRATORY SYNCYTIAL VIRUS AND USES THEREOF, Inventor: **James E. Crowe, Jr.**, Filed July 2007. US Patent number 7,867,497; Issued January 11, 2011. PCT2008/077370.

B) For biologically derived RSV strains - NIH E-123-1992/0,1,2,3 patent family

USSN 08/327,263, entitled ATTENUATED RESPIRATORY SYNCYTIAL VIRUS VACCINE COMPOSITIONS - Pending. Inventors: Brian Murphy, Robert Chanock, **James Crowe, Jr.**, Mark Connors.

USSN 08/453,294, entitled ATTENUATED RESPIRATORY SYNCYTIAL VIRUS VACCINE COMPOSITIONS - Pending. Inventors: Brian Murphy, Robert Chanock, **James Crowe, Jr.**, Mark Connors, Lee Hsu, and A.R. Davis.

USSN 08/453,304, entitled ATTENUATED RESPIRATORY SYNCYTIAL VIRUS VACCINE COMPOSITIONS - Pending. Same inventors as 08/453,294

C) For recombinant RSV strains - NIH E-142-1996/0,1,2 patent family

USSN 60/021,773, a provisional patent application entitled RATIONAL DESIGN OF ATTENUATED RESPIRATORY SYNCYTIAL VIRUS VACCINES -Converted to an ordinary application. Inventors: Brian Murphy, Peter Collins, Stephen Whitehead, **James Crowe, Jr.**, Katalin Juhasz

USSN 60/0469141, a provisional patent application entitled PRODUCTION OF INFECTIOUS RESPIRATORY SYNCYTIAL VIRUS FROM CLONED NUCLEOTIDE SEQUENCES - Pending. Inventors: same as 60/021,773

USSN 60/047,634, provisional application PRODUCTION OF INFECTIOUS RESPIRATORY SYNCYTIAL VIRUS FROM CLONED NUCLEOTIDE SEQUENCES. Inventors: B. Murphy, P. Collins, S. Whitehead, **J. Crowe, Jr.**, K. Juhasz and A. Bukreyev, Filed May 23, 1997

D) For RSV antibodies - NIH E-045-1996 patent family

E) For RSV antibodies - NIH E-032-1993 patent family

F) For RSV antibodies made at Vanderbilt

U.S. Provisional Patent Application Serial No. 62/408,895

Entitled: "*HUMAN RESPIRATORY SYNCYTIAL VIRUS ANTIBODIES AND METHODS OF USE THEREFOR*"

Inventors: **James E. Crowe, Jr.** and Jarrod Mousa, filed October 17, 2016.

U.S. Provisional Patent Application Serial No. 62/436,017

Entitled: "*ANTIBODIES TO HUMAN RESPIRATORY SYNCYTIAL VIRUS PROTEIN F PRE-FUSION CONFORMATION AND METHODS OF USE THEREFOR*" Inventors: **James E. Crowe, Jr.** and Jarrod Mousa,

filed December 19, 2016.

U.S. Provisional Patent Application Serial No. 62/451,323

Entitled: "*STRUCTURAL BASIS FOR ANTIBODY CROSS-NEUTRALIZATION OF RESPIRATORY SYNCYTIAL VIRUS AND HUMAN METAPNEUMOVIRUS*" Inventors: **James E. Crowe, Jr.** and Jarrod Mousa,

filed January 27, 2017.

G) For alphavirus vectored RSV and MPV vaccines

VACCINES FOR RSV AND MPV. Inventors: **James E. Crowe, Jr.**, Hoyin Mok, Robert E. Johnston, Nancy L. Davis, John Williams. Filed November 11 2007. PCT/US08/077721 filed 09/25/08. Application serial number 12/238,130. European Patent Application No. EP08833916.3.

H) For virus-like particle vaccines

VIRUS LIKE PARAMYXOVIRUS PARTICLES AND VACCINES. Inventors: **James E. Crowe, Jr.**, Hoyin Mok. Filed May 30, 2008, No. 61/057,689. Permanent application filed June 1, 2009 as Application Serial No. 12/455,584.

I) For influenza vaccine

USSN 60/802.667, Recombinant Influenza H5 Hemagglutinin Protein and Nucleic Acid Coding Therefor." Inventors: **James E. Crowe, Jr.** and John V. Williams, Filed May 23, 2006.

J) For dendrimer vaccines

DENDRITIC MOLECULAR INTRACELLULAR TRANSPORTERS AND METHODS OF MAKING AND USING SAME. Inventors: Eva M. Harth, **James E. Crowe, Jr.**, Kui Huang, Heidi E. Hamm, Filed August 2006.

K) For antibodies to influenza virus

Monoclonal antibodies to influenza H1N1 virus and uses thereof. Inventors: **James E. Crowe, Jr.**, Jens Krause, Christopher Basler. US Patent 8,894,997, issued 11/25/2014.

INFLUENZA VIRUS ANTIBODIES AND IMMUNOGENS AND USES THEREFOR. Inventors: **James E. Crowe, Jr.**, Jens C. Krause, David L. Blum. Filed 09/30/2010. US patent application 13/877,163.

L) For antibodies to human metapneumovirus

US20110135645, Anthony R. Williamson, Zhifeng Chen, Pietro Paolo Sanna, Dennis R. Burton, **James E. Crowe, Jr.**, John V. Williams; Publication date 06/09/2011; Filing date 10/04/2007

M) For dengue virus epitopes

PCT/US2013/032367, filing date Mar 15, 2013, based on U.S. Serial No. 61/619,247 filed 4/2/2012; Methods and Compositions for Dengue Virus Epitopes. The University of North Carolina at Chapel Hill and Vanderbilt University; Aravinda de Silva, Ruklanthi de Alwis, Wahala MPB Wahala, Ralph S. Baric, William B. Messer, Scott A. Smith, **James E. Crowe, Jr.** published as WO2013151764 A1 on Oct 10, 2013. Also published as CN104428312A, EP2834265A1, EP2834265A4, US20150328303. U.S. National Phase Application No. 14/390,312.

