Dae Kwan Ko

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RESEARCH INTERESTS

I am a plant biologist driven by a passion for addressing critical biological questions at the systems level through a hypothesis-driven approach, harnessing the power of genomics. Just as individuals in society interact, so too do genes and proteins within cells. But what are the functional consequences of these molecular interactions in regulating biological pathways? These interactions, known as “biological networks,” are essential for maintaining cellular homeostasis in all living organisms. My long-term research goal is to unravel these gene networks and apply the insights to advance translational research.

PROFESSIONAL APPOINTMENTS

Assistant Professor - Fixed Term 2022 – Present
MSU-DOE Plant Research Laboratories
Great Lakes Bioenergy Research Center
Department of Plant Biology, Michigan State University, MI, USA.

- Hosted by Dr. Federica Brandizzi
- Research summary: Using single-cell genomics technologies, investigating how genes respond to environmental stresses in model and non-model plant species.

Postdoctoral Research Associate 2017 – 2022
MSU-DOE Plant Research Laboratories
Great Lakes Bioenergy Research Center, Michigan State University, MI, USA.

- Advisor: Dr. Federica Brandizzi
- Research summary: Investigated gene regulatory networks in plant unfolded protein response using multi-omics approaches. Explored cell wall biogenesis and differentiation in bioenergy crops through gene regulatory network modeling and functional characterization. Aimed to provide a systems-level understanding of these processes.

Postdoctoral Research Associate 2016 – 2017
Department of Plant Biology, Michigan State University, MI, USA.

- Advisor: Dr. C. Robin Buell
- Research summary: Identified unintended consequences of genome modification methods in clonally propagated diploid potato, addressing critical concerns related to genome editing and its implications within the context of crop improvement.

EDUCATION

Ph.D. The University of Texas at Austin, TX, USA. 2009 – 2016

- Department of Molecular Biosciences (Major: Plant Biology)
- Advisor: Dr. Z. Jeffrey Chen
- Thesis title: “Clock-Regulatory Networks Contribute to Growth Vigor in Maize Hybrids”
- Research summary: Investigating the molecular link of the circadian clock with maize heterosis using a functional genomics approach covering a broad array of molecular techniques.

M.S. Seoul National University, Seoul, South Korea. 2006 – 2008
- Department of Biological Sciences
- Advisor: Dr. Choo Bong Hong
- Thesis title: “Submergence-Inducible and Circadian Rhythmic Transcriptional Networks in Nicotiana tabacum”
- Research summary: Characterizing clock-regulated transcription factor genes in response to abiotic stress in Nicotiana tabacum.

B.S. Konkuk University, Seoul, South Korea. 2000 – 2006
- Department of Crop Science

PUBLICATIONS

Published in Peer-Reviewed Articles (19 total: 10 first authorships; 9 co-authorships)

1. **Ko DK**, Brandizzi F. (2025) A Network-Enabled Pipeline for Gene Discovery and Validation in Non-Model Plant Species. ***Cell Reports Methods*** *In press*

2. **Ko DK**, Brandizzi F (2024). Dynamics of ER stress-induced gene regulation in plants. ***Nature Reviews Genetics*** 25, 513-525.

3. Choi D, **Ko DK**, Kim DH (2024). Transcriptome analysis revealed that Arabidopsis model plant invokes the activation of heat shock proteins and ER stress response against cesium stress. ***Plant Biotechnology Reports*** 18(3), 385-399.

4. **Ko DK**, Kim JY, Thibault EA, Brandizzi F (2023). A signaling cohort of IRE1 and proteasome system controls cell fate determination in unresolved proteotoxic stress of the plant endoplasmic reticulum. ***Nature Plants*** 9(8), 1333-1346.
    - Featured in Spotlight by Varshney et al., *Trends in Plant Science* 2023 Dec 14:S1360-1385(23)00388-6.
    - Highlight in MSUTODAY (https://rb.gy/7oapjq)
    - Interview video (https://rb.gy/ao6p53)

5. Bhandari DD, **Ko DK**, Kim SJ, Nomura K, He SY, Brandizzi F (2023). Defense against phytopathogens relies on efficient anti-microbial protein secretion mediated by the microtubule-binding protein TGNap1. ***Nature Communications*** 14, 6357.

