

Renée M. Gilberti, Ph.D.  
Biographical Sketch

***Renée M. Gilberti, Ph.D.***

***Current Occupation:*** University of Connecticut McNair Scholars Program Coordinator

***Education and Post-doctoral training:***

University of Connecticut Health Center, Farmington, CT 2011 – 2013	Post-doctoral Research Fellow
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*Cell Biology research lab: September 2011 – March 2012*

*Biochemistry research lab: March 2012 – March 2013*

University of Connecticut, Storrs, CT 2003 – 2011	Ph.D., Cell Biology
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University of New Hampshire, Durham, NH 1999 – 2003	B.S., Microbiology
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*Minor: Italian*

***Personal Statement:***

As an undergraduate at the University of New Hampshire is when I became interested in pursuing S.T.E.M. research. As a junior, I began working in a microbiology/ immunology laboratory during the academic year and also during the summer when I was awarded a summer research fellowship. These experiences that I gained as an undergraduate insured my reasoning to pursue a Ph.D. degree as my next life goal. At the University of Connecticut, I aim to teach a First Year Experience (FYE) course that is an introduction to S.T.E.M. research opportunities, entitled Exploring S.T.E.M. Research 101, so other undergraduates can also have this awesome, life-changing experience.

I am a trained cell biologist and biochemist and want to extend my expertise to the University freshmen and sophomores regarding how they can become involved in laboratory research opportunities at the University of Connecticut and educate them about the types of careers to which these experiences lead. While I was a Ph.D. student in a cell biology research laboratory, I was also the cell biologist for collaboration with a materials science laboratory for approximately 4 years, so I can also speak to the advantage of being involved in inter-disciplinary research projects. As the McNair Scholars Program Coordinator within the Center for Academic Programs at the University, I am familiar with opportunities for undergraduate students in the S.T.E.M. disciplines who aspire to pursue undergraduate research and subsequent graduate degrees in their field. Teaching an FYE course at the University will allow me to continue to do what I enjoy most – teaching and mentoring. Below, and also listed on my Curriculum Vita, are the details of the courses I taught as a Volunteer Teaching Assistant as an undergraduate student at the University of New Hampshire, or as a Graduate Assistant/ Teaching Assistant or as an Instructor at the University of Connecticut. I have over 7 years of teaching experience, and I even began working as an Academic Mentor while I was an undergraduate at the University of New Hampshire as well. Additionally, I was the senior-most Ph.D. student in the laboratory from which I obtained my Ph.D. for a majority of the 8 years I was in the laboratory, and I was a

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Professional Reviewer for an online journal for national and international undergraduate researchers, The Journal of Young Investigators, for 2 years. Therefore, I have also honed my mentoring and teaching skills outside of the classroom. These skills have helped me to become a better educator, mentor, listener, writer, and colleague.

For my teaching and mentoring efforts, I have been awarded a Mover and Shaker award and a University Outstanding Teaching Assistant award. Additionally, I was selected for a Graduate Mentorship for the Northeast Alliance Summer Research Program and Minority Undergraduates and was appointed as Instructor for a writing-intensive Molecular Cell Biology (MCB) course and also for the Biology course during the Pre-college Enrichment Program. My S.T.E.M. laboratory research efforts are demonstrated in the manuscripts I have published, and that are in preparation to be published, as a Ph.D. student and also as a Post-doctoral Research Fellow at the University of Connecticut Health Center; I was also awarded numerous fellowships to commend my progress in the MCB Ph.D. program while I was a Ph.D. student.

In addition to my teaching and mentoring abilities, I have also had the unique opportunity to gain leadership/ administration skills as a Ph.D. student. For 6 years, I was part of the MCB Graduate Student Association, and I was President for 5 of those 6 years. During that time, I had the opportunity to invite an outside speaker to visit the University of Connecticut to present his work during the MCB Fisher-Sparks Guest Lectureship. This guest speaker turned out to be a tremendous faculty mentor to me during my Ph.D. and post-doctoral training periods and I also Chaired a Gordon Research Seminar (conference exclusively for Ph.D. students and post-doctoral fellows which precedes a week-long conference) on Phagocytosis under his tutelage. These abilities highlight my time management and organizational skills. For example, I Chaired the Gordon Research Seminar just 8 days after defending my Ph.D. degree. Furthermore, I excelled at maintaining my role as President of the MCB Graduate Student Association while holding Teaching Assistantships and being productive in the research laboratory.

