Charlene B. Van Buiten, Ph.D.
Postdoctoral Research Fellow
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PRESENT APPOINTMENT

2017-present **NIH Postdoctoral Fellow**, Department of Plant Biology
Rutgers, The State University of New Jersey, New Brunswick, NJ

EDUCATION

2017 **Ph.D., Food Science**
Pennsylvania State University, University Park, PA
Dissertation: *Physicochemical modification of gliadin by dietary polyphenols and the potential implications for celiac disease*.
Ryan J. Elias, advisor.

2012 **B.S., Nutritional Sciences**
University of Connecticut, Storrs, CT
Minors: Food Science, Biological Sciences

RESEARCH EXPERIENCE

2017-present **Postdoctoral Research**
T32 Ruth L. Kirschstein National Research Service Award
Rutgers, The State University of New Jersey (Ilya Raskin)
Department of Plant Biology
Elucidating of the pre-absorptive functionality of dietary polyphenols within the context of chronic inflammatory diseases; investigating the influence of gastrointestinal redox environment modification on intestinal health.

2012-2017 **Doctoral Research**
USDA National Institute of Food and Agriculture Predoctoral Fellowship
Pennsylvania State University (Ryan J. Elias)
Department of Food Science
Developed a novel approach to preventing celiac disease symptoms *in vitro* using tea polyphenols as a natural sequestrant of gluten protein; characterized protein-polyphenol interactions and using a variety of biophysical techniques including nuclear magnetic resonance, isothermal titration calorimetry, dynamic light scattering and circular dichroism.

2009-2012 **Undergraduate Research**
University of Connecticut (Richard Mancini)
Department of Animal Science
Explored the effects of reverse electron transport on metmyoglobin reduction and assisted with packaging experiments focused on factors affecting chemical stability of beef during storage.

TEACHING EXPERIENCE

Fall 2016 **Sole Instructor of Record– Science & Technology of Plant Foods**
Pennsylvania State University, Department of Food Science
Led lectures and weekly labs focused on the physical, chemical and microbial changes that plant foods undergo from the time of harvest to human consumption. Developed course material for molecular biology of plants and sustainability of plant foods; developed capstone product development project.

Guest Lecturer – Food Toxins
Pennsylvania State University, Department of Food Science
Topic: Celiac disease.

Spring 2015, 2016 **Guest Lecturer – Physiology of Nutrition**
Pennsylvania State University, Department of Food Science
Topic: Effect of processing on nutrition and bioactivity of plant foods.

Fall 2015 **Sole Instructor of Record – Communication of Scientific Research**
Pennsylvania State University, Department of Food Science
Led discussion-based course focused on techniques for sharing scientific data with a variety of audiences. Developed activities for students to practice grant writing, poster presentations and oral presentations.

Co-Instructor – Science & Technology of Plant Foods
Pennsylvania State University, Department of Food Science
Developed and presented new lecture units for bread production and plant protein functionality. Directed processing lab activities and designed grading rubrics for teaching assistants to use for lab reports.

Spring 2015 **Teaching Assistant – Food Systems in Italy**
Pennsylvania State University, Department of Food Science
Provided instructional support for two-week tour of food production facilities in northern Italy.

Fall 2013, 2014 **Teaching Assistant – Science & Technology of Plant Foods**
Pennsylvania State University, Department of Food Science
Provided instructional support during processing lab activities and graded lab reports.

Spring 2012 **Teaching Assistant – The Science of Food**
University of Connecticut, Department of Animal Science
Held weekly office hours and graded written material.

STUDENT MENTORSHIP

2018	Research Mentor, Independent Study in Biochemistry
2018	Guest Speaker and Mentor, Young Women in Bio
2015, 2016	Summer Research Mentor, Upward Bound Summer STEM Academy
2015-2016	Graduate Research Mentor, Independent Study in Food Chemistry

AUTHORED RESEARCH GRANTS

Completed

2016-2018 USDA National Institute of Food and Agriculture Predoctoral Fellowship
Role: PI Total Award: $70,874

2015-2016 Pennsylvania Wine Marketing & Research Board – Research, Marketing and Education Grant
Role: Co-PI Total Award: $12,963

2014-2015 Pennsylvania State University College of Agricultural Sciences Graduate Student Competitive Grant
Role: Lead Author Total Award: $2,000