N) For Ebola virus human antibodies

International Patent Application No. PCT/US2016/024296 based on U.S. Serial No. 62/138,522; Entitled “Antibody-Mediated Neutralization of Ebolaviruses” by James E. Crowe, et al. March 25, 2016; published on September 29, 2016, as No. WO 2016/154572.

U.S. Provisional Patent Application Serial No. 62/379,474 Entitled “Antibody-Mediated Neutralization of Ebolaviruses”, James E. Crowe, et al. August 25, 2016.

O) For Marburg virus human antibodies

International Patent Application No. PCT/US2016/019644; February 25, 2016, based on U.S. Provisional Patent Application Serial No. 62/120,657 and published as as No. WO 2016/138312 on September 1, 2016, Entitled: “ANTIBODY-MEDIATED NEUTRALIZATION OF MARBURG VIRUS” By James E. Crowe, Jr., *et al.*

P) For chikungunya virus human antibodies

International Patent Application No. PCT/US2016/027466 based on U.S. Serial No. 62/147,354 April 14, 2016, and published as No. WO 2016/168417 on October 20, 2016, entitled *Antibody-Mediated Neutralization of Chikungunya Virus* by James E. Crowe, et al.

Q) For dengue virus human antibody 2D22

International Patent Application No. PCT/US2016/041987 based on U.S. Serial No. 62/192,429 Entitled “Engineered Antibodies Against Dengue Virus” by James E. Crowe, et al. Filing Date: July 13, 2016. published on January 19, 2017, as No. WO 2017/011495.

R) For norovirus human antibodies

U.S. Provisional Application Serial No. 62/191,260; Filing Date: July 10, 2015
“HUMAN MONOCLONAL ANTIBODIES FOR HUMAN NOROVIRUS AND EPITOPE DISCOVERY”
by James E. Crowe, et al.

S) For orthopoxvirus human antibodies

U.S. Provisional Patent Application Serial No. 62/410,207; Filing Date: October 19, 2016
“HUMAN ORTHOPOXVIRUS ANTIBODIES AND METHODS OF USE THEREFOR”
by James E. Crowe, Jr., Iuliia Gilchuk

T) For Zika virus human antibodies

U.S. Provisional Patent Application Serial No. 62/416,260; Filing Date: November 2, 2016
“HUMAN ZIKA VIRUS ANTIBODIES AND METHODS OF USE THEREFOR”

by James E. Crowe, Jr.

U) For *Staphylococcus aureus* toxin specific human antibodies

U.S. Provisional Patent Application Serial No. 62/467,619; Filing Date: November 2, 2016

"HUMAN MONOCLONAL ANTIBODIES TO STAPHYLOCOCCUS AUREUS LUKAB TOXIN"

By James E. Crowe, Jr. and three others

LICENSURE

- 2006 Recombinant respiratory syncytial virus fusion protein. Evogenix. Nonexclusive research license. **James Crowe, Jr./Vanderbilt University.**
- 2008 Recombinant respiratory syncytial virus fusion protein. MedImmune. Nonexclusive research license. **James Crowe, Jr./Vanderbilt University.**
- 2008 Recombinant respiratory syncytial virus fusion protein. Merck. Nonexclusive research license. **James Crowe, Jr./Vanderbilt University.**
- 2008 Sequence-optimized human metapneumovirus fusion (F) gene and expressed protein. MedImmune. Nonexclusive research license. **James Crowe, Jr./Vanderbilt University.**
- 2009 Recombinant respiratory syncytial virus fusion protein. Anaptys. Nonexclusive research license. **James Crowe, Jr./Vanderbilt University.**
- 2009 Diagnostic antibody for influenza H1N1 infection. Becton Dickinson. Nonexclusive research license. **James Crowe, Jr./Vanderbilt University.**
- 2011 Recombinant respiratory syncytial virus fusion protein. BEI Resources/ATCC. Nonexclusive research license. **James Crowe, Jr./Vanderbilt University.**
- 2013 Molecular transporter molecules: gyanidino dendrimers. Exclusive license to Nanoferix. **James Crowe, Jr./Vanderbilt University and others.**
- 2014 Human monoclonal antibodies to dengue virus. Sanofi Pasteur. 2014 – present. Nonexclusive research license. **James Crowe, Jr./Vanderbilt University.**
- 2015 Human monoclonal antibodies to dengue virus. Glaxo Smith Kline. 2015 – present. Nonexclusive research license. **James Crowe, Jr./Vanderbilt University.**
- 2015 Human monoclonal antibodies to chikungunya virus. Sanofi USA. 2015 – present. Option to exclusive licensure. **James Crowe, Jr./Vanderbilt University.**
- 2015 Human monoclonal antibodies to dengue virus. Takeda Vaccines. Inc. Nonexclusive research license. **James Crowe, Jr./Vanderbilt University.**
- 2016 Human monoclonal antibodies to Marburg virus. Mapp Biopharmaceutical, Inc. Exclusive license for therapeutic development. **James Crowe, Jr./Vanderbilt University.**
- 2016 Human monoclonal antibodies to Ebola virus. Mapp Biopharmaceutical, Inc. Exclusive license for therapeutic development. **James Crowe, Jr./Vanderbilt University.**

- 2016 Human monoclonal antibodies to Zika virus. Ridgeback Biotherapeutics. Exclusive license for therapeutic and diagnostic development. **James Crowe, Jr.**/Vanderbilt University.
- 2016 Human monoclonal antibodies to Zika virus. Takeda Vaccines, Inc. Nonexclusive research license. **James Crowe, Jr.**/Vanderbilt University.
- 2016 Human monoclonal antibodies to Zika virus. Sanofi. Nonexclusive research license. **James Crowe, Jr.**/Vanderbilt University.
- 2016 Human monoclonal antibodies to Zika virus. NewLink Genetics. Nonexclusive research license. **James Crowe, Jr.**/Vanderbilt University.