I aim to continue to inspire young undergraduate students to engage in laboratory research opportunities and expose them to all of the avenues available to them thereafter. I look forward to teaching an FYE course at the University of Connecticut.

***S.T.E.M. Teaching Experience:***

*University of Connecticut*

2003 – 2011	<b><i>Molecular and Cell Biology: Teaching Assistant (semesters taught):</i></b> Microbiology for majors (laboratory (2)), Biology for majors (laboratory (2)), Biology for non-majors (laboratory (2)), Cell biology (journal club; honors (3)), Cell biology (discussion/ lecture (3))
2007	<b><i>Molecular and Cell Biology: Instructor:</i></b> Research literature in molecular and cell biology (writing-intensive)
2004 (summer)	<b><i>Pre-college enrichment program (PCEP): Instructor:</i></b> Biology lecture and laboratory

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*University of New Hampshire*

2002 – 2003      *Molecular, Cellular, and Biomedical Sciences: Undergraduate Volunteer Teaching Assistant (semesters taught):* Biology (laboratory (1)), Pathogenic Microbiology (laboratory (1))

***Professional Mentoring Experience:***

2013 – Present      *Center for Academic Programs, University of Connecticut:* McNair Scholars Program Coordinator  
2003 – 2011      *Molecular and Cell Biology, University of Connecticut:* Senior Ph.D. student in my Ph.D. dissertation research laboratory  
2007      *Northeast Alliance, University of Connecticut:* Summer Research Program for Minority Undergraduates Graduate Mentorship  
2001 – 2003      *Center for Academic Resources, University of New Hampshire:* S.T.E.M. Academic Mentor

***S.T.E.M. Research Experience:***

**2011 - 2013: University of Connecticut Health Center, Farmington, CT**

- Post-doctoral Research Fellow
- March 2012 - March 2013: *Stephen M. King, Ph.D., Molecular, Microbial, and Structural Biology:* Utilization of the bi-flagellate green alga, *Chlamydomonas reinhardtii*, to study structural components of the dynein motor protein at the molecular, biochemical, structural, and cellular levels, particularly with relation to FAP163 and FBB18 proteins during intraflagellar transport.
- September 2011 - March 2012: *Jennifer S. Tirnauer, M.D., Center for Molecular Medicine:* Studied myoblast C2C12 cells to investigate the effects of microtubule destabilization and stabilization on differentiation, CRMP2 (collapsin response mediator protein 2) phosphorylation, and the effect of CRMP2-actin binding on CRMP2 function.

**University of Connecticut, Storrs, CT**

**2003 – 2011**

- Graduate Assistant/ Teaching Assistant
- *Molecular and Cell Biology: Cell and Developmental Biology Ph.D. Program*
- Dissertation Title: The Molecular Pathway of Non-opsonized Particle Phagocytosis and the Relationship to Silica-induced Cell Death.
- Principal Investigator: David A. Knecht, Ph.D.
  - Established, for the first time, the kinetics of antibody-coated (opsonized) and protein-coated (non-opsonized) particle phagocytosis.
  - Determined that opsonizing silica particles suppresses silica-induced cell death.
  - Characterized the internalization and downstream vesicle trafficking pathways of non-opsonized silica and latex beads.
  - Identified that the rate of non-opsonized particle phagocytosis is temperature-dependent.
  - Determined that the presence of microtubules is necessary for non-opsonized particle uptake.

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**2007 – 2011**

- *Inter-departmental collaboration: The Institute of Materials Science and the Department of Chemical, Materials, and Biomolecular Engineering*
- Principal Investigator: Bryan D. Huey, Ph.D.
  - Investigation of the Actin Cytoskeletal Response of Live MH-S Cells to Nano-newton Forces using Atomic Force Microscopy, Nano-indentation, and 3-D Optics techniques.

**2000 – 2002: Undergraduate Research Experience**

- Summer Volunteer – Microbiology laboratory assistant, *Lahey Clinic, Burlington, MA*
- Summer Volunteer – Molecular Biology laboratory assistant, *Edith Norse Rogers Memorial Veteran's Hospital, Bedford, MA* (Principal Investigator: John Wells, Ph.D.)
- Summer Undergraduate Research Opportunity Fellow – Microbio/ immunology laboratory
  - *University of New Hampshire, Durham NH*
  - Research Goal: to determine if OmpD and OmpD-LPS complexes play an inhibitory role in the attachment of *Salmonella typhimurium* to the macrophage-like cell line, U-937 (Principal Investigator: Thomas Pistole, Ph.D.)