2011 University of Connecticut Summer Undergraduate Research Fund
Role: Lead Author Total Award: $3,000

Pending L'Oreal USA for Women in Science Fellowship
Role: PI Requested: $33,910

PUBLICATIONS

Van Buiten, C. B.; Lambert, J. D.; Elias, R. J. Green tea polyphenols mitigate gliadin-mediated inflammation and permeability in vitro. Mol. Nutr. Food Res. **2018**, 62. 1700879. DOI: 10.1002/mnfr.201700879

Stanley, T. H.; **Van Buiten, C. B.**; Baker, S. A.; Elias, R. J.; Anantheswaran, R. C.; Lambert, J. D. Impact of roasting on the flavan-3-ol composition, aroma chemistry and in vitro pancreatic lipase inhibitory activity of cocoa beans. Food Chem. **2018**, 255, 414 – 420.

Belskie, K. M.; **Van Buiten, C. B.**; Ramanathan, R.; Mancini, R. A. Reverse electron transport effects on NADH formation and metmyoglobin reduction, Meat Sci. **2015**, 105, 89 – 92. DOI: 10.1016/j.meatsci.2015.02.012

Ramanathan, R.; Mancini, R. A.; Dady, G. A.; **Van Buiten, C. B.** Effects of succinate and pH on cooked beef color. Meat Sci. **2013**, 93 (4), 888 – 892. DOI: 10.1016/j.meatsci.2012.12.007

Ramanathan, R.; Mancini, R. A.; **Van Buiten, C. B.**; Suman, S. P.; Beach, C. M. Effects of pyruvate on lipid oxidation and ground beef color. J Food Sci. **2012**, 77 (8), C886 – C892. DOI: 10.1111/j.1750-3841.2012.02814.x

Submitted for Review

Van Buiten, C. B.; Yennawar, N.; Pacheco, C. N.; Hatzakis, E.; Elias, R. J. Structural modification of α_2-gliadin (57-89) upon interaction with (-)-epigallocatechin-3-gallate. **2018**.

In Preparation

Van Buiten, C. B.; Lambert, J. D.; Elias, R. J. Novel dietary therapies for celiac disease. **2018**.

Van Buiten, C. B.; Smith, J. C.; Elias, R. J.; Lambert, J. D. Flavanols vs. Flavor: An Interactive Curriculum for Developing a High-Flavanol Chocolate Bar. **2018**.

CONFERENCE PRESENTATIONS

Van Buiten, C. B.; Smith, J. C.; Elias, R. J.; Lambert, J. D. (**2017**). "Flavanols vs. Flavor: Fostering an Interest in Food Science with Chocolate Bar Product Development," Institute of Food Technologists 2017 National Meeting. Las Vegas, NV.

Van Buiten, C. B.; Lambert, J. D.; Sae-tan, S.; Elias, R. J. (**2017**). "Inhibition of Gliadin Digestion by Green Tea Polyphenols and the Potential Implications for Celiac Disease," Experimental Biology 2017. Chicago, IL.

Van Buiten, C. B. (**2016**). "Physicochemical consequences of interactions between immunodominant gluten peptide α_2-gliadin (57-89) and major green tea polyphenol (–)-epigallocatechin-3-gallate," 2016 USDA NIFA Fellows Program Project Directors' Meeting, Washington, D.C.

Van Buiten, C. B. (**2016**). "Physicochemical modification of an immunodominant gluten peptide and the potential implications for celiac disease," Withycombe-Charalambous Graduate Student Awards Symposium at the 251st American Chemical Society National Meeting, San Diego, CA.

Van Buiten, C. B.; Pacheco, C. N.; Hatzakis, E.; Yennawar, N.; Elias, R. J. (**2016**). "Structural modification of an immunodominant gluten peptide upon interaction with (-)-epigallocatechin-3-gallate," Advances in Food Peptide & Food Protein Research: Nutrition, Functionality & Food Safety session and Sci-Mix, 251st American Chemical Society National Meeting, San Diego, CA

Van Buiten, C. B. & Elias, R. J. (**2016**). "Polymer-based removal of foxy aromas," Pennsylvania Wine Marketing & Research Board Research Summit, University Park, PA.

Van Buiten, C.B.; Pacheco, C. N.; Hatzakis, E.; Yennawar, N.; Elias, R. J. (**2016**). "Structural modification of an immunodominant gluten peptide upon interaction with (-)-epigallocatechin-3-gallate," 2016 Gamma Sigma Delta Research Symposium, University Park, PA.

