

## Career Objective

Phytochemist with 4+ years of experience using UHPLC and GC/MS to analyze untargeted and targeted metabolomic changes in plants under the effect of methyl jasmonate. Possess excellent presentation and communication skill in academic and to general public.

## Experience

### Graduate Research Assistant

August 2015 – Present

*Vegetable Phytochemistry Lab, West Virginia University Morgantown, WV*

- Profiling of primary metabolite change of Brassica species under methyl jasmonate (MeJA) treatment using gas chromatography coupled with mass spectrometry (GC-MS)
- Measuring content of glucosinolate from various brassica plants using ultra high pressure liquid chromatography (UHPLC)
- Measuring the expression of glucosinolate-related and environmental change gene under MeJA treatment by qRT-PCR
- Metabolites identification using LC-MS/MS
- Sensory evaluation of nutrition-enhanced broccoli
- Evaluating the effect of epicuticular wax on Salomonella attachment
- Quantification of plant epicuticular wax using GC-MS.

### Teaching assistant

August – December 2015 and 2016

*West Virginia University*

*Morgantown, WV*

- PLSC206 (Principles of Plant Science) in Fall semester.
- CHEM112 (Survey of Chemistry)

### Graduate Research Assistant

January 2012 – December 2013

*Vegetable/Fruit Genetic Lab, North Caroline State University Raleigh, NC*

Determination and quantification of phenolic compound in broccoli samples.

- Conduction of Quantitative Trait Loci (QTL) map associated with flavonoid and hydroxycinnamic acid in broccoli samples.

## Education

*Doctoral Degree in Plant and Soil Sciences, West Virginia University Morgantown, WV Anticipated 2019*

*Master of Science in Horticultural Science. North Carolina State University Raleigh, NC July 2015*

*Bachelor of Science in Horticultural and Landscape Architecture, National Taiwan University Taiwan*

## Laboratory Skills

### Scanning electronic microscope (SEM)

Enumeration and cultivation of bacteria (Salmonella)

### Quantification of phytochemicals

Glucosinolate /carotenoid/vitamin E and K/phenolics

High performance liquid chromatography with tandem mass (LC-MS/MS)

Ultra High Performance liquid chromatography (UHPLC)

### Inductively coupled plasma (ICP)

Gas chromatography–mass spectrometry

Reverse transcription polymerase chain reaction (RT-PCR)

### Statistical software

SAS, JMP, Basic R

### QTL region detection

MapQTL® software

## Selected Publications

1. Demonstration of allelopathy of horseradish root extract on lettuce (*Lactuca sativa* L.) seeds  
Simpson TJ, **Chiu YC**, Richards-Babb M, Blythe J, Ku KM  
Biochemistry and Molecular Biology Education journal. In preparation
2. Environmental and Genetic Variation in Essential Mineral Nutrients and Nutritional Value among Brassica Vegetables  
Kim MK, Simpson TJ, **Chiu YC**, Becker TM, Juvik JA, Ku KM  
Journal of Agricultural Science. 2018
3. Targeted Metabolome and Transcriptome Analyses of 'Red Russian' Kale (*Brassicae napus* var. *pabularia*) Following Methyl Jasmonate Treatment and Larval Infestation by the Cabbage Looper (*Trichoplusia ni* Hübner)  
**Chiu YC**, Juvik JA, Ku KM  
International Journal of Molecular Sciences. 2018, 19(4), 1058; doi:10.3390/ijms19041058
4. Glucosinolates, Carotenoids, and Vitamins E and K Variation from Selected Kale and Collard Cultivars.  
Kim MK, **Chiu YC**, Ku KM  
Journal of Food Quality. 2017.
5. Cultivar-Specific Changes in Primary and Secondary Metabolites in Pak Choi (*Brassica Rapa*, Chinensis Group) by Methyl Jasmonate.  
Kim MK, **Chiu YC**, Kim NK, Park HM, Lee CH, Juvik JA, Ku KM.  
International Journal of Molecular Sciences. 2017.
6. Demonstrating the effect of surfactant on water retention of waxy leaf surfaces.  
**Chiu YC**, Jenk MA, Richards-Babb M, Ratcliff BB, Juvik JA, Ku KM.  
Journal of Chemistry Education. 2016

## Fellowship & Awards

1. American Society of Horticultural Science Travel Grant. \$500. ASHS 2017 and 2018
2. Davis College Graduate Student Enhancement Grant. \$1,000. West Virginia University. 2018 April
3. 2<sup>nd</sup> Place of Ph.D. poster presentation in Davis College Graduate Research and Creative Scholarship Day. West Virginia University. 2018 April
4. Davis College Graduate Student Enhancement Grant. \$1,000. West Virginia University. 2017 April
5. Metabolomic Society Travel Award. \$125. 2017 April
6. Davis College Doctoral Student Travel Grant. \$400. West Virginia University. 2017 August

## Certification

### Certificate in University Teaching

2018

Learning pedagogy of higher education teaching and classroom assessment technique