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PROFESSIONAL PREPARATION

Education Level	Location	Major/Area	Degree & Year
Undergraduate	UC Santa Barbara	Biology	BA, 1996
Graduate	George Washington University	Physical Chemistry	MPhil, 2000 PhD, 2002
Postdoctoral	University of Washington	Chemical and Bioengineering	2005

ACADEMIC APPOINTMENTS

2014 – present *Associate Professor*, Department of Chemical and Biological Engineering,¹ University of New Mexico
 2012 *Visiting Associate Professor*, Industrial Research Institute Swinburne (IRIS), Swinburne University of Technology, Melbourne Australia
 2011 – 2014 *Associate Professor*, Department of Chemical and Nuclear Engineering, University of New Mexico
 2005-2011 *Assistant Professor*, Department of Chemical and Nuclear Engineering, University of New Mexico

OTHER PROFESSIONAL ACTIVITY

2018 *Co-Founder*, Canavan Scientific Consulting, LLC, canavanscientificconsulting.com
 2017 *Co-Founder*, Adaptive Biomedical Design, LLC, adaptivebiomedicaldesign.com
 2014 – 2016 *Director*, Biomedical Engineering Graduate Program, University of New Mexico
 1991-1997 *Staff Research Assistant*, Los Alamos National Laboratory

RECENT AWARDS AND HONORS

UNM CTSC Health Hackathon Award Winning Team	2018
ADVANCE at UNM Women in STEM Award	2018
AVS Fellow (one of 15 in 2018; only 0.5% of AVS members have become fellows)	2018
UNM Outstanding Teacher of the Year	2018

SELECTED PUBLICATIONS (From 53 total: 31 refereed publications, 8 in preparation, 1 submitted, 2 book chapters, 12 non-refereed publications)

SCIENTIFIC PUBLICATIONS

- Nguyen, P.A.H.;*†† Stapleton, L.;*† Cuylear, D.L.;† Ledesma-Mendoza, A.;† Cooperstein, M.A.;†† **Canavan, H.E.** "The Investigation of the Cytotoxicity of Commercially Available

¹ Reflects the department's name change from Chemical & Nuclear Engineering to Chemical & Biological Engineering.

- Poly(*N*-isopropyl Acrylamide)-coated Surfaces,” invited article for a special issue and cover of *Biointerphases* **13** (6), 06D406 (2018). DOI: <http://dx.doi.org/10.1116/1.5045142>.
- Lenz, K.; Ista, L.K.; Chi, E.Y.; Svihla, V.; **Canavan, H.E.**; “Work in Progress: Use of Prototype Design in Collaborative Groups as a Means of Increasing Students’ Comprehension and Engagement in Biomedical Engineering,” ©2018 American Society for Engineering Education. Board 20: Biomedical Division Proceedings, June 24-27, 2018, Salt Lake City, UT.
 - Cooperstein, M.A.;†† Nguyen, P.A.H.;†† **Canavan, H.E.**, “Poly(*N*-Isopropyl Acrylamide)-Coated Surfaces: Investigation of the Mechanism of Cell Detachment,” invited manuscript for an In Focus issue of *Biointerphases*, **12** (2), 02C401 (2017). DOI: <http://dx.doi.org/10.1116/1.4979920>.
 - Wilde, K.N.; Nguyen, P.H.; Whitten, D.; **Canavan, H.E.** “Skin Irritation Testing of Antimicrobial Conjugated Electrolytes,” invited manuscript for an In Focus issue of *Biointerphases*, **12** (2) 02C403 (2017). DOI: <http://dx.doi.org/10.1116/1.4979918>.

PUBLICATIONS IN ENGINEERING EDUCATION

- Svihla, V.; **Canavan, H.E.**; Kachelmeier, L.; “The Wrong Theory Protocol: A Design Thinking Tool to Enhance Creative Ideation,” submitted to the *International Journal of Design Creativity and Innovation*.
- Lenz, K.;†† Ista, L.K.; Chi, E.Y.; Svihla, V.; **Canavan, H.E.**; “Work in Progress: Use of Prototype Design in Collaborative Groups as a Means of Increasing Students’ Comprehension and Engagement in Biomedical Engineering,” ©2018 American Society for Engineering Education. Board 20: Biomedical Division Proceedings, June 24-27, 2018, Salt Lake City, UT.
- **Canavan, H.E.**; Weisburd, S.; Dirk, E.H.L.; Stanton, M.; Petsev, D.; Fulghum, J.E.; Hollar, K.; López, G.P.; “A Laterally and Vertically Integrated Outreach Program to Increase Participation in Biomaterials-related Engineering,” *Journal of Materials Education* **34** (1-2), 45-58 (2012).
- **Canavan, H.E.**; Stanton, M.; López, K.; Grubin, C.; Graham, D.J., “ ‘Finger Kits’: An Interactive Demonstration of Biomaterials and Engineering for Elementary School Students,” *Chemical Engineering Education*, **42** (3), 125-131 (2008).

SELECTED INVENTION DISCLOSURES, TRADEMARKS, AND PATENTS (From 11 Total: 1 Trademark, 5 provisional patent applications submitted, 5 in preparation).