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Unique Identifiers

- **ORCID ID: 0000-0002-0049-1079**
- **ResearcherID: B-5549-2009**
- **Scopus Author ID: 26642993000**
- **International Standard Name Identifier (ISNI) 0000 0003 5201 8432**

Metrics – March 21, 2017

- Google Scholar *h*-index: 58; cited 11202 times.
- Google Scholar i10 index (papers with more than 10 citations = 177).
- Research Gate *h*-index 51, RG score 46.51; highest percentile tier.
- Thomsen Reuters, Science Citation Index *h*-index: 47.

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1. Barbas CF III, **Crowe JE Jr**, Cababa D, Jones TM, Zebedee SL, Murphy BR, Chanock RM, Burton DR. Human monoclonal Fab fragments derived from a combinatorial library bind to respiratory syncytial virus F glycoprotein and neutralize infectivity. *Proceedings of the National Academy of Sciences USA* 1992; 89: 10164 – 8.
2. **Crowe JE Jr**, Barbas CF III, Bui P, Cababa D, Jones TM, Zebedee SL, Murphy BR, Chanock RM, Burton DR. Human monoclonal Fab fragments derived from a combinatorial library bind to respiratory syncytial virus F glycoprotein and neutralize infectivity. In Brown F, Chanock RM, Ginsberg HS, Lerner RA, eds. *Vaccines 93: Modern Approaches to New Vaccines Including Prevention of AIDS*. Cold Spring Harbor, NY: Cold Spring Harbor Laboratory 1993; 7 – 11.
3. **Crowe JE Jr**, Collins PL, London WT, Chanock RM, Murphy BR. A comparison in chimpanzees of the immunogenicity and efficacy of live attenuated respiratory syncytial virus (RSV) temperature-sensitive mutant vaccines and vaccinia virus recombinants that express the surface glycoproteins of RSV. *Vaccine* 1993; 11: 1395 – 404.
4. **Crowe JE Jr**, Murphy BR, Chanock RM, Williamson RA, Barbas CF III, Burton DR. Recombinant human RSV monoclonal antibody Fab is effective therapeutically when introduced directly into the lungs of respiratory syncytial virus-infected mice. *Proceedings of the National Academy of Sciences USA* 1994; 91: 1386 – 90.
5. **Crowe JE Jr**, Bui PT, London WT, Davis AR, Hung PP, Chanock RM, Murphy BR. Satisfactorily attenuated and protective mutants derived from a partially attenuated cold passaged respiratory syncytial virus mutant by introduction of additional attenuating mutations during chemical mutagenesis. *Vaccine* 1994; 12: 691-99.
6. **Crowe JE Jr**, Murphy BR, Chanock RM, Williamson A, Barbas CF III, Burton DR. Human RSV monoclonal antibody Fab cloned from a combinatorial library and produced in *E. coli* is effective therapeutically when introduced directly into the lungs of RSV-infected mice. In Brown F, Chanock RM, Ginsberg HS, Norrby E, eds. *Vaccines 94: Modern Approaches to New Vaccines Including Prevention of AIDS*. Cold Spring Harbor: Cold Spring Harbor Laboratory Press 1994; 315 – 20.
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immunogenicity and protective efficacy against wild-type challenge in seronegative chimpanzees. *Vaccine* 1994; 12: 783 – 90.

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12. Connors M, **Crowe JE Jr**, Firestone CY, Murphy BR, Collins PL. A cold-passaged, attenuated strain of human respiratory syncytial virus contains mutations in the F and L genes. *Virology* 1995; 208: 478 – 84.

13. **Crowe JE Jr**, Bui PT, Firestone CY, Connors M, Elkins WR, Chanock RM, Murphy BR. Live subgroup B respiratory syncytial virus (RSV) vaccines are attenuated, genetically stable, and immunogenic in rodents and nonhuman primates. *Journal of Infectious Diseases* 1996; 173: 829 – 39.

14. **Crowe JE Jr**, Firestone C-Y, Whitehead SS, Collins PL, Murphy BR. Acquisition of the *ts* phenotype by a chemically mutagenized cold-passaged human respiratory syncytial virus vaccine candidate results from the acquisition of a single mutation in the polymerase (L) gene. *Virus Genes* 1996; 13: 271 – 3.

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40. **Crowe JE Jr.** "Host Defense Mechanisms Against Viruses." Chapter in *Fetal and Neonatal Physiology*, 5th edition, Editors: Polin R, Abman S, Benitz W, Rowitch D. Elseiver, 2016.

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42. **Crowe JE Jr.** Editor: Brunton L. "Immunostimulants and Vaccines" Chapter in 13th edition. *Goodman & Gilman's The Pharmacological Basis of Therapeutics*, 2016, *pending*.
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EDITOR OF SPECIAL JOURNAL ISSUES

1. *Pediatric Infectious Diseases Journal*, Proceedings of the Fourth International Congress on Respiratory Viruses, November, 2004. Editor of full issue.
2. *Seminars in Pediatric Infectious Diseases*, special issue on Emerging Vaccines for Mucosal Infections, October, 2006. Editor of full issue.
3. Stone JW, **Crowe JE Jr.** Research highlights. *Nanomedicine* 2011; 6: 15-16.

