

Nadia M. Domínguez, Ph.D

e²studio ◇ 1336 Williamson St ◇ Madison, WI 53703 ◇ nadia721@e2studio.org

Education

University of Wisconsin-Madison , Madison, WI Microbiology Doctoral Training Program (PhD)	2002 – 2009
University of Minnesota , Minneapolis, MN 38 credits toward Master of Public Health (MPH)	2000 – 2002
University of St. Thomas , St. Paul, MN Bachelor of Arts in Biology, <i>Cum Laude</i>	1995 – 1998
Stanford University , Stanford, CA	1994 – 1995

Professional Experience

Assistant Professor—Microbiology and Molecular Biology Fall 2012 – Summer 2013

Visiting Professor—Microbiology Fall 2011 - 2012
Edgewood College, Madison, WI

- Developed active learning course curriculum and assessments for microbiology and molecular biology lecture and laboratory courses
- Instructed developed courses, implemented and delivered materials and assessments via face-to-face interactions and online tools
- Mentored, trained, and advised six undergraduate students in research involving the extension of my doctoral work and the overexpression of toxic proteins as an alternative treatment to gonococcal infections
- Advised and tracked undergraduate biology majors toward successful degree completion and future career planning and recruited potential biology majors
- Performed major curriculum evaluation and assessment by identifying and aiding in core competencies for biology and pre-nursing majors
- Established collaboration with Madison College Biotechnology Program and organized Stem Cell workshops for students and faculty
- Directed and established laboratory setup and preparation
- Served on safety and department curriculum assessment committees

Assistant Professor—Microbiology and Genetics

Carroll University, Waukesha, WI Fall 2010 – Summer 2011

- Developed and taught instructional and course curriculum for microbiology and genetics lecture and laboratory courses
- Developed and performed course assessments
- Coordinated and designed curriculum and supervised six adjunct instructors for lab courses
- Mentored nine undergraduates in Capstone projects in microbial and molecular research
- Mentored, trained, and advised two summer research students in collaboration with the Dillard Lab at UW-Madison
- Advised undergraduate biology majors toward successful degree completion and future career planning
- Established and managed budget proposal for research lab and directed lab setup
- Acted as team lead for lab course preparation and maintenance

Interim Director & Biotechnology Outreach Specialist—BioTrek Program, UW Extension*University of Wisconsin-Madison*

December 2009 – August 2010

- Supervised four employees in daily outreach operations
- Initiated, developed, coordinated, publicized, and evaluated educational activities for biotechnology educators and the public.
- Transformed how people view and perform science through training educators, collaborators, and partners in UW-Extension and local as well as statewide organizations
- Recruited volunteers and established a volunteer base for outreach activities
- Organized, developed, and lead outreach training workshops
- Established and maintained University and statewide partnerships, including those with the Wisconsin Alumni Association (WAA), Osher Lifelong Learning Institute and Wisconsin Public Television
- Organized and recruited researchers for both the public seminar series Wednesday Nite @ the Lab (WN@TL) and Participatory Learning and Teaching Organization (PLATO) program,
- Partnered with Science Alliance to organize the annual Science Expeditions, with WAA's 'Grandparents University', and with the UW-Extension 'College Days' program.
- Directed the development of educational activities to introduce teachers and students to biotechnology in collaboration with UWBC Mass Spectrometry core facility
- Managed and administered outreach component of NSF funded grant

Research Assistant

2002 – 2009

University of Wisconsin-Madison. Madison, WI

- Investigated the *in vitro* effects of a large genetic element, the gonococcal genetic island (GGI), on pathogenesis of *Neisseria gonorrhoeae*, the mechanisms involved in excision, acquisition, and transfer of the GGI to other species, and the ability of the GGI to spread through a population
- Published in peer-reviewed journals and presented work at national and international conferences on a novel function of two systems of recombination, the *XerCD* site-specific and *Rec* homologous recombination systems
- Maintained records of expenses and submitted expense reports for federally funded grants
- Peer-Reviewed and edited manuscripts for publication

Instructor—Medical Microbiology*Madison Area Technical College, Madison, WI*

Fall 2006

- Introduced nursing students to microbiology using both lecture and laboratory format.
- Implemented basic microbiology and introduced human diseases caused by pathogenic microbes.
- Instructed students on basic aseptic technique and emphasized isolation and identification of clinically relevant pathogenic microbes.

College Access Program Instructor—Summer Math and Science Workshop*University of Wisconsin-Madison*

Summer 2006

- Proposed, developed, and instructed a course titled 'Microbes, Molecules, and Man' geared toward talented and gifted high school students of minority status
- Introduced students to general microbiology, molecular biology and basic laboratory technique, as well as inspired critical thinking.
- Supervised students' final project to be presented before the entire CAP program at the closure of the summer session

Intern

Spring 2004

Applied Molecular Evolution/Eli Lilly. San Diego, CA

- Developed a high-throughput assay for determining binding affinities and kinetics of proteins and antigenic epitopes using a magnetic bead platform to separate antibody-antigen complexes from free antibodies

Student Worker/Senior Paraprofessional

2001 – 2002

Minnesota Department of Health (MDH). Minneapolis, MN

- Conducted a cohort study to determine baseline varicella (chicken pox) immunization rate for toddlers attending daycare and extrapolate predictors of vaccination
- Performed 80 site visits across the state
- Performed statistical analysis on data and maintained database

