

**Nan Jiang**  
**College of Tropical Agriculture and Human Resilience**  
**Department of Molecular Biosciences and Bioengineering**

FTE Distribution: 40%I; 60%R; 0%E

**Education**

<u>Degree</u>	<u>University</u>	<u>Major</u>
PhD	Ohio University	Molecular and Cellular Biology
BS	Capital Normal University	Biology

**Professional Appointments**

<u>Title</u>	<u>Employer</u>	<u>Dates Employed</u>
Assistant Professor	University of Hawai'i at Manoa	2023-

**Courses Taught**

Course ID and name (credits)

MBBE/BIOL 402	Principles of Biochemistry (4)
MBBE 402L	Principles of Biochemistry Lab (2)

**Publications (reverse chronological order)**

Book Chapters

- Held M, Jiang N\*, Basu D, Showalter A, Faik A. (2015) Plant cell wall polysaccharides: structure and biosynthesis. In *Polysaccharides*. Ramawat KG and Mérillon JM. (eds). Springer, New York, NY. pp. 3-54.
- Faik A, Jiang N\*, Held A. (2014) Xylan biosynthesis in plants, simply complex. In *Plants and Bioenergy. Advances in Plant Biology*. Carpita NC, Buckner MS, and McCann MC. (eds). Springer, New York, NY. 4: 153-181.

Refereed Journal Publications

- Gray J, Chu YH, Abnave A, Gomez F, Lee YS, Percival S, Jiang N\*, Grotewold E. (2024) GRASSIUS 2.0: A gene regulatory information knowledgebase for maize and other grasses. *Curr Plant Biol*, 40: 100396.
- Jiang N\*, Grotewold E. (2024) Flavonoids and derived anthocyanin pigments in plants-structure, distribution, function, and methods for quantification and characterization. *Cold Spring Harb Protoc*, doi: 10.1101/pdb.prot108516.
- Jiang N\*, Gomez L, Grotewold E. (2024) Extraction and quantification of total anthocyanins, determination of anthocyanidin core structures, and characterization of specific anthocyanins from maize. *Cold Spring Harb Protoc*, doi: 10.1101/pdb.prot108577.
- Gomez L, Jiang N\*, Grotewold E. (2024) Extraction and quantification of phenolic compounds in maize. *Cold Spring Harb Protoc*, doi: 10.1101/pdb.prot108576.
- Jiang N\*, Dillon FM, Silva A, Gomez-Cano L, Grotewold E. (2021) Rhamnose in plants – from biosynthesis to diverse functions. *Plant Sci*, 302: 110687.
- Jiang N\*, Gutierrez-Diaz A, Mukundi E, Lee YS, Meyers BC, Otegui MS, Grotewold E. (2020) Synergy between the anthocyanin and RDR6/SGS3/DCL4 siRNA pathways expose hidden features of *Arabidopsis* carbon metabolism. *Nat Commun*, 11: 2456.
- Jiang N\*, Lee YS, Mukundi E, Gomez-Cano F, Rivero L, Grotewold E. (2020) Diversity of genetic

lesions characterizes new *Arabidopsis* flavonoid pigment mutant alleles from T-DNA collections. *Plant Sci*, 291: 110335.

- Silva GFF, Silva EM, Correa JPO, Vicente MH, Jiang N\*, Notini MM, Junior AC, De Jesus FA, Castilho P, Carrera E, López-Díaz I, Grotewold E, Peres LEP, Nogueira FTS. (2019) Tomato floral induction and flower development are orchestrated by the interplay between gibberellin and two unrelated microRNA-controlled modules. *New Phytol*, 221: 1328-1344.
- Cao P, Kim SJ, Xing AQ, Schenck CA, Liu L, Jiang N\*, Wang J, Last RL, Brandizzi F. (2019) Homeostasis of branched-chain amino acids is critical for the activity of TOR signaling in *Arabidopsis*. *eLife*, 8: e50747.
- Yang F, Li W, Jiang N\*, Yu H, Morohashi K, Ouma WZ, Morales-Mantilla DE, Gomez-Cano FA, Mukundi E, Prada-Salcedo LD, Velazquez RA, Valentin J, Mejía-Guerra MK, Gray J, Doseff AI, Grotewold E. (2017) A Maize gene regulatory network for phenolic metabolism. *Mol Plant*, 10: 498-515.
- Casas MI, Falcone-Ferreira ML, Jiang N\*, Mejía-Guerra MK, Rodríguez E, Wilson T, Engelmeier J, Casati P, Grotewold E. (2016) Identification and characterization of maize *salmon silks* genes involved in insecticidal maysin biosynthesis. *Plant Cell*, 28: 1297-1309.
- Jiang N\*, Doseff AI, Grotewold E. (2016) Flavones: From biosynthesis to health benefits. *Plants*, 5: E27.
- Jiang N\*, Wiemels RE, Soya A, Whitley R, Held M, Faik A. (2016) Composition, assembly, and trafficking of a wheat xylan synthase complex. *Plant Physiol*, 170: 1999-2023.
- Zeng W, Jiang N\*, Nadella R, Killen TL, Nadella V, Faik A. (2010) A glucurono(arabino)xylan synthase complex from wheat contains members of the GT43, GT47, and GT75 families and functions cooperatively. *Plant Physiol*, 154: 78-97.