CORRESPONDENCE

1. Ho H-K, Principi N, Esposito S, Bosis S, Williams JV, **Crowe JE Jr.** Human metapneumovirus and lower respiratory tract disease in children. *New England Journal of Medicine* 2004; 350: 1788 – 90.
2. Williams JV, Heymann PW, **Crowe JE Jr.** Reply: Wheezing in hMPV infection. *Journal of Allergy and Clinical Immunology*, 2006; 117: 223 – 4.
3. Williams JV, **Crowe JE Jr.** Reply to Schlabach *et al.*: Human metapneumovirus infection as an emerging pathogen causing acute respiratory distress syndrome. *Journal of Infectious Diseases* 2011; 203: 296.

BOOK REVIEWS

- Crowe JE Jr.** Vaccines: Frontiers in Design and Development. *Clinical Infectious Diseases* 2006; 43: 119.

EDITORIALS

1. **Crowe JE Jr.**, Edwards KM. Emerging vaccines for mucosal infections. *Seminars in Pediatric Infectious Diseases*, 2006; 17: 185 – 6.
2. **Crowe JE Jr.** Genetic predisposition for adverse events after vaccination. *Journal of Infectious Diseases* 2007; 196: 176 – 177. PMID: 17570102.

3. **Crowe JE Jr.** *Perspective: Crowd sourcing immunity.* *Science* 2013; 340: 692 – 693. PMID: 23661747.
4. **Crowe JE Jr.** *Leading Edge Voices: What Will It Take to Respond to the Threat of Zika? “Following Through”.* *Cell* 2016; 165: 511.
5. **Crowe JE Jr.** *Preview: Teaching a clone to walk, one step at a time.* *Cell* 2016; 166: 1360 – 1361. PMID: 27610559.

PUBLISHED IMAGES

Biology Image Library

<http://www.biologyimagelibrary.com/imageID=50120> - RSV filaments

Short-listed Biology Image Library Image Award 2010

<http://www.biologyimagelibrary.com/imageID=50121> - Rotavirus DLP/antibody complex 1

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WEBINARS

“Epitope mapping of neutralizing antibodies to pathogenic viruses: A critical tool for rational vaccine design and evaluation.” Epitope Mapping in Antibody Therapeutics and Vaccine Development: *The Evolving Landscape.* *Genetic Engineering & Biotechnology News* Webinar. June 9, 2015. Online.

“Mechanisms of neutralization of viruses mediated by human antibodies.” International Society for Antiviral Research. April 20, 2017.

INVITED PRESENTATIONS / EXPERT PANELS

1992

- World Health Organization meeting, "Development of Vaccines Against Diseases Caused by Respiratory Syncytial Virus and Parainfluenza Type 3 Virus," April 21 – 22, 1992, Geneva, Switzerland.
- Modern Approaches to New Vaccines Including Prevention of AIDS, September 16 – 20, 1992, Cold Spring Harbor, NY.

1993

- World Health Organization / National Institutes of Health / Centers for Disease Control Meeting, The Protective and Disease Enhancing Immune Response to RSV, May 26 – 27, 1993, Bethesda, MD.
- American Society for Virology 12th Annual meeting, July 10 – 14, 1993, Davis, CA.
- Modern Approaches to New Vaccines Including Prevention of AIDS, September 20 – 24, 1993, Cold Spring Harbor, NY.
- IBC Antiviral Technology and Therapeutics Meeting, October 28 – 29, 1993, Washington, DC.
- Pediatric Grand Rounds, November 23, 1993, Minneapolis Children's Medical Center, Minneapolis, MN.

1994

- Diagon/Bioqual Corporation, Rockville, MD, January 13, 1994.

- World Health Organization meeting, "Development of Vaccines against Diseases caused by Respiratory Syncytial Virus and Parainfluenza Virus Type 3," March 27, 1994, Nyon, Switzerland.
- Infectious Diseases Grand Rounds, May 18, 1994, Vanderbilt University Medical Center, Nashville, TN.
- American Society for Virology 13th Annual meeting, July 9 – 13, 1994, Madison, WI.
- NIH Research Festival, September 21, 1994, Bethesda, MD.
- Ebon Research Systems, Bethesda, MD, October 27, 1994.
- Pediatric Infectious Diseases Conference, December 2, 1994, Johns Hopkins University Medical Center, Baltimore, MD.

1995

- Vaccine Symposium, Society for Pediatric Research, San Diego, CA, May 11, 1995.
- "Vaccines, 100 Years after Louis Pasteur" Symposium, Institut Pasteur, Paris, France, September 24 – 28, 1995.

1996

- Biomedical Primate Research Centre, Rijswijk, Netherlands, May 4 – 8, 1996.

1997

- Immunity in Early Life International Symposium, Annecy, France, Fondation Marcel Merieux, November 18, 1997.

1998

- Society for Pediatric Research, New Orleans, LA. May 4, 1998.

1999

- First Global Conference on Vaccines and Immunisation, University of Manchester, U.K. Sept. 6 – 9, 1999.

2000

- Plenary speaker, Society for Pediatric Research, Boston, MA. May 13, 2000.
- NIAID/NICHD Funding Priority Meeting: Developing Immune System: Frontiers in Knowledge, Sept 20 – 21, 2000, Arlington, VA.
- NIAID Orthopoxvirus Research Group Annual Meeting, October 11, 2000, Bethesda, MD.
- III International Symposium on Respiratory Viral Infections, St. Lucia, West Indies, December 1 – 3, 2000.

2001

- The 5th European Conference on Vaccinology, March 21 – 23, 2001, Lucerne, Switzerland;
- Presidential Plenary session talk, Society for Pediatric Research, April 30, 2001, Baltimore, MD,
- Pediatric Research Seminar, October 26, 2001, Mercy Children's Hospital, Kansas City, MO.
- Pediatric Infectious Diseases Research Seminar, Children's Hospital, Cincinnati, OH, December 12, 2001.

