

LOAN Thi Thanh CAO

291/12 Khu dân cư 19/8.

Đông Hòa, Dĩ An, Bình Dương

08-123-02430

loan.caothithanh@hcmuaf.edu.vn

EDUCATION

Dual Ph.D. in Food Science and Environmental Toxicology 2012 – Dec 2018

Michigan State University

Dissertation: Arsenic and other heavy metals: concentrations in apple juices, distribution in orchard soils and plant tissues, and effects on human cells.

M.Sc. in Food Science 2010 - 2012

Michigan State University

Thesis: Influence of apple pomace and its fraction on intestinal tumor the development in APC Min/ + mice.

B.Sc. in Biotechnology 2003 - 2007

Nong Lam University, Vietnam.

Thesis: Analysis the alkaloid composition in *Catharanthus roseus*.

EXPERIENCE

Faculty of Biological Sciences, Nong Lam University, Vietnam Feb 2020- present

Instructor

- Doing research on food safety, focusing on heavy metals and antibiotics contamination in food.
- Doing research on applying freeze-drying technology to produce healthy snacks.
- Teaching Food Biotechnology, Atomic Absorption spectroscopy, Functional Food Courses.

Faculty of Chemical and Food Technology, HCM City University of

Technology and Education, Vietnam

Sep 2020- present

Instructor

- Teaching Food Quality Management Systems, HACCP, ISO 9001 courses.

Department of Food, Nutrition, and Packaging Sciences, Clemson University, USA:

Research Associate

June 2019- 2020

- Participate in the project on evaluating physical resources and environmental characteristics of produce farms and their effects on food safety and risk management.
- Participate in the project on evaluating factors associated with environmental service

worker cleaning practices in health care settings.

Department of Food Science and Human Nutrition, Michigan State University, USA:

Research Associate

Dec 2018- 2019

- Develop an understanding of US and international food safety requirements for the *Pangasius* (catfish) sector.
- Develop and deliver training content to support compliance with US regulatory requirements by catfish producers and processors.
- Assess impacts of food safety training courses for catfish processors and Michigan cider makers and develop reports summarizing these efforts.

HACCP and PCQI Trainer

2016- 2019

- Lead instructor for the Food Safety Preventive Controls Alliance (2016)
- Work with the broader MSU Extension Food Safety Team to deliver Preventive Controls Qualified Individual (PCQI) and Hazard Analysis and Critical Control Point (HACCP) training for clients in Michigan.
- Participate in the project funded by the United States Department of Agriculture in Vietnam which focus on Food Safety and HACCP Principles.
 - This curriculum was used to deliver an introductory training program on food safety prerequisite programs and the HACCP food safety management system, and key requirements in USDA's Siluriformes food safety regulations that are pertinent for farmers, processors and regulators.
 - Conducting 2-day Advanced Training on Food Safety Principles for Export of Siluriformes to the United States. Cantho, July 2019.

Graduate Research Assistant

2012 – 2018

- Investigate the contamination of heavy metals in apple juice and examine the relationship between soil arsenic concentrations with arsenic levels in apples, other tree tissues.
- Conduct research on patulin (a toxin produced by fungi growing on apples) in apples from controlled atmosphere storage and in juices produced from these stored apples.
- Assess the aflatoxin contamination in groundnut kernel, groundnut flour and peanut butter samples in Malawi.
- Participate in the project funded by the World Trade Organization in Vietnam and Thailand, which focuses on developing food and agriculture sector trade capacity.
 - Oversaw the technical translation of a food safety curriculum from English to Vietnamese. This translated curriculum was used to deliver a blended learning (both online and face-to-face instruction) food safety course in Hanoi, Vietnam in the summer of 2013.
 - The Vietnamese materials will continue to be used in future training programs in Vietnam.

Graduate Research Assistant

2010 – 2012

- Investigate the effects of waste stream product (apple pomace) from industry to lower the risk of colon cancer.
- Conduct research on APC Min/+ mice – a model of colon cancer - to determine the effects of

apple pomace, a major waste product of apple juice processing, and its fractions on tumor development.

