

# KENETTA L. NUNN, Ph.D.

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## SKILLS SUMMARY

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<b>Management</b>	People & resource management, hiring & onboarding, employee performance reviews & goal setting, clinical study design & management, project scoping and management, scientific writing & editing & reviewing, mentoring & supervising students & laboratory technicians, shipping & receiving of category B laboratory substances, experimental design, public speaking
<b>Bioinformatics</b>	Analytical assay validations, gene expression data analysis, data science, bash, R, Python, SQLAlchemy, PostgreSQL, microbiome data processing, Next Generation Sequencing (NGS), multivariate statistics, research reproducibility, data visualization
<b>Tools/Applications</b>	SmartSolve document management, Smartsheet & Resource Management by Smartsheet, Enterprise Library and Vaulting Information System, Workday, Microsoft operating systems, Keynote, Adobe Illustrator
<b>Regulatory</b>	Human subjects research (HIPAA & PHI), preparation of IRB and Biosafety applications and protocols, BSL-2 practices, GLP, GMP, GCP
<b>Laboratory</b>	Cloning techniques, gel electrophoresis (PAGE & agarose), nucleic acid extraction & purification (DNA & RNA), PCR, qPCR, 16S rRNA amplicon sequencing, nanopore library prep & sequencing, virus propagation, viral titer assays, polyclonal antibody purification, mammalian cell culture (stem cells, epithelial cells), histology, fluorescence microscopy, culturing of fastidious bacterial organisms, synthesis/coupling/purification of peptides, modification of peptides and proteins, HPLC, HPLC-MS, immunohistochemistry, ELISA

## PROFESSIONAL EXPERIENCE

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### Q<sup>2</sup> Solutions, Translational Genomics

*Associate Manager of Bioinformatics, Product Development Bioinformatics*

Aug 2021 – Present

- Lead a team of Bioinformaticians in the Development of over 20 products in under 2 years.
- Established, improved, and maintained professional standards of product development, controlling for product consistency, quality, reproducibility, and project timeline adherence.
- Managed the professional development and facilitated career progressions of over 8 direct reports spanning from candidate identification, interviewing, onboarding, and promotions.
- Provided onboarding guidance and continuing education to all direct reports and select indirect reports ensuring all professional standards related to quality control governance, intermediate and final product delivery and reporting are preserved in accordance with organization's policies and applicable quality regulations.
- Implemented Project Management best-practices to facilitate and manage intra-team and inter-term collaborations to align Subject Matter Expertise and technical skillsets to ensure group adherence to established project scopes, including technology requirements, intermediate and final deliverables, and the projects governing timelines.
- Developed professional and technical career progression plans to align the career goals of each direct report to the overall goals of the organization.
- Provided routine feedback to direct reports informally when appropriate and formally through semi-annual performance reviews. Identified and recognized outstanding performer leading to the successful retaining of a top performer in the company in a promoted role.

### University of Michigan Medicine, Internal Medicine, Division of Infectious Diseases

*Postdoctoral Research Fellow*

Jan 2020 – July 2021

- Reconstructed whole genomes of pathogenic bacteria utilizing Snakemake and bash scripting.
- Modeled infection dynamics of microbial pathogens using Python and R.
- Developed a PostgreSQL database using SQLAlchemy for Python

- Organized a system to store and analyze NGS and HIPAA compliant data
- Curated and compiled PHI for various projects and researchers in the laboratory

### **University of Idaho, Department of Biological Sciences**

**Graduate Research Assistant (Program: Bioinformatics & Computational Biology)** Aug 2014 – Jan 2020

- Utilized Python and R to analyze data resulting in the first published study to characterize vaginal microbial communities in minority adolescent women (see Nunn et al. JAH 2019)
- Designed, secured IRB approval for, and coordinated a novel pilot clinical study (see Nunn et al. mSphere 2020)
- Reconstructed bacterial metagenomes using Miniconda environments
- Established and managed research collaborations and communicated across multidisciplinary teams
- Developed and executed microbiology research projects, techniques, and assays
- Mentored and supervised a total of five undergraduate students conducting research
- Served on the advisory committee for the Institute for Bioinformatics and Evolutionary Studies (IBEST) at UI

### **Eschelman School of Pharmacy, UNC-Chapel Hill**

**Graduate Research Assistant (Program: Biomedical Engineering)** Aug 2012 – July 2014

**UNC PREP Scholar** June 2012 – May 2013

**Research Technician/IRB Clinical Study Coordinator** Aug 2011 – July 2014

- Managed all aspects of clinical studies in the laboratory including recruiting donors, obtaining informed consent, scheduling sample donations, administering questionnaires, maintaining study records and PHI, and preparing summary study reports to the IRB and NIH
- Implemented a system for characterizing immunological and biochemical properties of human samples
- Designed methods to measure the affinity between antibodies and HIV/HSV-2 in human samples
- Co-invented a patent entitled “compositions and methods for inhibiting pathogen infection”
- Maintained viral stocks

