Curriculum Vitae

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Leadership Experience and Accomplishments

2014-present **Dean of Graduate Studies**, WPI; inaugural full time Graduate Dean for WPI

-grew the Office of Graduate Studies from a staffing level of 1.5 FTE to 35 FTE in 5 years, gradually assuming responsibility for Online and Professional Education and bringing together all of the Graduate Admissions and Recruiting functions under this office. WPI previously had a centralized Graduate Admissions under Enrollment Management, another Graduate Admissions Office in the School of Business, and recruiting functions in the Academic and Corporate Engagement Division.

-Manage > $5M in operating budgets and $1M in restricted accounts

-Lead PhD Plan component of WPI's Strategic Plan, *Elevate Impact*, which began in 2015, with key highlights:

* I launched the Center for Graduate Student Professional Development. In two years, we grew participation in graduate student training programs by 200%, and we served 391 unique students, with the average student attending 6 workshops throughout the year. Topics include communication skills, management and leadership, career planning, and ethics.

* I advocated for and received funding to launch the PhD Global Scholarship program, which allows PhD students to spend a summer conducting research at an international laboratory, under the co-mentorship of their thesis advisor and a faculty member from the international university. Our students have engaged in projects with universities in Japan, Switzerland, Italy, the United Kingdom, Australia, France, Germany, Israel, Singapore, and Canada.

-Serve as primary advocate for all 2000+ graduate students (includes 465 PhD students and 582 online students).

-Oversee 23 PhD programs, >45 Master's programs, and numerous graduate certificates (includes 14 fully online MS programs)

-Serve as member of Provost's Cabinet and President's Management Council. I also serve as the Provost's appointee on the Committee on Graduate Studies and Research, a committee of elected faculty members.

-Recruit and support graduate fellows, including newly initiated Presidential Fellows for PhD students. Over a three year period, I was awarded funding for 7 annual PhD Fellowships. These can now be used each year to attract a highly qualified and diverse pool of PhD students.

-Drive academic policies related to graduate studies. As the inaugural full-time Dean of Graduate Studies, I found that there were a number of policies that were lacking for graduate students. All academic policies must be passed through the appropriate governance committee and endorsed by the full faculty. A selection of policies for which I was the champion/author include:

* Childbirth/Adoption Accommodation Policy, which brings WPI into compliance on Title IX guidelines and also allows Teaching Assistants and Research Assistants to have an 8-week paid leave after childbirth or adoption, with a shorter benefit for the non-custodial parent

* Graduate Internship Policy, which allows all graduate students at WPI to complete an industrial internship as an integrated part of their graduate studies, and which will appear on their transcript

* Modernization of the Academic Standards policy for graduate students, making it easier for graduate students to be successful by giving feedback early in the academic career, as well as incorporating a more fair process that includes a review committee for appeals on dismissal

* Leave of Absence policy for graduate students (previously this did not exist and we could not effectively track these students, nor could we effectively report on time to degree)

* I worked with faculty governance to create a policy that defines the responsibilities and benefits afforded to Research Assistants and Teaching Assistants, including guidelines for minimum stipend levels and minimum number of tuition credits that must be covered for MS and PhD assistants

2013-2014 **Assistant Dean of Engineering**, WPI

-Catalogued faculty research profiles and identified trends/emerging areas for engineering and interdisciplinary research

-Presented the unit's education programs to prospective students and their parents as part of recruiting events and open houses

-Represented the unit at alumni events and during interactions with potential industrial partners

2012-2020 **Principal Investigator**, *IGERT: Training Innovative Leaders in Biofabrication*

-Created and led a highly interdisciplinary graduate training program for 20 PhD students in Biomedical Engineering, Chemical Engineering, Biology & Biotechnology, Physics, and Interdisciplinary Studies

-Supported the development of an innovation mindset in STEM PhD students through interdisciplinary courses, a graduate certificate program in Entrepreneurship, experiential opportunities, and professional development

-Launched a seminar series for graduate student professional development, with topics including career preparation, communication skills, work/life balance, ethics, global impact, and innovation. This seminar series eventually was scaled up and institutionalized for all graduate students at WPI, once I moved into the Graduate Dean role

Faculty career: **Professor**, Chemical Engineering, WPI (2010-present); **Associate Professor** Chemical Engineering, WPI (2006-2010); **Assistant Professor**, Chemical Engineering, WPI (2000-2006). During this time, I have also held joint appointments in Biomedical Engineering and in Civil and Environmental Engineering.