2002

- University of Connecticut Center for Immunotherapy, April 4, 2002, Hartford, CT.
- International Congress of Mucosal Immunology, Orlando, FL, June 2002.
- Amos Christie Pediatric Society, October 12, 2002, Nashville, TN.
- 40th meeting, Infectious Diseases Society of America, October 26, 2002, Chicago, IL.
- MedImmune Satellite meeting on Metapneumovirus, Fifth International Symposium on Respiratory Viral Infections, Dominican Republic, Dec 7, 2002.

2003

- 7th Annual Meeting of Acute Respiratory Infections Panel, Yokohama, Japan, January 8 – 10, 2003.
- International Symposium on Infection and Immunity in Childhood and the International Symposium on Graduate Medical Education for Pediatricians at the 106th Annual Meeting of the Japan Pediatric Society April 25 – 27, 2003, Fukuoka, Japan, invited speaker.
- FASEB Summer Research Conference, Gastrointestinal Tract X: Physiology and Pathophysiology of GI Epithelia, July 19 – 24, 2003, Tucson, Arizona, invited speaker.
- Viral Respiratory Infections: New Pathogens and Special Populations Session, 43rd ICAAC, Sept 14 – 17, 2003, Chicago, IL, invited speaker.
- “Immune responses of infants and children to respiratory virus infection or vaccination.” Viral Vaccines meeting, Barcelona, Spain, October 24 – 28, 2003, invited speaker, session moderator, meeting scientific advisor.
- 14th IBC Antibody Engineering Meeting, San Diego, CA, November 30 – December 3, 2003, invited speaker.

2004

- NVAC Newborn Vaccines Meeting. Bethesda, MD, March 1 – 4, 2004, invited speaker.
- ASM Biodefense Meeting, March 7 – 10, 2004, invited speaker.
- NIH Vaccine Testing and Evaluation Unit Investigator meeting, Bethesda, MD, March 30 – 31, 2004, invited speaker, organizer Cell-Mediated Immunity session.
- National Center for Biodefense meetings Bethesda, MD, April 20 – 21, 2004, invited speaker.
- Third Annual International Congress on Respiratory Viruses, Chicago, IL April 24 – 26, 2004, Co-Chair of the meeting, and speaker.
- Lysosomes and Endocytosis Gordon Conference, Andover, NH, June 27 – July 2, 2004, invited speaker.
- Center for Vaccine Development, University of Maryland, Baltimore, MD, July 14, 2004
- 42nd Annual Meeting of the Infectious Diseases Society of America (IDSA), September 30 – October 3, 2004, Boston, MA.
- Plenary session speaker, Association for Molecular Pathology 2004 meeting, Los Angeles, CA, November 11 – 13, 2004.

2005

- **Frontiers in Neonatal and Infant Immunity. Madrid, Spain. March 18 – 20, 2005.**
- Eighth Annual Conference on Vaccine Research, Baltimore, MD, May 9 – 11, 2005.
- NIH Vaccine Research Center Seminar Series, Bethesda, MD, June 7, 2005.
- The 2005 Henry Shinefield Lecture, CDC-National Immunization Program, Clinical Immunization Safety Assessment (CISA) Network National Meeting, June 13 – 14, 2005, Nashville, TN.
- Center for Investigating Viral Immunity and Antagonism Symposium, Mt. Sinai School of Medicine, New York, New York, July 15, 2005.
- Respiratory Syncytial Virus 2005 Symposium, September 15 – 18, 2005, at Keble College, Oxford, UK, invited speaker.
- New and Emerging Infections in Children Symposium, 45th Interscience Conference on Antimicrobial Agents and Chemotherapy (ICAAC), December 16 – 19, 2005 in Washington, DC.
- 16th Annual IBC Antibody Engineering Meeting, San Diego, CA, December 5 – 8, 2005.

2006

- 2nd ASM - IEEE EMBS Conference on Bio, Micro and Nanosystems, January 15 – 18, 2006, San Francisco, CA.
- E. Mead Johnson Award lecture, Society for Pediatric Research, San Francisco, CA, May 1, 2006.
- NIAID Antibody Epitope Prediction Tool Evaluation Workshop, Bethesda, MD, September 7 – 8, 2006.
- SERCEB 4th Annual Meeting, Gainesville, Florida, October 17, 2006.

2007

- Infectious Diseases Division of the University of Texas Southwestern Medical Center at Dallas, January 11, 2007.
- Speaker Lecture Series, Department of Infectious Diseases, University of Georgia, Athens, GA, January 23, 2007.
- St. Jude/Pediatric Infectious Diseases Society Annual Research Conference, Memphis, TN, February 9, 10, 2007.
- Tenth Annual Conference on Vaccine Research, National Foundation for Infectious Diseases, April 30 – May 2, 2007, Baltimore MD.
- NIH Human Immunology Centers U19 National Meeting, May 3, 2007, Stanford University, Stanford, CA.
- 70th Perinatal & Developmental Symposium, Park City, Utah, May 31 – June 3, 2007.
- Postdoctoral Fellows Association invited lecturer, The Danny Thomas Lecture, St. Jude Children's Research Hospital, Memphis, TN, June 22, 2007.
- Approaches to the study of human antibody responses to viruses Meeting, Chapel Hill, NC, July 10, 2007.
- The Jack Light Lecture, Cedars Sinai Medical Center/UCLA Pediatrics Program, Los Angeles, CA, September 27, 2007.
- Pathogenesis Affinity Seminar Series, The Scripps Research Institute, La Jolla, CA, October 9, 2007.
- SERCEB Biodefense Center Annual Meeting, October 16, 2007, Nashville, TN.
- Microbiology and Immunology Research Seminar, University of Texas Health Sciences Center at San Antonio, November 8, 2007.
- Pediatric Grand Rounds, University of Texas Health Sciences Center at San Antonio, November 9, 2007.
- Infection and Immunity in the Etiology of Leukemia Conference, University of California at San Francisco, November 16, 2007.
- Center for Immunology and Microbial Diseases invited lecturer, Albany Medical College, Albany, NY, November 19, 2007.
- Center for Translational Research on Human Immunology and Biodefense, Dana Farber, Harvard Medical School, Boston, MA, January 11, 2008.