## Graduate Students

<u>Category</u>	<u>Current Number of Students</u>	<u>Number Graduated</u>
<u>(Career)</u>		
Chair of PhD Committees	1	0
Member of Master Committees	1	1
Member of PhD Committees	2	0

## Grant Support

Title of Grant: Investigating the pleiotropic effects of a MYB transcription factor in plant pigment biosynthesis and chloroplast biogenesis

Source of Grant: UROP (Undergraduate Research Opportunities Program)

Total Dollar Value (Your share of the grant value): \$10,000 (\$10,000)

Dates of Grant: Summer 2025

Role: PI

Title of Grant: Deciphering bioactive natural products in endemic Hawaiian crops and herbs - metabolomic and transcriptomic analysis

Source of Grant: CTAHR

Total Dollar Value (Your share of the grant value): \$99,840 (\$99,840)

Dates of Grant: 2024 - 2025

Role: PI

## **Presentations at Conferences**

Title: Flavonoid pathway intermediates unveil novel functions for the UV-B receptor UVR8

Authors (put an asterisk on the presenter): Jiang N\*.

Name of Conference: CTAHR Conference 2025

Location: Honolulu, HI

Date of Presentation: April 10, 2025

Title: Flavonoid pathway intermediates unveil novel functions for the UV-B receptor UVR8

Authors (put an asterisk on the presenter): Jiang N\*, Navarrete TG, Grotewold E.

Name of Conference: American Society of Plant Biologists (ASPB)

Location: Honolulu, HI

Date of Presentation: June 23, 2024

Title: Empowering Hawaii's Future Farmers-Integrating CRISPR, Metabolomic Analysis, and AI in Agricultural Education for Crop Improvement

Authors (put an asterisk on the presenter): Du ZY, Jiang N\*, Roell G.

Name of Conference: CTAHR Conference 2024

Location: Honolulu, HI

Date of Presentation: April 11, 2024

Title: Combinatorial effects of the ACT-like domain and small molecule on the regulatory activity of the maize bHLH transcription factor R1

Authors (put an asterisk on the presenter): Jiang N\*, Lee YS, Morohashi K, Tacderas A, Kuehn S, Grotewold E.

Name of Conference: Annual Meeting of the American Society for Biochemistry and Molecular Biology (ASBMB)

Location: Seattle, WA

Date of Presentation: March 26, 2023

Title: The effect of an ACT-like domain on the regulatory activity of the basic helix-loop-helix (bHLH) transcription factor R1

Authors (put an asterisk on the presenter): Jiang N\*, Lee YS, Morohashi K, Grotewold E.

Name of Conference: 65<sup>th</sup> Annual Maize Genetics Meeting

Location: St. Louis, MO

Date of Presentation: March 17, 2023

Title: Synergy between the anthocyanin and RDR6/SGS3/DCL4 siRNA pathways expose hidden features of *Arabidopsis* carbon metabolism

Authors (put an asterisk on the presenter): Jiang N\*, Gutierrez-Diaz A, Mukundi EM, Lee YS, Meyers BC, Otegui MS, Grotewold E.

Name of Conference: Plant Biotech for Health and Sustainability (PBHS) Symposium 2022

Location: East Lansing, MI

Date of Presentation: May 13, 2022

Title: Synergy between the anthocyanin and RDR6/SGS3/DCL4 siRNA pathways expose hidden features of *Arabidopsis* carbon metabolism

Authors (put an asterisk on the presenter): Jiang N\*, Gutierrez-Diaz A, Mukundi EM, Lee YS, Meyers BC, Otegui MS, Grotewold E.

