

# KUAN YU CHEONG

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## EDUCATION:

Ph.D in Plant Biology	Rutgers, The State University of New Jersey (September 2016-Present)	Cumulative GPA: 4.0
B.S. double major in Plant Science and Biotechnology	Rutgers, The State University of New Jersey (September 2013-May 2016)	Cumulative GPA: 4.0 <i>summa cum laude</i>

## RESEARCH INTEREST:

- Structural and functional relationship between thylakoid membranes and their embedded protein complexes in unicellular photosynthetic marine algae
- Molecular mechanism of retrograde signaling in the marine diatom *Phaeodactylum tricorutum*

## RESEARCH/TEACHING EXPERIENCES:

- 2016 – Present *Doctoral Research*, Environmental Biophysics and Molecular Ecology, Rutgers University
- Research advisor: Dr. Orly Levitan and Dr. Paul G. Falkowski
  - Study the structural and functional relationship of intact plastid by various advanced microscopy techniques such as cryo electron tomography (CryoET) and Helium-ion microscopy (HIM) in the model diatom *Phaeodactylum tricorutum*
  - Establish CRISPR/Cas9 system to streamline gene editing in the model diatom *Phaeodactylum tricorutum* for effective reverse genetic studies
- 2015 – 2016 *Research Assistant*, Environmental Biophysics and Molecular Ecology, Rutgers University
- Research advisor: Dr. Orly Levitan
  - Facilitated the investigation of retrograde signal transduction processes in the model diatom *Phaeodactylum tricorutum* by knocking-down and -out the candidate genes using RNAi and CRISPR/Cas9 knock-out system
- 2015 – 2016 *G. H. Cook Scholar Research*, Department of Plant Biology, Rutgers University
- Research advisor: Dr. Rong Di
  - Designed and studied the anti-UV mechanisms of cucumber and white lily extracts in *Caenorhabditis elegans*
- 2013 – 2016 *Laboratory/Research Assistant*, Department of Plant Biology, Rutgers University
- Research advisor: Dr. Rong Di
  - Assisted in research to detect microorganisms in contaminated plants by various molecular techniques such as PCR and RT-qPCR
  - Identified the effects of citrus peel polymethoxyflavones in reducing fat deposition in *Caenorhabditis elegans*
  - Evaluated the anti-diabetic mechanisms of quinoa extracts in *Caenorhabditis elegans*
  - Managed the project in genetically-engineered Fusarium Head Blight (FHB) resistance barley cv. Colon
  - Trained newly-joined undergraduate research assistants and summer high-school research apprentices in basic plant tissue culture and molecular techniques
- 2015 *Student Grader of General Biochemistry 403*, Department of Biochemistry, Rutgers University
- Examined and evaluated structural biology lab reports of 200 students

## POSTER PRESENTATIONS:

- Rutgers Microbiology Symposium 2017, Rutgers University:  
Towards Understanding Plastid Structure and Function Relationship in Model Diatom *Phaeodactylum tricorutum*
- Rutgers Center for Lipid Research Symposium: Lipids and Metabolic Diseases, Rutgers University:  
Citrus Peel Polymethoxyflavones Reduce *Caenorhabditis elegans* Fat Deposition

- 11<sup>th</sup> Aresty Undergraduate Research Symposium, Rutgers University:  
The study of Shiga Toxin Cytotoxicity in *Caenorhabditis elegans*

#### **HONORS/AWARDS:**

- 2016 – Present Rutgers School of Environmental and Biological Sciences (SEBS) Transfer Excellence Fellowship
- 2016 – Present Lausten Graduate Assistantship
- 2016 Perdana Scholar Award from Education Malaysia USA and the Embassy of Malaysia
- 2016 Matthew Leydt Society (Top 1-2% of Class of 2016 graduates)
- 2016 Rutgers SEBS Plant Science Academic Achievement Award
- 2016 Rutgers SEBS Biotechnology Academic Achievement Award
- 2014 – 2016 George H. Cook Scholars Program
- 2014 – 2016 Alpha Zeta, a national honorary service professional agricultural fraternity
- 2011 – 2016 Public Service Department of Malaysia Scholarship (0.08% of 18,844 applicants)
- 2014 – 2015 Aresty Research Fellowship

#### **ACTIVITIES/SERVICE:**

- 2014 – 2016 Active Member of Alpha Zeta, Rutgers University Chapter, New Brunswick
  - Volunteered in the maintenance of non-profit Rutgers Garden
  - Served in organizing committee of various community activities held by Rutgers Garden such as Easter Egg Hunt and Halloween event
  - Participated in various fundraising events for Rutgers Garden
- 2015 Youth Empowerment Services (Y.E.S.), Grant Proposal Writer, New Brunswick
  - Developed a \$50,000 grant proposal to secure funding to initiate the community-based Student Arts for Life Transformation (SALT) program
  - Tutored and mentored underserved elementary school students on their school work, time and stress management skills

#### **OTHERS:**

- Language Proficient in oral and written Chinese (Mandarin) and Malay
- Technical Skills PCR, RT-qPCR, Western Blotting, fluorescent microscopy, flow cytometry, Fluorescence Induction and Relaxation (FIRE) quantification, plant tissue culture techniques, *C. elegans* culture maintenance, diatom plastid isolation, freeze-plunging cryoET sample preparation, basic bioinformatics analysis and Python programming