

Anna Deirdre Holmes, Ph.D.
(surname *LoBue*)

EDUCATION

Doctor of Philosophy, Microbiology and Immunology, February 2008
University of North Carolina at Chapel Hill

- Dissertation: Norovirus Immunobiology and Vaccine Design
- Advisor: Ralph S. Baric

Bachelor of Science, Animal Science, University of Illinois at Urbana-Champaign 2002
• Summa Cum Laude

EXPERIENCE

Medical Science Liaison, Galderma Laboratories 2008-present

- Manage clinical data and scientific information dissemination to health care providers and internal sources via verbal, written, and/or presentation-style formats, with emphasis on rosacea and acne vulgaris
- Identify and evaluate potential clinical research investigators and facilities for participation in phase II-IV research studies
- Procure and champion investigator-initiated trial proposals from concept initiation through approval, development, contract, and active study stages
- Provide scientific support for medical affairs, R&D, marketing, and business development objectives

Doctoral Research, Laboratory of Ralph S. Baric, Department of Microbiology and Immunology, University of North Carolina at Chapel Hill 2002-2008

- Designed first and only effective vaccine against murine norovirus
- Developed human multivalent norovirus vaccines that cross-protect against heterologous norovirus challenge
- Characterized immune mechanisms of norovirus protection in vaccinated mice in collaboration with H.W. Virgin at Washington University, St. Louis
- Defined T-cell and antibody cross-reactivity profiles among 17 human norovirus strains
- Identified unique CD4 T cell epitopes in GI.1 and GII.4 norovirus strains

Undergraduate Research, Department of Animal Science, 1999-2002
University of Illinois at Urbana-Champaign

- Laboratory of H. Rex Gaskins
- Investigated the metabolism of porcine bacterium *Lawsonia intracellularis*

PATENTS

Multivalent Immunogenic Compositions Against Noroviruses and Methods of Use.
Application 2011/0070260; filed Sept 3, 2010; published March 24, 2011.

PUBLICATIONS

Holmes AD. Potential role of microorganisms in the pathogenesis of rosacea. **Journal of the American Academy of Dermatology** 2013 DOI: 10.1016/j.jaad.2013.08.006.

Lee PK and Kloser A. Current methods for photodynamic therapy in the US: Comparison of MAL/PDT and ALA/PDT. **Journal of Drugs in Dermatology** 2013 Aug; 12(8):925-30. Internal editing: **Holmes AD.**

LoBue AD, Lindesmith LC, and Baris RS. Identification of cross-reactive norovirus CD4+ T cell epitopes. **Journal of Virology** 2010 Sep; 84(17):8530-8.

LoBue AD, Thompson JM, Lindesmith LC, Johnston RE, and Baric RS. Alphavirus-adjuvanted norovirus-like particle vaccines: heterologous, humoral, and mucosal immune responses protect against murine norovirus challenge. **Journal of Virology** 2009 Apr; 83(7):3212-27.

Chachu KA, **LoBue AD**, Lindesmith L, Baric RS, and Virgin HW. Immune mechanisms responsible for vaccination against and clearance of mucosal and lymphatic norovirus infection. **PLoS Pathogen** 2008 Dec; 4(12):e1000236.

Lindesmith LC, Donaldson EF, **LoBue AD**, Cannon JL, Vinje J, Baric RS. Mechanisms of GII.4 norovirus persistence in human populations. **PLoS Medicine** 2008 Feb; 5(2):e31.

LoBue AD and Baric RS. Norovirus molecular biology, immunity, and vaccines. Review. **Current Topics in Virology** 2008; 7:57-87.

LoBue AD, Lindesmith L, Yount B, Harrington PR, Thompson JM, Johnston RE, Moe CL, Baric RS. Multivalent norovirus vaccines induce strong mucosal and systemic blocking antibodies against multiple strains. **Vaccine** 2006 June 12; 24(24): 5220-34.

SELECT ORAL PRESENTATIONS

“Multivalent norovirus vaccines co-administered with VEE adjuvants induce broadly reactive immune responses that confer protection following MNV challenge,” presented at **3rd International Calicivirus Conference**, Cancun, Mexico, November 10-13, 2007.

“Multivalent norovirus vaccines co-administered with VEE adjuvants induce broadly reactive immune responses,” presented at **American Society for Virology 26th Annual Meeting**, Corvallis, OR, July 14-18, 2007.

“Norovirus vaccination induces heterotypic humoral and cellular immune responses,” presented at **American Society for Virology 25th Annual Meeting**, Madison, WI, July 15-19, 2006.

“Heterotypic anti-norovirus antibody response and cross-blockade of ABH histo-blood group antigens,” presented at **2nd International Calicivirus Conference**, Dijon, France, November 6-9, 2004.

AWARDS AND DISTINCTIONS

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| • UNC Graduate School Dissertation Completion Fellowship | 2008 |
| • 3 rd International Calicivirus Conference Travel Award | 2007 |
| • American Society for Virology Travel Award | 2007 |
| • Special Undergraduate Research Experience (SURE) Fellowship | 2001 |
| • Eli Lilly-ELANCO Animal Health Scholarship | 2000 |
| • Jonathon Baldwin Turner Research Scholarship | 2000 |

ADDITIONAL EXPERIENCE

Faculty Liaison, Department of Microbiology and Immunology, UNC **2004-2007**

- Arranged meetings with departmental graduate advisor to communicate ideas and concerns of student body to faculty attention
- Organized and directed committees on implementing departmental improvements

Teaching Assistant, University of North Carolina at Chapel Hill **2003-2004**

- ‘Introduction to Medical Microbiology’
- Instructed pre-healthcare professional students in basic microbiology laboratory techniques

PROFESSIONAL AFFILIATIONS

American Medical Writers Association **2012-2013**

Society for Investigative Dermatology **2010-2013**

Triangle Virology Association **2002-2008**

- Attended seminars and colloquia featuring distinguished local and nationally recognized virologists

Senator, Graduate and Professional Student Federation, UNC **2004-2007**

- Representative to the UNC Graduate School in decision making and implementation processes affecting all graduate and professional students

Carolina Student Biotechnology Network **2005-2007**

- Participated in events promoting career development and industry outreach

American Society for Virology

2007