2008

- MedImmune, Inc., February 6, 2008.
- Plenary Session speaker, Southern Society for Pediatric Research Annual Meeting, New Orleans, LA, February 23, 2008.
- Keystone Symposium on HIV Vaccines: Progress and Prospects, March 27 – April 1, 2008, Banff, Alberta.
- R & D Retreat, International AIDS Vaccine Initiative, White Plains New York, March 12 – 14, 2008.
- Neutralizing Antibody Consortium Meeting, International AIDS Vaccine Initiative, April 28 – 29, 2008, La Jolla, CA.
- American Society for Microbiology 108th General Meeting, Boston, MA, June 1 – 5, 2008.
- Infant Foundation, Buenos Aires, Argentina, July 23, 2008.
- Driscoll Children's Hospital, Corpus Christi, Texas, August 1, 2008.
- The XIV International Congress of Virology, Istanbul August 10 – 15, 2008.
- Conference for Translational Immunovirology and Biodefense, Mayo Clinic, Rochester, MN, September 8, 2008.
- US-Japan Cooperative Medical Science Program AIDS Panel Meeting on Awaji Island (Hyogo, Japan), September 10th and 11th, 2008.
- HIV B Cell Immunology Vaccine Workshop Meeting Bethesda, MD November 3 – 5, 2008.
- The 14th International Conference on Human Antibodies & Hybridomas. Nov. 12 – 14 2008, New York University, NY.

2009

- Program in Immunology Seminar Series, University of Alabama at Birmingham, January 15, 2009.

- Program in Microbial Pathogenesis, Meharry Medical College, Nashville, TN, February 6, 2009.
- Fifth Annual Protein Engineering Summit, Boston, MA, April 6 – 10, 2009.
- Department of Microbiology, Baylor Medical College, Houston TX, April 16, 2009.
- Fourth Semmering Vaccine Symposium, Baden, Austria, April 23 – 25.
- Novartis, Cambridge, MA, June 8, 2009.
- **NYU School of Medicine Immunology Club Seminar Series, New York, NY, June 18, 2009.**
- Third annual Immunobiology of Influenza Virus Infection meeting, Athens, GA, July 26 – 28, 2009.
- American Society for Virology 28th Annual Meeting, The University of British Columbia, July 11 – 15, 2009.
- Department of Immunology Easton Seminars, University of Toronto, Toronto, Canada, September 14, 2009
- Microbiology & Molecular Genetics (MMG) Seminar, Emory University, Atlanta, GA, Sept. 21, 2009.
- MedImmune Science Symposium. Mountain View, CA, September 30, 2009.
- Plenary speaker, Infectious Diseases Society of America, Philadelphia, PA, Oct. 29, 2009.
- NIH Memory B Cell Development Meeting, Bethesda, MD, November 3 – 4, 2009.
- IBC Antibody Engineering Meeting, December 6 – 10, 2009, San Diego, CA.

2010

- National Regional Centers of Excellence in Biodefense Annual Meeting, Las Vegas, NV, April 12, 2010.
- Norman Siegel Award Lecture. American Pediatrics Society Meeting, Vancouver, Canada, April 29 – May 4, 2010
- American Association of Immunologists, Baltimore, MD, May 9 – 11, 2010.
- The Search for Broadly Protective Anti-HIV Antibodies NIH meeting, June 29 – 30, 2010, Bethesda, MD.
- NIAID RCE Workshop: Dengue Virus Infection & Immunity, Portland, OR, August 24 – 25, 2010.
- SERCEB Annual Meeting, October 4, 2010, Chapel Hill, NC.
- OMRF Annual Anthrax Meeting, Oklahoma City, OK, October 12, 2010.
- 7th Annual RSV International Symposium, December 2 – 5, 2010.

2011

- Oregon State University, Corvallis, OR, January 12, 2011.
- Keystone Symposium, *Antibodies as Drugs*, Feb 6 – 11, 2011, Keystone, Colorado.
- Frontiers in Science Symposium, annual AMSPDC/PSDP meeting, March 4 – 5, 2011, San Diego, CA.
- La Jolla Institute for Allergy and Immunology's (LIAI) Seminar Series, February 23, 2011.
- University of Washington, Seattle, WA, March 31, 2011.
- Plenary Session, Society for Pediatric Research, Denver, CO, May 1, 2011.
- Fourteenth Annual Conference on Vaccine Research, National Foundation for Infectious Diseases, Bethesda, Maryland, May 17, 2011
- Department of Defense, DTRA-CB Basic Research Review, Springfield, VA, July 18 – 29, 2011.
- Vienna Biocenter, Vienna Austria, July 28, 2011.
- Plenary session, 5th Vaccine and ISV Conference, in Seattle, WA, October 2 – 4, 2011.

2012

- Molecular Genetics and Microbiology. UT-Austin, Austin, TX, February 1, 2012.
- Vaccine Research Center, NIH, Bethesda, MD, February 14, 2012.
- 19th Conference on Retroviruses and Opportunistic Infections, Seattle, WA, March 8, 2012.
- Gordon Conference: Biology of Acute Respiratory Infection, Ventura, CA, March 11 – 16, 2012.
- Symposium on Immunologic Diseases and Basic Immunology, University of Alabama at Birmingham, Birmingham, AL, June 9 – 10.
- NIH/FDA 2012 Universal Influenza Vaccines Meeting, Bethesda, MD, June 19 – 20, 2012.
- American Society of Virology, Madison, WI, July 21, 2012.
- Defense Threat Reduction Agency, Springfield, VA, July 23, 2012.