Key research and education highlights from faculty career:

- Led interdisciplinary teams and sought funding for education and training programs, resulting in >$5M in funding to support such efforts, including a $3M NSF IGERT grant

- Managed and led high-profile research program in bacterial adhesion, biofilms, and antimicrobial peptides. Sponsored research awards of >$2.4M with funding from NSF, NIH, DOD, foundations, and industry.

- Published > 70 journal articles and edited 2 books, with regular student co-authors (graduate and undergraduate students). Current h-index of 37.

- *Founding Director*, WPI Major Qualifying Project Center at ENSIC (Ecole Nationale Supérieure des Industries Chimiques) in Nancy, France (2000-2013); Developed and directed an international research center to host senior-level engineering undergraduate students in partnership with ENSIC. Recruited, supported, and mentored 50 undergraduate students in 25 projects over an 11-year period. Enlisted faculty mentors at ENSIC and co-advisors at WPI. Oversaw all of the logistics and management of the project center.

- *Director and PI of two NSF-funded Inquiry-based Bioengineering Research and Design Experiences for Middle-School Teachers* (2008-2011) and (2012-2014), which brought opportunities for teachers from Worcester Public Schools, Framingham Public Schools, and other local school districts to engage in high-level bioengineering research with WPI faculty members. Teachers developed a curriculum unit that allowed them to actively engage their students in the engineering design process. 50+ teacher participants from Worcester and area middle-schools were involved in the program over the 6 year duration.

Education and Training

1995	B.S. in Chemical Engineering, The University of Rochester
1995	B.S. in Environmental Science, The University of Rochester
1997	M.S. in Environmental Engineering, The University of Arizona
2000	Ph.D. in Environmental Engineering, The Pennsylvania State University
2011-2012	*HERS Faculty Fellow* (HERS Wellesley Institute for Women in Higher Education Administration). HERS is a leadership training experience for women in higher ed, and focuses on institutional awareness, networking, and self-knowledge. In addition to a curriculum and structured networking, each participant completes a self-designed leadership project that benefits their home institution. The leadership project that I chose for my HERS experience was to create a graduate student professional development program, which eventually was incorporated into the IGERT training program, and later, extended to all graduate students at WPI.
2012	*ELATE Fellow* (Executive Leadership in Academic Technology and Engineering), now known as the ELATES program. I was part of the inaugural class of the ELATE program, which is a national leadership program for senior academic women in STEM. This program helped me develop leadership competencies, including strategic finance and resource management, personal and professional leadership effectiveness, and organizational dynamics.
2012	*Coleman Foundation Faculty Entrepreneurship Fellow*. The goal of this program is to build support for entrepreneurship education in non-business departments. Based on my participation in this program, I developed a curriculum for graduate students in STEM discipline that incorporated entrepreneurship and was also tailored to their thesis research.

Awards and Honors

2018	*Fulbright Scholar*, International Education Administrators Seminar, France. The purpose of this selective seminar participation was to expose US higher ed leaders to France's higher ed research and education systems. As a cohort of leaders from across the US, we visited multiple universities in Montpellier and Paris, and also spent time in Brussels with EU program officers and education officials.
2015	*Innovation Prize*, ICPIC 2015 (International Conference on Prevention and Infection Control), Geneva, Switzerland. The ICPIC forum is for the exchange of knowledge on preventing healthcare infections. I was awarded this prize for making the best "pitch" of a technology for infection prevention. I talked about an antimicrobial coating that we are developing for use in catheters and other biomedical devices. This coating can be used to prevent infections, even among antibiotic-resistant bacteria.