Department of Biotechnology, Nong Lam University, Vietnam:

2008 – 2010

Instructor

- Help to design, teach and create syllabus and course materials for the department Sophomore and Senior level courses: Introduction to Food Chemistry, Analytical Chemistry Lab
- Independently led weekly lab sessions covering topics such as buffers, titration, proximate analysis, electrophoresis, PCR.

Atomic Absorption Spectroscopy Lab Manager

- Mentor students doing their research and conduct experiments that evaluate the content of heavy metals in soil, fruit, and vegetables.

TEACHING AND MENTORING

Michigan State University

Future Academic Scholars in Teaching (FAST), Graduate Fellowship

2017- 2018

- Conduct a Teaching as Research project: “Effects of Implementing Flipped Classroom Elements and In-class Discussion on Student Performance”.
- Gain familiarity with materials on teaching and assessment techniques.
- Improve teaching abilities and enhance knowledge by conducting an IRB approved experiment to increase student learning in Food Science major course - Unit Operations.

Graduate Teaching Assistant

2014 – 2015

- Teaching responsibilities have included courses on: Food Processing: Unit Operations (55-100 junior and senior/graduate students, majors and non-majors), Food and Nutrition Laboratory (lab instructor - 90 - 100 undergraduate and graduate students).
- Prepare all the lab materials and teach the students principles and application of analytical techniques such as buffers, titration, proximate analysis (carbohydrates, lipids, proteins, minerals, ash, etc.), gas chromatography, mass spectrometry, protein analysis, electrophoresis, food allergen detection, GMO detection using PCR, and oral glucose tolerance tests.
- Help to evaluate student’s learning outcomes initiative by conforming to current departmental standards.
- Incorporate field trips e.g. Dairy Store, Meat Laboratory to help students better understand materials being taught in lecture.
- Helped to improve laboratory protocols, create examinations, and host office hours to answer student queries

Mentored Laboratory Research Training

2010- 2017

- Train team of undergraduate students on various assays as well as common laboratory procedures and using analytical equipment such as PCR, Microplate Readers, High Performance Liquid Chromatography.
- Train undergraduate students to conduct independent research on effect of polyphenol extracts from apple pomace on tumor development *in vitro*.
- Train undergraduate students on culturing human cell lines (Caco2, HT29, HTC116) for cancer research.
- Guide undergraduate students to prepare and submit manuscripts for publication and

conference presentation.

ACADEMIC AND PROFESSIONAL HONORS

First place in the 3-Minute Thesis Competition at the International Association for Food Protection annual meeting in Salt Lake City, Utah	2018
J. Robert Brunner Fund for Food Science and Human Nutrition Research , Department of Food Science and Human Nutrition, Michigan State University.	2018
Sara Lee Endowment Fund for Food Safety in Food Science and Human Scholarships , Department of Food Science and Human Nutrition, Michigan State University.	2016, 2017, 2018
MSU College of Agriculture and Natural Resources Summer Fellowship.	2016
Gerber Endowment Fund in Pediatric Nutrition and Food Science Scholarships , Department of Food Science and Human Nutrition, Michigan State University.	2015
Stiver Endowed Fellowship , Department of Food Science and Human Nutrition, Michigan State University.	2013
LeAnn B. Goodwin Graduate Research Fellowship , Department of Food Science and Human Nutrition, Michigan State University.	2012
Vietnam Education Foundation Fellowship , Vietnam	2012
Stiver Endowed Fellowship , Department of Food Science and Human Nutrition, Michigan State University.	2011
Vietnam International Education Development Fellowship , Vietnam.	2010

PRESENTATIONS

Annual Meeting of International Association for Food Protection, Salt Lake City, Utah “Relationship of Metal Concentrations in Soil and That in Fruit and Leaves of Apple Trees at Selected Orchards in Michigan.”	July 10, 2018
Future Academic Scholars in Teaching Fellowship Program 12th Annual Symposium, East Lansing, Michigan “Effects of Implementing Flipped Classroom Elements and In-class Discussion on Student Performance”.	May 3, 2018
Center for the Integration of Research, Teaching and Learning All-Network Teaching-as-Research Presentations “Effects of active learning on student’s performance in Food Processing class.”	April 18, 2018

Annual Meeting of International Association for Food Protection, July 11, 2017
Tampa, Florida "Assessment of selected metal concentrations in Shelf-stable Commercial Apples Juices and Fresh Apple Ciders in Michigan."