Research Associate

1999 – 2000

R&D Systems. Minneapolis, MN

- Purified and characterized monoclonal, polyclonal, and recombinant antibodies
- Routinely performed ELISA and Western blots on purified products
- Performed antigen-affinity purification of polyclonal antibodies and isolation of IgG specific antibodies using HPLC instrumentation

Additional Mentoring/Outreach Experience
Founder and Professional Tutor, *e²studio*, Madison, WI (present)**Co-Organizer of Carroll Outreach Day**, Waukesha, WI (May 2011)**PLATO Guest Lecturer** — *University of Wisconsin-Madison* (March 2007, April 2010)**Private Biology, Chemistry and Mathematics Tutor**, Madison, WI (2005 – 2008)**Undergraduate Mentor**, *UW-Madison* (2005 – 2006)**Research Undergraduate Experience Mentor**, *UW-Madison* (Summer 2003)**Teaching Assistant**—Bacterial genetics and intro micro lab courses, *UW-Madison* (2003 – 2004)**Mathematics/Biology Tutor**, *Lee Education Center*, Mendota Heights, MN (1999 – 2002)**Teaching Assistant**—Chemistry lab course, *University of Minnesota-Twin Cities* (Fall 2001)**Mathematics Tutor**, *Huntington Learning Center*, Woodbury, MN (1999)**Teaching Assistant**—intro genetics and intro bio lab courses, *UST*, St. Paul, MN (1997 – 1998)**Private Mathematics Tutor**, St. Paul, MN (1996 – 1997)**Volunteer Mathematics Tutor**, St. Paul junior and senior high schools, St. Paul, MN (1996)

Computer Skills

Proficiency in Excel, Word, Course Management Systems (BlackBoard, LMS), PowerPoint, Adobe Illustrator, EndNote

Familiarity with Access, FoxPro, SAS, SAS Enterprise Guide

Publications

Domínguez NM, Hackett KT, Dillard JP. 2011. XerCD-mediated site-specific recombination leads to loss of the 57-kilobase gonococcal genetic island. *Journal of Bacteriology*. 193(2):377-88.

Zola TA, Strange HR, Dominguez NM, Dillard JP, Cornelissen CN. 2010. Type IV Secretion Machinery Promotes Ton-Independent Intracellular Survival of *Neisseria gonorrhoeae* within Cervical Epithelial Cells. *Infection and Immunity*. 78: 2429-2437.

Hamilton HL, Domínguez NM, Schwartz KJ, Hackett KT, Dillard JP. 2005. *Neisseria gonorrhoeae* secretes chromosomal DNA via a novel type IV secretion system. *Molecular Microbiology* 55 (6),1704-1721.

Minnesota Department of Health. Retrospective Kindergarten Survey, 2001-02. Available from URL: <http://www.health.state.mn.us/divs/idepc/immunize/stats/retrosur02.html>.

Abstracts

Dominguez, N.M. and J.P. Dillard. 2008. Factors Affecting Excision of the Gonococcal Genetic Island from the Chromosome. 16th International Pathogenic *Neisseria* Conference.

Dominguez, N.M. and J.P. Dillard. 2007. The Gonococcal Genetic Island: A Mobile Element in *Neisseria*? Fourteenth Annual Midwest Microbial Pathogenesis Conference.

Hagen, T.A., N.M. Dominguez, J.P. Dillard, and C.N. Cornelissen. 2006. The Gonococcal Genetic Island Provides a Bypass Mechanism to TonB-Dependent Intracellular Survival of *Neisseria gonorrhoeae* within Cervical Epithelial Cells. 15th International Pathogenic *Neisseria* Conference.

Dominguez, N.M. and J.P. Dillard. 2005. Integration and Excision of the Gonococcal Genetic Island. Twelfth Annual Midwest Microbial Pathogenesis Conference.

Dominguez, N.M., H.L. Hamilton, J.L. Edwards, M.A. Apicella, and J.P. Dillard. 2005. The Integration and Excision of the Gonococcal Genetic Island of *Neisseria gonorrhoeae*. Molecular Genetics of Bacteria and Phages Meeting.

Dominguez, N.M., H.L. Hamilton, J.L. Edwards, M.A. Apicella, and J.P. Dillard. 2005. The Mobilization of the Gonococcal Genetic Island of *Neisseria gonorrhoeae*: A XerCD-Mediated Event? American Society of Microbiology General Meeting.

Hamilton, H.L., N.M. Dominguez, J.L. Edwards, M.A. Apicella, and J.P. Dillard. 2004. Interactions of with the host: a role for the gonococcal genetic island-encoded type IV secretion system. American Society of Microbiology General Meeting.

Dominguez, N.M., H.L. Hamilton, J.L. Edwards, M.A. Apicella, and J.P. Dillard. 2004. The Gonococcal Genetic Island of *Neisseria gonorrhoeae*: A Mobile Genetic Element? 14th International Pathogenic *Neisseria* Conference.

Dominguez, N.M. and J.P. Dillard. The Gonococcal Genetic Island may be a mobile genetic element. 2003. Tenth Annual Midwest Microbial Pathogenesis Conference.