Name of Conference: 3<sup>rd</sup> International Conference on Cell & Experimental Biology (CEB-2022)

Location: Newton, MA

Date of Presentation: April 19, 2022

Title: The effect of an ACT-like domain on the regulatory activity of the basic helix-loop-helix (bHLH) transcription factor R1

Authors (put an asterisk on the presenter): Jiang N\*, Grotewold E.

Name of Conference: 63<sup>th</sup> Annual Maize Genetics Meeting

Location: Virtually

Date of Presentation: March 8-12, 2021

Title: The interaction between defects in the RDR6-SGS3-DCL4 small RNA system and the flavonoid pathway exposes hidden features controlling metabolic fluxes in *Arabidopsis*

Authors (put an asterisk on the presenter): Jiang N\*, Gutierrez-Diaz A, Mukundi EM, Lee YS, Meyers BC, Otegui MS, Grotewold E.

Name of Conference: Plant Biology 2020 Worldwide Summit

Location: Virtually

Date of Presentation: July 27-31, 2020

Title: Modulation of basic helix-loop-helix (bHLH) transcription factor combinatorial control by small molecules

Authors (put an asterisk on the presenter): Jiang N\*, Lee YS, Gomez-Canoa F, Grotewold E.

Name of Conference: 62<sup>th</sup> Annual Maize Genetics Meeting

Location: Virtually

Date of Presentation: June 25-26, 2020

Title: Fine-tuning different transcriptional complexes to regulate anthocyanin pigmentation genes

Authors (put an asterisk on the presenter): Jiang N\*, Lee YS, Gomez-Canoa F, Mukundi EM, Grotewold E.

Name of Conference: Plant Biotech for Health and Sustainability (PBHS) Symposium 2019

Location: East Lansing, MI

Date of Presentation: November 1, 2019

Title: Fine-tuning different transcriptional complexes to regulate anthocyanin pigmentation genes

Authors (put an asterisk on the presenter): Jiang N\*, Lee YS, Gomez-Canoa F, Mukundi EM, Grotewold E.

Name of Conference: ASBMB Symposium on Evolution and Core Processes in Gene Expression

Location: East Lansing, MI

Date of Presentation: May 10, 2019

Title: Fine-tuning different transcriptional complexes to regulate anthocyanin pigmentation genes

Authors (put an asterisk on the presenter): Jiang N\*, Lee YS, Gomez-Canoa F, Mukundi EM, Grotewold E.

Name of Conference: 61<sup>th</sup> Annual Maize Genetics Conference

Location: St. Louis, MO

Date of Presentation: March 15, 2019

Title: Identification and characterization of candidate genes involved in flavonoid biosynthesis and regulation

Authors (put an asterisk on the presenter): Jiang N\*, Abdollahzadeh A, Cruz M, Gómez-Cano LA, Grotewold E.

Name of Conference: Plant Biotech for Health and Sustainability (PBHS) Symposium 2017

Location: East Lansing, MI

Date of Presentation: October 26, 2017

Title: Identification and characterization of candidate genes involved in flavonoid biosynthesis and regulation

Authors (put an asterisk on the presenter): Jiang N\*, Abdollahzadeh A, Cruz M, Gómez-Cano LA, Grotewold E.

Name of Conference: 28<sup>th</sup> International Conference on Arabidopsis Research

Location: St. Louis, MO

Date of Presentation: June 20, 2017

Title: A Maize Gene Regulatory Network for Phenolic Metabolism

Authors (put an asterisk on the presenter): Jiang N\*, Yang F, Li W, Yu H, Morohashi K, Ouma WZ, Morales-Mantilla DE, Gomez-Cano F, Mukundi EM, Prada-Salcedo LD, Velazquez RA, Valentin J, Mejía-Guerra MK, Gray J, Doseff AI, Grotewold E.

Name of Conference: 59<sup>th</sup> Annual Maize Genetics Conference

Location: St. Louis, MO

Date of Presentation: March 10, 2017

Title: Maysin biosynthesis in maize: identification and characterization of genes related to *salmon silks* mutants

Authors (put an asterisk on the presenter): Jiang N\*, Casas MI, Falcone-Ferreira ML, Rodriguez E, Casati P, Grotewold E.

Name of Conference: 58<sup>th</sup> Annual Maize Genetics Conference

Location: Jacksonville, FL

Date of Presentation: March 18, 2016

Title: Characterization of TaXPo1-1: the first xylan synthase complex from bread wheat

Authors (put an asterisk on the presenter): Jiang N\*, Wiemels R, Faik A.