- Wellcome Trust experts meeting, Understanding Bottlenecks in the Discovery of New Therapies for RSV, London, UK, Sept. 10 – 11, 2012.
- AIDS Vaccine 2012, Boston, MA, September 12, 2012.
- The Scripps Research Institute, La Jolla, CA, September 24, 2012.
- RSV 2012: 8th Annual Respiratory Syncytial Virus Symposium, Sante Fe, NM, September 27 – 30, 2012.
- SERCEB Annual Meeting, October 1 – 2, 2012, Chapel Hill, NC.
- Institute of Human Virology 14th Annual International Meeting, Baltimore, MD, October 16, 2012.
- University of Iowa, November 1, 2012.
- Cent Gardes: HIV Vaccine Conference: The B cell response to HIV and HIV vaccines: From broadly neutralizing to non-neutralizing antibodies, Veyrier du Lac, France, November 5-7, 2012.
- 11th International Symposium on Double-Stranded RNA Viruses, San Juan, Puerto Rico, November 27 – December 1, 2012.
- University of Puerto Rico, San Juan, PR, November 28, 2012.

2013

- 11th ASM Biodefense and Emerging Infections Conference, Washington, DC, February 24 – 27, 2013.
- Department of Medicine Grand Rounds, University of CA – Irvine, April 16, 2013.
- Institute for Immunology Seminar, University of CA – Irvine, April 17, 2013.
- Epithelial Biology Center Symposium 2013, Nashville, TN, April 18, 2013.
- NIAID National Institutes of Health Dengue Vaccine Initiative, International Vaccine Institute, Consultation on Dengue Vaccines, Rockville, MD, June 26 – 28, 2013.
- Plenary Session, American Society for Virology, Penn State University, State College, PA, July 20 – 24, 2013.
- Plenary Speaker, Duke CHAVI-ID Annual Retreat and Meeting, Durham, NC, Sept 29 – Oct 2, 2013
- RSV Vaccines for the World, Porto, Portugal, October 14 – 16, 2013.
- Cold Spring Harbor course on Phage Display of Antibodies and Peptides, Cold Spring Harbor, NY, Nov 13, 2013.
- 2013 Antibody Engineering & Therapeutics, Huntington Beach, CA, Dec 9, 2013.

2014

- Keystone Symposium on Pathogenesis of Respiratory Viruses, January 20, 2014, Keystone, Colorado, USA.
- National Institutes of Health, NIAID, February 24, 2014, Bethesda, MD.
- Ohio Virology Association. Columbus, OH. March 13, 2014.
- Center for Vaccines and Immunity, Nationwide Children's Hospital Research Institute, Columbus, OH. March 14, 2014.
- Washington University at St. Louis, March 28, 2014.
- Southeastern Biosafety Association (SEBSA). Nashville, TN, May 1, 2014.
- Plenary Speaker, Vanderbilt University Pediatric Department Research Retreat, May 17, 2014.
- Third Annual Symposium on Respiratory Virus Pathogenesis, Buenos Aires, Argentina, May 15, 2014.
- NIH Think Tank “B cell Help - HIV Vaccines, Bethesda, MD, May 21 – 22, 2014.
- NIAID and FDA workshop on “Common Barriers in Vaccine Research and Development”, Rockville, D, June 19 – 20, 2014.
- 11th International Symposium on Rotavirus, Delhi, India, Sept 3 – 5, 2015.
- DTRA 2014 Basic Research, Falls Church, VA, Sept 15, 2014.
- Prophylactic Options to Environmental and Contagious Threats (PROTECT) Program Meeting - Antibody Discovery, Cambridge, MA, September 28 – 30, 2014.
- 12th Global Experts' Meeting (GEM) on Respiratory Viruses, Athens, Greece, October 22 – 23, 2014.
- Baylor College of Medicine, Department of Molecular Virology and Microbiology Seminar, October 30, 2014 and Pediatric Grand Rounds, October 31, 2014.
- 9th Respiratory Syncytial Virus Symposium, Stellenbosch, South Africa, November 9 – 13, 2014.

- Speaker and Panelist, “Epidemics, Pandemics, and Outbreaks of Contagious Diseases”, Frontiers in Health Innovation Session, Third Annual Global Action Summit 2014, Nashville, TN, November 16, 2014.
- Center for Strategic and International Studies, “U.S. Leadership on Ebola in West Africa and at Home” meeting, Nashville, TN, November 21, 2014.

2015

- Keystone Symposium on Viral Immunity, Breckenridge, CO, January 11-16, 2015.
- 17th International Conference on Emerging Infectious Diseases (EID) meeting, Taipei, Taiwan, January 26 – 28, 2015.
- Plenary speaker, FILO 2015 - 7th International Symposium on Filoviruses, March 25 – 28, 2015, Washington, DC.
- 18th Annual Conference on Vaccine Research, Bethesda, MD, April 13 – 15, 2015.
- Keynote Speaker, 2015 National Interagency Confederation for Biological Research (NICBR) Spring Research Festival (for NCI/USAMRIID/USDA/NIAID), May 4th, 2015, Frederick, MD.
- 2015 Chemical and Biological Defense Science and Technology (CBD S&T) Conference, St. Louis, MO, May 12 – 14, 2015.
- Plenary speaker, American Society for Gene and Cell Therapy meeting, New Orleans, LA, May 16, 2015.
- Gordon Conference on Viruses and Cells, Girona, Spain, June 21-25, 2015.
- 14th Annual Dengue Course, Havana, Cuba, August 9 – 16, 2015.
- Washington University in St. Louis, Microbiology, St. Louis, MO, September 30, 2015.
- International Symposium on Flaviviruses: Structure and Immunity, October 8 – 10, 2015, Vienna, Austria.
- DARPA Protect Meeting, Cambridge, MA, October 13, 2015.
- U.S. Senate NIH Caucus, Washington, DC, November 17, 2015. Joint presentation on “NIH Funding and the Promise of Biomedical Research” to U.S. Senators with Tony Fauci, MD.
- University of Pennsylvania, December 1, 2015.