2014	*Chairman's Exemplary Faculty Prize*, WPI. Donald K. Peterson '71, former Chair of the WPI Board of Trustees, through his personal philanthropy, created the WPI Chairman's Exemplary Faculty Prize in 2007. The award is presented annual to an individual who excels in all areas of faculty performance, including teaching, research and scholarship, and advising.
2005	*Sigma Xi Junior Faculty Research Award* (presented by WPI chapter). The Sigma Xi chapter at WPI presents an award to one junior faculty member per year, in recognition of developing and outstanding research program.
2005	*"Women of Strength" Award* (co-sponsored by Pratt-Whitney and WPI). Presented in recognition of mentoring activities for female students.
2003	*NSF CAREER Award*. This award is for early career faculty to recognize their potential and provide support for their activities in the integration of research and education. For my award, "CAREER: Molecular-Scale Interactions Between Microbes and Surfaces in the Environment", I developed a research program in using molecular-scale approaches to study bacteria in the subsurface environment. The educational program spanned from the pre-college to PhD level, and included international research opportunities for undergraduates in France. The work resulted in 18 journal publications, and trained 3 PhD students, 1 MS student, and 6 undergraduates.

Service to WPI

Shared Governance at WPI

- Committee on Academic Operations, CAO (2001-2004)
- Research Development Council, RDC (2003-2004)
- President's Commission on Graduate Studies and Research (2004-2007)
- University Council (2006-2009)
- Committee on Academic Policy (2008-2010)
- Committee on Tenure and Academic Freedom (2010-2012)
- Committee on Governance (2012-2014)
- President's Task Force on Graduate Studies (2013-2014, Chair)
- Committee on Graduate Studies and Research (2014-present, I serve as the Provost's representative to this faculty governance committee)

Service in Chemical Engineering Department

Chair, Chemical Engineering Faculty Search Committee (2011-2012)
Chair, Chemical Engineering Department Undergraduate Committee (2009-2013)
Chemical Engineering Department Undergraduate Committee (2001-2003)
Chemical Engineering Department Graduate Committee (2003-2009)
Chemical Engineering Faculty Search Committee (2003-2004)
Chemical Engineering Tenure Committee (2006-2009)
Advisor to student chapter of AIChE at WPI (2000-2003), (2010-2012)

Selected University-wide Search Committees
Search Committee co-Chair, Provost (2014-2015)
Search Committee co-Chair, Vice Provost for Research (2016)
Member of search committee for the following: Dean of Graduate Studies (2008-2009), Vice Provost for Research (2008-2011), Gordon Dean of Engineering (2009-2011), Provost (2011), Vice-Provost for Research (2012-2013), and numerous faculty and Director level search committees

Service to the Engineering Profession

-Reviewer for the National Science Foundation, including the Graduate Research Fellowship Program, Nanoscale Exploratory Research, Nanotechnology, Career program, Engineering Research Centers, SBIR, RET, MRI, Materials Interdisciplinary Research Teams and Materials Research Centers, Environmental Health and Safety of Nanomaterials, TUES program, IGERT, STTR, NRT, and unsolicited proposals in numerous divisions

-Study Section Participation for National Institutes of Health, including Biomaterials and Biointerfaces, Microscopy, Nanotechnology, BMBI Biomaterials and Biointerfaces Study Section

Sponsored Research and Grants

Over my career, I have raised >$7.4M in funds for research and education. A few of the most noteworthy grants are listed below.

IGERT: Training Innovative Leaders in Biofabrication. NSF. 5/1/2012-6/30/2020. $3M. (I am the PI, along with co-PIs Kris Billiar, Marsha Rolle, Glenn Gaudette, and Frank Hoy)

REU Site: Integrated bioengineering research, education, and outreach opportunities for females and underrepresented minorities at WPI. NSF. 3/1/2005-2/28/2009. $271,255.