Name of Conference: American Society of Plant Biologists (ASPB)

Location: Minneapolis, MN

Date of Presentation: July 27, 2015

Title: Characterization of glucuronoarabinoxylan synthase complex from bread wheat  
Authors (put an asterisk on the presenter): Jiang N\*, Whitley R, Jyothi P, Held M, Faik A.  
Name of Conference: American Society of Plant Biologists (ASPB) Midwest section meeting  
Location: Columbus, OH  
Date of Presentation: March 22, 2014

Title: Characterization of glucuronoarabinoxylan synthase complex from bread wheat  
Authors (put an asterisk on the presenter): Jiang N\*, Whitley R, Jyothi P, Held M, Faik A.  
Name of Conference: Ohio Plant Biotechnology Consortium (OPBC)  
Location: Columbus, OH  
Date of Presentation: October 5, 2013

Title: Proteomic analysis of a glucuronoarabinoxylan synthase complex from wheat, and *in vitro* reconstitution of the activity  
Authors (put an asterisk on the presenter): Jiang N\*, Whitley R, Jyothi P, Held M, Faik A.  
Name of Conference: American Society of Plant Biologists (ASPB)  
Location: Providence, RI  
Date of Presentation: July 21, 2013

Title: Characterization and topology of a glucuronoarabinoxylan synthase complex from bread wheat  
Authors (put an asterisk on the presenter): Jiang N\*, Whitley R, Jyothi P, Held M, Faik A.  
Name of Conference: Ohio Plant Biotechnology Consortium (OPBC)  
Location: Columbus, OH  
Date of Presentation: October 1, 2012

Title: Characterization and topology of a glucuronoarabinoxylan synthase complex from bread wheat  
Authors (put an asterisk on the presenter): Jiang N\*, Whitley R, Jyothi P, Held M, Faik A.  
Name of Conference: Gordon Conference-Plant Cell Walls  
Location: Waterville, ME  
Date of Presentation: August 5, 2012

Title: Characterization and topology of a glucuronoarabinoxylan synthase complex from bread wheat  
Authors (put an asterisk on the presenter): Jiang N\*, Whitley R, Jyothi P, Held M, Faik A.  
Name of Conference: American Society of Plant Biologists (ASPB)  
Location: Austin, TX  
Date of Presentation: July 22, 2012

Title: Characterization and topology of a glucuronoarabinoxylan synthase complex from bread wheat  
Authors (put an asterisk on the presenter): Jiang N\*, Whitley R, Held M, Faik A.  
Name of Conference: Ohio Plant Biotechnology Consortium (OPBC)  
Location: Columbus, OH  
Date of Presentation: October 8, 2011

Title: Glucurono(arabino)xylan synthase complex from bread wheat: composition, mechanism, product analysis, and functional reconstitution

Authors (put an asterisk on the presenter): Jiang N\*, Zeng W, Faik A.

Name of Conference: Ohio Plant Biotechnology Consortium (OPBC)

Location: Columbus, OH

Date of Presentation: October 3, 2010

Title: Glucurono(arabino)xylan synthase complex from bread wheat: composition, mechanism, product analysis, and functional reconstitution

Authors (put an asterisk on the presenter): Jiang N\*, Zeng W, Faik A.

Name of Conference: American Society of Plant Biologists (ASPB)

Location: Montreal, Canada

Date of Presentation: August 1, 2010

Title: Biochemical and genetic approaches to investigate glucurono(arabino)xylan synthase complex composition in wheat and *Brachypodium distachyon*

Authors (put an asterisk on the presenter): Jiang N\*, Zeng W, Faik A.

Name of Conference: Ohio Plant Biotechnology Consortium (OPBC)

Location: Columbus, OH

Date of Presentation: October 2, 2009

Title: Biochemical and genetic approaches to investigate glucurono(arabino)xylan synthase complex composition in wheat and *Brachypodium distachyon*

Authors (put an asterisk on the presenter): Jiang N\*, Zeng W, Faik A.

Name of Conference: Gordon Conference-Plant Cell Walls

Location: Smithfield, RI

Date of Presentation: August 3, 2009

Title: Biochemical approach to investigate glucurono(arabino)xylan synthase complex composition in wheat

Authors (put an asterisk on the presenter): Jiang N\*, Zeng W, Faik A.

Name of Conference: Ohio Plant Biotechnology Consortium (OPBC)

Location: Columbus, OH

Date of Presentation: October 4, 2008