***Awards (relevant to teaching, mentoring, and S.T.E.M. research experience):***

2008	<i>University of Connecticut:</i> MCB Departmental Fellowship
2008	<i>University of Connecticut:</i> Jean Lucas-Lenard Special Summer Fellowship in Biochemistry
2008	<i>University of Connecticut:</i> MCB Departmental Annual Retreat Poster Presentation Award
2008	<i>University of Connecticut:</i> Doctoral Dissertation Fellowship
2007	<i>University of Connecticut:</i> Outstanding Teaching Assistant Award
2007	<i>Northeast Alliance, University of Connecticut:</i> Summer Research Program for Minority Undergraduates Graduate Mentorship
2003	<i>University of New Hampshire:</i> Mover and Shaker Award
2001 - 2002	<i>University of New Hampshire:</i> COLSA Summer Undergraduate Research Opportunities Fellowship

***Publications in Peer-Reviewed Journals:***

**Gilberti, R.M.,** Joshi, G.N., and D.A. Knecht. The Phagocytosis of Crystalline Silica Particles by Macrophages. *Am J Respir Cell Mol Biol*; 2008. 39: 619-627.

Costantini, L.M., **Gilberti, R.M.,** and D.A. Knecht. The Phagocytosis and Toxicity of Amorphous Silica. *PLoS ONE*; 2011. 6(2): e14647.

Mian, I., Pierre-Louis, W.S., Dole, N., **Gilberti, R.M.,** Dodge-Kafka, K.L., and J.S. Tirnauer. LKB1 destabilizes microtubules in myoblasts and contributes to myoblast differentiation. *PLoS ONE*; 2012. 7(2):e31583.

Patel-King, R.S.\*, **Gilberti, R.M.\***, Hom, E.F., and S.M. King. WD60/FAP163 is a Dynein Intermediate Chain Required for Retrograde Intraflagellar Transport in Cilia. *Mol Biol Cell*; 2013 [Epub ahead of print].

**Note: \* indicates equal contributions were made by the authors**

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Austin-Tse, C.\*, Halbritter, J.\*, Zariwala, M.A.\*, **Gilberti, R.M.**, Hellman, N., Pathak, N., Liu, Y., Panizzi, J., Patel-King, R.S., Tritscher, D., Bower, R., O'Toole, E., Gee, H.Y., Porath, J., Hurd, T.W., Chaki, M., Diaz, K.A., Kohl, S., Lovric, S., Braun, D.A., Schueler, M., Airik, R., Otto, E.A., Omran, H., Porter, M.E., King, S.M., Knowles, M.R., and I.A. Drummond and F. Hildebrandt. A zebrafish ciliopathy screen reveals *C21ORF59* and *CCDC65* defects as causing human primary ciliary dyskinesia. In press.

**Gilberti, R.M.**, Joshi, G.N., and D.A. Knecht. The Molecular Pathway of Non-opsonized Particle Phagocytosis is a Microtubule-dependent Process. In preparation.

Palumbo, V., **Gilberti R.M.**, Huey, B.D., and D.A. Knecht. Combined Atomic Force Microscopy and 3-D Optical Microscopy: Observation of Active Responses of Living MH-S Macrophage Cells to Pico-Newton-Scale Loads. In preparation.

***Leadership/ Service Roles Held Concurrently:***

*University of Connecticut*

2009 - 2011	Chair - Phagocytes Gordon Research Seminar, June 18-19, 2011
2009 - 2011	Professional Reviewer - The Journal of Young Investigators
2007 - Present	Career Mentor - University of New Hampshire Alumni Center
2005 - 2011	Chemical Hygiene Officer - Knecht Laboratory
2005 - 2008	President - MCB Graduate Student Association
2005 - 2008	Board of Trustees Honors and Awards Committee
2004 - 2005	Chief Financial Officer - MCB Graduate Student Association

*University of New Hampshire*

2001 - 2003	S.T.E.M. Academic Mentor - Center for Academic Resources
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