- “BioTransplantation Using Microbiota Supplements (BioTUMS),” with Nguyen, P.A.H.;†† Cuylear, D.;† Yingling, A.V.;†† McArthur, S.; **Canavan, H.E.**; Ista, L.K., preliminary patent disclosure submitted by STC, March 6, 2018. Application #62/640,226.
- “SIDEKICK: An Adaptable, Modular System and Apparatus for Personal Wheelchair Accessories,” with Martin, T.;†† Nguyen, P.A.H.;†† Matheson, B.;†† Cuylear, D.;† Ista, L.K.; **Canavan, H.E.**; invention disclosure submitted by STC, December 4, 2017. Application #62/657,709
- “Error-Reducing Sample Collection System and Apparatus,” with Simms-Small, W.; Nguyen, P.A.H.;†† **Canavan, H.E.**, preliminary patent submitted by UNM STC, September 11, 2017. Application #62/553,209

SELECTED FUNDING (From 39 proposals: 4 in preparation; 3 submitted, 1 pending, 11 current, 20 previous; 16 as PI; 9 as coPI/coD, 15 as Mentor/Faculty Lead. Total prior + current: \$7.9M).

Funding Agency	Title	Proposal Specifications	# Students Supported/Year
UNM Clinical & Translational Science Center (CTSC)	Innovative Hydrogels for Colonoscopy Preparation PI: Salas; coPI: Canavan* <i>Optimization of a new method for the delivery of medication based on stimulus-responsive hydrogels. Provides funding for materials & supplies, instrumentation costs, and travel.</i>	\$25,000 2018 coPI*	N/A
UNM Clinical & Translational Science Center (CTSC)	3-D Cane for the Visually Impaired PI: Wilhite; coPIs: Canavan*, Hendrix, Grow (New Mexico Tech), Nguyen, Mitchell, Denny <i>Design and fabrication of a haptic-based feedback design capable of providing real-time, 3D sensation for blind and visually-impaired persons. Provides funding for materials & supplies, instrumentation costs, and travel.</i>	\$10,000 2018 coPI*	N/A
Women in STEM (WIS) – NSF ADVANCE @ UNM	From Theoretical to Translational: A Novel, Stimulus-Responsive Tunable Hydrogel System and Testing Platform for Oral Drug Delivery <i>Design and fabrication of a new method for the delivery of medication based on stimulus-responsive hydrogels. Provides funding for materials & supplies, instrumentation costs, and travel.</i>	\$10,000 2018 PI	N/A
National Institutes of Health (NIH) Training and Workforce Development (TWD)	UNM MARC U*STAR PI: Tina Takacs-Vesbach; coPI: Heather Canavan <i>Supports 5 new undergraduates per year for two years (junior and senior year) to perform research in biomedically-relevant science or engineering labs, as well as 2 graduate students and 0.25 FTE of Program Coordinator and 1.5 months' summer salary for Takacs-Vesbach and Canavan. Provides research support, travel to conferences, and mentoring.</i>	\$1,597,765 2017-2022 coPI/CoD	To HEC: 1 G, 2 UG Total: 2 G, 10 UG

*At present, faculty outside of UNM School of Medicine are not eligible to be PIs of CTSC funding, thus Canavan is listed as coPI, with an SOM collaborator serving as figurehead PI.

SYNERGISTIC ACTIVITIES

Senator, UNM Faculty Senate	2019-present
Faculty Advisor, UNM Student Chapter of the Biomedical Engineering Society	2005-present
Member, CBE Undergraduate Student Curriculum Development Committee	2005-present
Director, BME Graduate Program	2014-2016
Co-Director/co-PI, NIH Maximizing Access to Research Careers (MARC) Program	2017-present
Lead Mentor, NSF S-STEM Bioengineering Learning Community	2010-present

Panel Member, NIH Training & Workforce Development Proposal Review Committee 2017-present
 Member, International AVS Professional Leadership Committee (PLC) 2012-present

TEACHING

CURRENT STUDENTS (Of 64 students and postdoctoral fellows since 2005; 56% female; 42% Hispanic, 6% Native American, 14% Asian American, 8% African American, 30% White; 3 students are US Armed Forces Veterans; 3 students have disabilities)

<i>Current Graduate Students</i>			
Group Member	Student Status	Supported By	Degree Status
Mr. Zachary Brounstein	Graduate	LANL	PhD, ChE, exp 2023
Mr. Tye Martin	Graduate	NSF GRFP <i>Co-advised w/ Prof. Eva Chi</i>	PhD, BME, exp 2018
Mr. Benjamin Matheson	Graduate	NIH MARC OGS Excellence	PhD, BME, exp 2020
Ms. Lorraine Mottishaw	Graduate	NIH CTSC <i>Co-advised w/ Prof. Christina Salas</i>	MS, BME, exp 2020
Ms. Phuong Nguyen	Graduate	Gates Foundation, UNM Excellence	PhD, BME, exp 2019
Petty Officer (E4) Johnny Yarmey	Graduate	GI Bill	PhD, BME, exp 2022
<i>Undergraduate Students</i>			
Mr. Darnell Cuylear	Undergraduate	NIH MARC	BS, Biology, exp 2019
Ms. Laura McKenney	Undergraduate	Research for Credit	BS, ChE, exp 2020
Ms. Veronica Mitchell	Undergraduate	Volunteer experience	BS, ChE, exp 2023
Mr. Gabriel Ruja	Undergraduate	Research for Honors Thesis Credit	BS, Biochemistry, exp 2020
Mr. Diego Trujillo	Undergraduate	NIH MARC	BS, Biology, exp 2020