UNM SCHOOL of MEDICINE

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Assistant Professor

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EDUCATION

2009 Techniques for Characterization of Complex Carbohydrates, University of Georgia, Complex Carbohydrate Research Center, Athens, GA.

2005 Optical Microscopy Course, Marine Biological Laboratory, Woods Hole, MA

1998-2005 Ph.D., Immunology, University of Pennsylvania, School of Medicine, Philadelphia, PA

1997-1998 Case Western Reserve University, School of Medicine, Cleveland, OH. Graduate Program in Cell and Molecular Biology, transferred.

1993-1997 **B.S., Chemistry and Biology**, King College, Bristol, TN. *summa cum laude*, honors in independent study

RESEARCH

2012-present **University of New Mexico, School of Medicine, Assistant Professor.**
Topics:

- Cell biology and signal transduction of fungal pathogen sensing via C-type lectins in dendritic cells and macrophages
- Innate immune fungal recognition in the context of medically-relevant biofilm microbial communities formed by *Candida* genus human fungal pathogens
- Influence of fungal call wall moieties on the success or failure of anti-fungal immunity
- Quantitative live cell optical microscopy techniques to investigate host-microbe interactions between primary human innate immune cells and fungal pathogens

2011 University of North Carolina at Chapel Hill, School of Medicine, Research Assistant Professor.

2005-2010 University of North Carolina at Chapel Hill, School of Medicine, Postdoctoral Fellow, Advisor: Dr. Ken Jacobson.
Topics:

- Biophysics and cell biology of C-type lectin membrane microdomains regarding their transport, structure and function
- Innate immune recognition of fungal pathogens via transmembrane C-type lectins

1999-2005 University of Pennsylvania, School of Medicine, Graduate Student, Immunology Graduate Group, Advisor: Dr. Laurence Turka.
Topic: Inhibition of T cell receptor signal transduction and thymocyte survival by cellular hypoxia responses.

1997-1998 Case Western Reserve University, School of Medicine, Graduate Student, Cell and Molecular Biology.

TEACHING

2011 General Descriptive Chemistry 101 lecture (~230 enrollment), Department of Chemistry, University of North Carolina.
2010 Cell Biology lecture module, Biophysical Society's Summer Course in Biophysics at the University of North Carolina.
2006-2010 Optical Microscopy lecture and lab, various venues at the University of North Carolina

HONORS & FUNDING

2010 NC TraCS $10K Research Pilot Award, University of North Carolina.
2010 Postdoctoral Service Award. Office of Postdoctoral Affairs, University of North Carolina.
2010 Postdoctoral Travel Award. American Society of Cell Biology.
2009 Postdoctoral Scholars Award for Research Excellence, University of North Carolina.
2007 Travel Award for Best Postdoctoral In-house Seminar, Department of Cell & Developmental Biology, University of North Carolina.
2007-2009 Kirschstein National Research Service Award (F32), National Institutes of Health.
2005-2007 Lineberger Postdoctoral Fellowship Training Award, Lineberger Comprehensive Cancer Center, University of North Carolina.
2004 Poster of Distinction Award, American Society for Transplantation Annual Scientific Meeting.

MEMBERSHIPS

American Society for Cell Biology
American Society for Microbiology
International Society for Human and Animal Mycology

PUBLICATIONS

Itano MS, Steinhauer C, Schmied J, Forthmann C, Liu P, **Neumann AK**, Jacobson K, Tinnefeld P, Thompson NL. Super-Resolution Imaging of C-Type Lectin and Influenza Hemagglutinin Nanodomains on Plasma Membranes using Blink Microscopy. 2012. PMCID: PMC3318115

Liu P, Wang X, Itano MS, **Neumann AK**, Thompson NL, Jacobson K. The Formation and Stability of DC-SIGN Microdomains Require its Extracellular Moiety. Traffic, 2012. PMCID:PMC3365552

Itano MS, **Neumann AK**, Liu P, Zhang F, Gratton E, Parak WJ, Thompson NL, Jacobson K. DC-SIGN and influenza hemagglutinin dynamics in plasma membrane microdomains are markedly different, Biophys J, 2011; 100(11): 2662. PMCID: PMC3117154

Neumann AK, Itano MS, Jacobson K. Understanding lipid rafts and other related membrane domains, F1000 Biol Rep, 2010; 2: 31. PMCID: PMC2894464

Neumann AK & Jacobson K. A Novel Pseudopodial Component of the Dendritic Cell Anti-fungal Response: the Fungipod, PLoS Pathog, 6(2): e1000760.PMCID: PMC2820528

Neumann AK, Thompson NL, Jacobson K, 2008. Distribution and Lateral Mobility of DC-SIGN on Immature Dendritic Cells – Implications for Pathogen Uptake, J Cell Science, 121(5): 634-43. http://jcs.biologists.org/content/121/5/634.long

Neumann AK, Yang J, Biju MP, Joseph SK, Johnson RS, Haase VH, Freedman BD, Turka LA, 2005. Hypoxia Inducible Factor-1α Regulates T Cell Receptor Signal Transduction, Proc Natl Acad Sci USA, 102(47): 17071-6

Biju MP*, **Neumann AK***, Bensinger SJ, Johnson RS, Turka LA, Haase VH, 2004. Vhlh Gene Deletion Induces Hif-1 Mediated Cell Death in Thymocytes. Mol Cell Biol 24(20): 9038-47
* *Both authors contributed equally to this work*