Annual Meeting of International Association for Food Protection, Aug 1, 2016
St. Louis, Missouri "Arsenic and Lead Concentrations in Shelf-stable Commercial Apples Juices and Fresh Apple Ciders in Michigan"

Center for Research on Ingredients Safety Research Colloquium, Oct 5, 2016
Michigan State University, East Lansing, MI "Heavy metals Concentrations in Shelf-stable Commercial Apples Juices and Fresh Apple Ciders in Michigan."

Experimental Biology Conference, Boston April 21, 2013
"Influence of Apple Pomace and its fractions on intestinal tumor development in APC Min/+ mice."

PROFESSIONAL AFFILIATIONS

- Viet Agriculture Global Vice President** 2017- 2018
- Organize annual meeting and invite speakers on different fields cover food safety, farming, post-harvest technology, plant pathology, soil science
 - Create a global network of Vietnamese agricultural experts and connect them with other scientists in US., Japan, Germany, Australia, etc.
- International Association for Food Protection member** 2016-2018
Conference Section Monitor
- Institute of Food Technologist member** 2012-2017
- Vietnamese Association of Students and Scholars Board of Directors** 2010-2014
Michigan State University, USA

MANUSCRIPTS

Loan Thi Thanh Cao, Leslie D. Bourquin. Relationship of Arsenic and Lead in Soil and that in Fruit and Leaves of Apple Trees at Selected Orchards in Michigan. *Journal of Food Protection*, Vol. 83, No. 6, 2020, Pages 935–942

Dilhani Nisansala Jayawardhana , **Loan Thi Thanh Cao,** Thomas A. Yeargin , Kristen E. Gibson and Angela M. Fraser. The Relationship between Environmental Characteristics and Risk Management Practices on Produce Farms: A Systematic Literature Review. *Agriculture* 2020, 10(12), 577; <https://doi.org/10.3390/agriculture10120577>

Loan Thi Thanh Cao, Jeffrey Swada. Effects of Implementing Flipped Classroom Elements and In-class Discussion on Student Performance. Journal of Food Science Education. 2020; 1-9.
<https://doi.org/10.1111/1541-4329.12211>

Supun Chathuranga Nabadawa Hewage, **Loan Thi Thanh Cao**, Rachael M Jones, Angela M Fraser. Factors associated with environmental service worker cleaning practices in health care settings: A systematic review of the literature. Am J Infect Control. 2021 Jul; 49(7):919-927.
DOI: [10.1016/j.ajic.2021.01.001](https://doi.org/10.1016/j.ajic.2021.01.001)

Loan Thi Thanh Cao, Leslie D. Bourquin. Assessment of Selected Metal Concentrations In Shelf-Stable Commercial Apple Juices and Fresh Apple Ciders in Michigan. (in preparation)

ADDITIONAL ACTIVITIES

International Food Technology (IFT), Developing Solutions for Developing Countries competition, 2012 – 2013.

International Food Technology (IFT), Product Development Team, 2012.

90th Collegiate Dairy Products Evaluation Contest, MSU Dairy Products Evaluation team, 2012.

RESEARCH SUPPORT

2013 **Michigan Apple Committee**

The aim of the project was to assess selected metal concentrations in shelf-stable commercial apples juices and fresh apple ciders in Michigan.

2010 **Michigan Apple Committee**

The aim of the project was to study the influence of apple pomace and its fraction on the intestinal tumor development in APC Min/+ mice.