CAREER: Molecular-scale interaction between bacteria and natural organic matter in the environment. NSF. 5/31/2004-6/30/2009. $432,156.

RET Site: Inquiry-based bioengineering research and design experience for middle-school teachers. NSF. 2/1/2008-1/31/2012. $390,048.

MRI: Acquisition of an Atomic Force Microscope for Bioengineering and Life Science Research Across Multiple Scales: Molecules, Polymers, Microbes, and Cells (Camesano- PI, with co-PIs Garcia, Burnham, Billiar, and Politz), NSF, $198,000. 8/1/2009-7/31/2012.

Anti-Adhesion Mechanisms of Cranberry Constituents on *E. coli.* NIH. 4/1/2009-3/31/2012. $218,032.

CCLI: Developing Grand Challenges Nanobiotechnology Laboratory for Sophomores. NSF. 7/1/2010-6/30/2013. $199,433.

I-Corps Teams: Improving Patient Outcomes via Surface-Tethered Peptides to Prevent Implant Infections. National Science Foundation. 4/1/2014-12/31/2015. $50,000 (with Frank Hoy and Todd Alexander)

RET Site: Inquiry-based bioengineering research and design experience for middle-school teachers. NSF. 9/1/2011-2/29/2016. $384,000.

Louis Stokes Alliance for Minority Participation Phase III Grant, PI of WPI subcontract, National Science Foundation. 6/1/2015-5/31/2018. $330,000.

Selected Recent Journal Publications (>70 journal publications in career since 1998)

Bailey, C., Kamaloo, E., Wang, K.F., Nagarajan, R., and **T.A. Camesano**. Size Dependence of Gold Nanoparticle Interactions with a Supported Lipid Bilayer: A QCM-D Study, *Biophysical Chemistry*, 2015, 203-204:51-61.

Lozeau, L.D., Alexander, T.E., and **T.A. Camesano**. Mechanistic analysis of tethered antimicrobial peptide chrysophsin-1 as a function of tether length using QCM-D, *Journal of Physical Chemistry B*, 2015, 119:13142-13151.

Lozeau, L.D., Grosha, J., Kole, D., Prifti,F., Dominko, T., **Camesano, T.A.**, and M. W. Rolle. Collagen tethering of synthetic human antimicrobial peptides cathelicidin LL37 and its effects on antimicrobial activity and cytotoxicity. *Acta Biomaterialia*, 2017, 52(1):9-20.

Lozeau, L.D., Rolle, M.W., and **T.A. Camesano**. A QCM-D Study of the Concentration-and time-dependent interactions of Human LL37 with model mammalian lipid bilayers, *Colloids and Surfaces B: Biointerfaces*, 2018, 167:229-238.

Lozeau, L.D., Youssefian, S., Rahbar, N., **Camesano, T.A.**, and M.W. Rolle. Concentration-Dependent, Membrane-Selective Activity of Human LL37 Peptides Modified with Collagen Binding Domain Sequences, *Biomacromolecules*, 2018, 19:4513-4523.

Lozeau, L.D., Rolle, M.W., and **T.A. Camesano**. Mechanistic predictions of the influence of collagen-binding domain sequences on human LL37 interactions with model lipids using QCM-D, *Biointerphases*, 2019, 14(2):021006.

Alexander, T. E., Lozeau, L.D., and **T.A. Camesano.** QCM-D Characterization of Time-Dependence of Bacterial Adhesion, *The Cell Surface*, 2019, 5:100024, https://doi.org/10.1016/j.tcsw.2019.100024.

Selected Books Edited

1. **Camesano, T.A.** and C.M. Mello. Microbial Surfaces: Structure, Interactions, and Reactivity. 2008. ACS Symposium Series 984. American Chemical Society, Washington, D.C.