Van Buiten C. B.; Pacheco, C. N.; Hatzakis, E.; Elias, R.J. (**2015**) "Influence of molecular structure on interactions of dietary polyphenols and an immunodominant gluten peptide", 250th American Chemical Society National Meeting, Boston, MA.

Van Buiten C. B.; Pacheco, C. N.; Hatzakis, E.; Elias, R.J. (**2015**) "Influence of molecular structure on interactions of dietary polyphenols and an immunodominant gluten peptide," 2015 Food Systems Approach to Gut Health Conference, University Park, PA.

Van Buiten, C. B.; Schmitt, M.; Schneider, V.; Elias, R.J. (**2015**) "Investigation of a novel polymer-based fining technique for the removal of 2-aminoacetophenone from *Vitis vinifera* wines," 2015 American Society for Enology and Viticulture National Conference, Portland, OR.

Van Buiten, C. B.; Primrose, R. J.; Elias, R. J. (**2014**). "Effects of Pre- and Post-Fermentation Fining with Polyvinylpolypyrrolidone on the Aromatic Profile of *Moscatel* Wine," 2014 American Society of Enology and Viticulture National Conference, Austin, TX.

Van Buiten, C. B.; Ramanathan, R., Mancini, R. A. (**2012**). "Effects of reverse electron transport on NADH formation and enzymatic metmyoglobin reduction*,"* 2012 Frontiers in Undergraduate Research, University of Connecticut, Storrs, CT.

HONORS AND AWARDS

Pennsylvania State University

2016	Robert D. and Jeanne L. McCarthy Graduate Teaching Award
	Edith and William B. Rosskam Memorial Scholarship
2015	Harold F. Martin Graduate Assistant Outstanding Teaching Award
	Pennsylvania Commonwealth Education Abroad Scholarship
2014, '15	William Rosskam Memorial Scholarship
2014	Frank S. and Nina Cobb Grant-in-Aid Award
2013, 2015	Robert D. and Jeanne L. McCarthy Graduate Teaching Award

Institute of Food Technologists

2016	First Place, Nutritious Foods for Kids Product Development Contest
2010, '11, '12	IFT Student Scholarship, Connecticut "Nutmeg" Chapter

University of Connecticut

2011	Jarvis Products Corporation Scholarship
	Cornelius and Mary Jane York Scholarship
2010, 2011	Mary M. and Katherine E. Connelly Scholarship
2010	Kinsman Family International Agriculture Award
	Universitas 21 Global Citizenship Award
2009	Henry and Ebba Hansen Leadership Award

National FFA Association

2009	National FFA Organization American Degree

PROFESSIONAL DEVELOPMENT

Rutgers University

2018	Fundamentals of Designing and Teaching Online Courses
	Universal Design and Accessibility in Online Education
2017	*Nature* Masterclass in Scientific Writing & Publishing

Big 10 Academic Alliance – National Research Mentoring Network

2018	Postdoc Mentor Training Workshop
	Professional Development and Grantwriting Conference

Institute of Food Technologists

2016	IFT Food Communicators Group
	Disney IFT Student Association Product Development Team
2015	LEAD 360 Workshop Participant

Pennsylvania State University

2015	Schreyer Institute of Teaching Excellence – Course in College Teaching
	Certificate Program

University of Connecticut

2008-2012	Connecticut FFA Food Science & Technology Career Development Event Coordinator
2009	PepsiCo Global Research & Development Students Day Participant

PROFESSIONAL SERVICE

2018 **Volunteer, Institute for Food Technologists**
"Feeding Tomorrow" Travel Scholarship Judge

2017-present **Expert Referee**
Journals: Obesity; Journal of the Science of Food and Agriculture; Agriculture; Nutrients

ACADEMIC SERVICE

Rutgers University
2018-present President, Postdoctoral Association

Pennsylvania State University
2014-2017 Graduate Student Representative
2016 Life Sciences Symposium Collaborative Activity Chair

University of Connecticut
2011-2012 Research Peer Advisor, Office of Undergraduate Research

PROFESSIONAL MEMBERSHIP

Institute of Food Technologists
American Society of Nutrition
American Chemical Society
Gamma Sigma Delta Honor Society of Agriculture
American Society of Enology and Viticulture

REFERENCES

Ilya Raskin, Ph.D., Distinguished Professor
Department of Plant Biology
Rutgers, The State University of New Jersey
New Brunswick, NJ 08901
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Ryan J. Elias, Ph.D., Associate Professor
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