### **Affinergy Inc., Research Triangle Park, NC**

**Research Associate** July 2008 – Aug 2011

- Coordinated materials for all animal studies in the company’s Antimicrobial Program
- Produced critical data for SBIR grant submissions
- Identified peptides that bind to key targets using phage display technology
- Developed peptide analysis methodology and led its transfer from the Chemistry to Biology group
- Contributed to weekly meetings by providing formal research updates

### **Biotechnics, Hillsborough, NC**

**Laboratory Assistant** Jan 2008 - July 2008

- Adhered to GLP for histological analysis of animal tissue specimens
- Maintained stock solutions and performed routine equipment maintenance for the company
- Devised a detailed inventory of all specimens, embedded blocks, and slides
- Implemented an efficient system for shipping and receiving all specimens and samples

## **EDUCATION**

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**University of Idaho, Moscow, ID** Aug 2014 – Jan 2020

*Ph.D. in Bioinformatics and Computational Biology*

**University of North Carolina at Chapel Hill, Chapel Hill NC** Aug 2012 – Aug 2014

*M.S. in Biomedical Engineering – Joint program with North Carolina State University*

**Duke University, Durham, NC** Aug 2003 – Sept 2007

*B.S. in Biology, Chemistry Minor*

## **AWARDS, GRANTS, & FELLOWSHIPS**

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2018 – 2019 Alumni Award for Excellence, University of Idaho

2018 – 2019 Glen E. Nielsen & Jean K. Science Scholarship, University of Idaho (\$9,352)

2018 – 2019 Bioinformatics & Computational Biology Graduate Fellowship (\$25,000 stipend & travel)

- 2017 BEACON Travel Award (University of Idaho), Gordon Research Conference for Microbial Population Biology GRC (\$2,116)
- 2014 – 2018 President's Doctoral Scholars Award, University of Idaho (\$50,000 awarded annually)
- 2013 President's Scholar Award, International Congress of Mucosal Immunology (\$1,000)
- Summer 2002 Howard Hughes Summer Research Fellow – Duke University (\$1,000)

## **PUBLICATIONS (SELECTED)**

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1. **Nunn KL**, Witkin SW, Schneider GM, Boester A, Nasioudis D, Minis E, Gliniewicz K, Forney LJ. Changes in the Vaginal Microbiome during the Pregnancy to Postpartum Transition. *Reprod Sci.* 2021; doi: 10.1007/s43032-020-00438-6. [PDF](#)
2. **Nunn KL**, Clair GC, Adkins J, Engbrecht K, Fillmore T, Forney LJ. Amylases in the human vagina. *mSphere* 5: e00943-20. [PDF](#)
3. **Nunn, KL.**, Ridenhour, BJ., Chester, EM., Vitzthum, VJ., Fortenberry, JD., and Forney, LJ. Vaginal glycogen, not salivary estradiol, is associated with vaginal bacterial community composition in black adolescent women. *J Adolesc Health.* 2019; 65(1):130-138. [PDF](#)
4. Schroeder HA, **Nunn KL**, Schaefer A, Henry CE, Lam F, Pauly MH, Whaley KJ, Zeitlin L, Humphrys MS, Ravel J, Lai SK. Herpes simplex virus-binding IgG traps HSV in human cervicovaginal mucus across the menstrual cycle and diverse vaginal microbial composition. *Mucosal Immunol.* 2018;11(5):1477-1486. [PDF](#)
5. **Nunn KL**, Forney LJ. Unraveling the Dynamics of the Human Vaginal Microbiome. *Yale J Biol Med.* 2016; 89(3):331-337. [PDF](#)
6. **Nunn KL**, Wang YY, Harit D, Humphrys MS, Ma B, Cone R, Ravel J, Lai SK. Enhanced trapping of HIV-1 by human cervicovaginal mucus is associated with *Lactobacillus crispatus*-Dominant microbiota. *mBio.* 2015; 6(5): e01084-15. [PDF](#)

## **PATENTS**

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1. Lai SK, Wang YY, Kannan A, **Nunn KL**, Subramani B, Cone R. (2012) Compositions and Methods for Inhibiting Pathogen Infections. UNC – Chapel Hill. WO2014070786A1: US 10,100,102 B2 (Issued); EP2912060B1 (Issued); US 2019/0023769A1 (Issued); EP3666285A3 (Pending).