2016

- UTMB Infectious Diseases & Immunity Colloquium, Galveston, TX, January 26, 2016.
- 2016 ASM Biodefense and Emerging Diseases Research Meeting, Arlington, VA, February 9, 2016.
- Plenary speaker, annual PIDS/St Jude Research Conference, Memphis, TN, March 4 – 5, 2016.
- Partnership for Dengue Control, Dengue Immune Correlates of Protection meeting, Les Pensières, France, March 8 – 9, 2016.
- The Flexner Dean’s Lecture, Vanderbilt University, March 21, 2016.
- Grand Rounds, Department of Pediatrics, University of New Mexico, Albuquerque, NM, March 24, 2016.
- DARPA Protect Meeting, Philadelphia, PA, March 5, 2016.
- Plenary speaker, Academic Drug Discovery Consortium at the American Society for Pharmacology and Experimental Therapeutics Annual Meeting at Experimental Biology April 7, 2016, San Diego, CA.
- Human Vaccines Project Meeting, Les Pensières, France, April 14 – 16, 2016.
- Genes, Environments Traits Meeting, Harvard University, April 25 – 26, 2016
- Scripps Research Institute, La Jolla, CA, May 3, 2016
- Modeling Immunity, NIH, Rockville, MD, June 1 – 2, 2016.
- University of Pittsburgh, Pittsburgh, PA, June 21, 2016.
- Influenza Immunology: Data, Systems and Models, Yale University, June 24, 2016.
- Adaptive Immune-Receptor Repertoire Meeting, Rockville, MD, June 27 – 30, 2016.
- Session Co-chair, GSK Emerging Infections Meeting, Rockville, MD, July 7 – 8, 2016.
- B Cell Epitope and Mechanisms of Antibody Protection, NIH, Rockville, MD, July 12 – 14, 2016.
- HHS Summit to Accelerate Zika Diagnostics Development, Rockville, MD, July 15, 2016.
- 9th Options for the Control of Influenza meeting, Chicago, IL, August 24 – 28, 2016.

- Bloomfield Lecture, Case Western Reserve University, Cleveland, OH, August 30, 2016.
- Modeling Immunity for Biodefense, NIAID Seminar, September 6, 2016.
- 7th International Symposium on Emerging Viral Diseases, Wuhan, China, October 19 – 21, 2016.
- Nature Conference on Viral Infection and Immune Response 2016, Wuhan, China, October 21 – 23, 2016.
- 2016 ZADD Vaccine Workshop & CEEZAD Annual Meeting Agenda, Omaha, NE, Oct 31 – Nov 2, 2016.
- Department of Microbiology and Immunology, University of Rochester, Nov 7, 2016.
- 45th Annual Autumn Immunology Conference, Chicago, IL, November 20, 2016.

2017

- Department of Microbiology and Immunology, Stanford, January 18, 2017.
- The Tech Museum, San Francisco, CA, January 19, 2017.
- Pediatric Grand Rounds, Packard Children's Hospital at Stanford, January 20, 2017.
- Regeneron, January 24, 2017.
- Novavax, January 25, 2017.
- University of Michigan, Life Sciences Institute, January 26, 2017.
- Global Infectious Disease Seminar Series, Center for Infectious Disease Research, Seattle WA, February 13, 2017.
- Just Biotherapeutics, Seattle, WA, February 14, 2017.
- Center for Microbial Pathogenesis and Host Inflammatory Responses Distinguished Lecturer Series, University of Arkansas, February 23, 2017.
- *Pending*, Neutralizing Antibody Consortium Annual Meeting, La Jolla, CA, March 6 – 8, 2017.
- *Pending*, TEDx Nashville, March 17 – 18, 2017.
- *Pending*, College of Veterinary Medicine, Gainesville, FL, April 4, 2017.
- *Pending*, Korsmeyer Lecture, American Society for Clinical Investigation, Chicago, IL, April 21, 2017.
- *Pending*, Biologics and Vaccines for Infectious Disease, Boston, MA, May 3 – 4, 2017.
- *Pending*, 8th International Conference on Emerging Zoonoses *Focusing on Emerging & Transboundary Infectious Diseases*, Manhattan, Kansas, May 7 – 10, 2017.
- *Pending*, Immunology and Evolution of Influenza Symposium, Emory Univ, Atlanta, GA, May 25, 2017.
- *Pending*, Human Vaccines Project Annual Meeting, Veyrier-du-lac, France, June 1, 2017.
- *Pending*, Keynote, Molecular Medicine Program Annual Retreat at VUMC, June 16, 2017.
- *Pending*, Society for Biomaterials, Biomaterials Day meeting, Nashville, TN, August 4, 2017
- *Pending*, 4th International Symposium on Maternal and Neonatal Immunization, Brussels, September 10 – 12, 2016
- *Pending*, FILO 2017, Marburg, Germany, September 13 – 16, 2017.
- *Pending*, Cell Symposium *Emerging and Reemerging Viruses*, Arlington VA, October 1 – 3, 2017.
- *Pending*, Infectious Diseases Society of America, plenary talk, San Diego, CA, October 4 – 8, 2017.
- *Pending*, American Society of Human Genetics, Orlando, Florida, October 20, 2017.
- *Pending*, Cent Gardes Conference: HIV Vaccines, Veyrier-du-lac, France, October 22 – 24th, 2017.
- *Pending*, Speaker Series, Roche Innovation Center, Basel, Switzerland, October 26, 2017.
- *Pending*, 17th World Vaccine Congress, San Diego, CA, December, 2017.

2018

- *Pending*, Keystone Symposium on *Antibodies as Drugs: Translating Molecules into Treatments*, Whistler, BC, Canada. February 25 – March 2, 2018.