2. **Camesano, T.A.** Nanotechnology to Aid Chemical and Biological Defense. NATO Science for Peace and Security Series A: Chemistry and Biology, 2015. Springer.

Selected Conference Proceedings Highlighting Engineering Education and Outreach

1. Camesano, T.A., DiBiasio, D., Billiar, K., Rolle, M., Zhou, S. AC 2008-2040: Incorporating K-12 outreach into an REU program for females. *Proceedings of 2008 ASEE Annual Conference*, Pittsburgh, PA, June 22-25, 2008.
2. Camesano, T.A., Billiar, K., Gaudette, G., Hoy, F., and M. Rolle. Entrepreneurial Mindset in STEM Education: Student Success, Venture Well Open 2016 Proceedings, March 3-5, 2016, Portland, OR.
3. LeBlanc, R.B. and T.A. Camesano. Piloting a Faculty Institute for Online Teaching. Proceedings of the 2017 ASEE Annual Conference & Exposition. June 25-28, 2017, Columbus, OH.
4. LeBlanc, R.B., and T.A. Camesano. Piloting the use of technology to provide better support to students throughout their lifecycle. Proceedings of the 2018 ASEE Annual Conference & Exposition. June 24-27, 2018, Salt Lake City, UT.

Patents

Chimeric peptide comprising an extracellular matrix protein together with an antimicrobial peptide for use as a scaffold in wound dressing WO 2014004719 A3, patent issued March 20, 2014. This technology was licensed in January 2018 by Histogen, Inc.

Teaching

Advisor to 9 PhD students (+ 2 in progress), 11 MS Thesis students, and 100+ undergraduate research or project advisees. I have taught a variety of courses in the undergraduate and graduate Chemical Engineering program, including Separation Processes, Unit Operations Laboratory, Mass Transfer, Colloids and Surface Science, Nanobiotechnology Laboratory, Introduction to Chemical Engineering, Biochemical Engineering, and Nanobiotechnology.

Selected Media

My research has been highly visible, especially work I have done on the health benefits of cranberry compounds. A limited selection of articles that have highlighted my research or other professional accomplishments is listed below.

WebMD
Cut Urinary Tract Infections Risks. Released September, 2006
http://www.webmd.com/content/article/128/116917.htm

Science Daily
Compounds in Cranberries May Be Antibacterial Agents. November 14, 2007.
http://www.sciencedaily.com/releases/2007/11/071113132240.htm

U.S. News and World Report
Study Explains How Cranberries Prevent Urinary Infections, July 31, 2008
http://health.usnews.com/articles/health/healthday/2008/07/31/study-explains-how-cranberries--prevent-urinary-.html

Glamour.com

Afternoon Snack: Have a Glass of Cranberry Juice--It Protects You From More Than Just UTIs!
September 7, 2010
http://www.glamour.com/health-fitness/blogs/vitamin-g/2010/09/afternoon-snack-have-a-glass-o.html

Science Daily
How Cranberry Juice Fights Bacteria at the Molecular Level
https://www.sciencedaily.com/releases/2010/07/100715152907.htm
July 19, 2010

Phys.org
Research team analyzes peptides from fish gills to engineer specialized antimicrobial surfaces
November 29, 2012
http://phys.org/news/2012-11-team-peptides-fish-gills-specialized.html

Inside Science
Cranberries Stop Bacteria in their Tracks
https://www.insidescience.org/news/cranberries-stop-bacteria-their-tracks
November 27, 2013

Science Daily
Juicy News About Cranberries: Blocking Bacterial Infections
https://www.sciencedaily.com/releases/2016/07/160719152220.htm
July 19, 2016

Society for Science and the Public
ISEF alumna follows the 'yellow brick road' to human genetics
https://www.societyforscience.org/content/ssp-blog/isef-alumna-follows-yellow-brick-road-human-genetics
December 20, 2018