6. **Ko DK**, Brandizzi F (2022). Transcriptional competition shapes proteotoxic ER stress resolution. ***Nature Plants*** 8(5), 481-490.
    - Highlight in MSU-PRL Bulletin (https://rb.gy/kw41ig)

7. **Ko DK**, Brandizzi F (2022). Advanced genomics identifies growth effectors for proteotoxic ER stress recovery in *Arabidopsis thaliana*. ***Communications Biology*** 5, 16.
    - Highlight in MSU-PRL Bulletin (https://rb.gy/oq2ve2)
    - Interview video (https://rb.gy/0p794v)

8. York LM, Cumming JR, Trusiak A …. **Ko DK** …. Yang WH (2022). Bioenergy Belowground: challenges and opportunities for phenotyping roots and the microbiome for sustainable bioenergy crop production. ***Plant Phenome Journal*** 5: e20028.

9. Plant Cell Atlas Consortium, Ghosh Jha S, Borowsky AT …. **Ko DK** … Rhee SY (2021). Science Forum: Vision, challenges and opportunities for a Plant Cell Atlas. ***eLife*** 10:e66877.

10. Angelos E, **Ko DK**, Zemelis-Durfee S, Brandizzi F (2021). Relevance of the Unfolded Protein Response to Spaceflight-Induced Transcriptional Reprogramming in Arabidopsis. ***Astrobiology*** 1;21(3);367-380.

11. **Ko DK**, Brandizzi F (2021). A temporal hierarchy underpins the transcription factor-DNA interactome of the maize UPR. ***The Plant Journal*** 105(1);254-270.
    - Highlight in MSU-PRL Bulletin (https://rb.gy/m4ypc8)

12. **Ko DK**, Brandizzi F (2020). Network-based approaches for understanding gene regulation and function in plants. ***The Plant Journal*** Oct;104(2):302-317.
    - Featured in the Society for Experimental Biology's Spring Bulletin (https://rb.gy/lhwrhu)

13. Rice S, Fryer E, Ghosh Jha S…The Plant Cell Atlas Consortium (including **Ko DK**) (2020). First plant cell atlas workshop report. ***Plant Direct*** 00:1–10.

14. Pastor-Cantizano N, **Ko DK**, Angelos E, Pu Y, Brandizzi F (2019). Functional diversification of ER stress responses in Arabidopsis. ***Trends in Biochemical Sciences*** 18;45(2):123-136.

15. Nadakuduti SS, Starker CG, **Ko DK**, Jayakody TB, Buell CR, Voytas DF, Douches DS (2019). Evaluation of Methods to Assess in vivo Activity of Engineered Genome-Editing Nucleases in Protoplasts. ***Frontiers in Plant Science*** 8;10:110.

16. **Ko DK**, Nadakuduti SS, Douches DS, Buell CR (2018). Transcriptome profiling of transgenic potato plants provides insights into variability caused by plant transformation. ***PLoS One*** 8;13(11):e0206055.

17. ***Ko DK**, *Rohozinski D, Song Q, Taylor SH, Juenger TE, Harmon FG, *Chen ZJ (2016). Temporal shift of circadian-mediated gene expression and carbon fixation contributes to biomass heterosis in maize hybrids. ***PLoS Genetics*** 28;12(7):e1006197. *These authors contributed equally to this work.

18. Shi X, Zhang C, **Ko DK**, Chen ZJ (2015). Genome-wide dosage-dependent and -independent regulation contributes to gene expression and evolutionary novelty in plant polyploids. ***Molecular Biology and Evolution*** 32(9):2351-66.

19. **Ko DK**, Lee MO, Hahn JS, Kim BG, Hong CB (2009). Submergence-inducible and circadian rhythmic basic helix-loop-helix protein gene in Nicotiana tabacum. ***Journal of Plant Physiology*** 1;166(10):1090-100.

Book Chapters and Editorial.

1. **Ko DK**, Brandizzi F (2023). Multi-omics resources for understanding gene regulation in response to ER stress in plants. In: Kriechbaumer, V. (eds) The Plant Endoplasmic Reticulum. ***Methods in Molecular Biology***, vol 2772. Humana, New York, NY.

2. **Ko DK**[#], Sanchez-Ballesta MT (2023). Editorial: methods, applications, and protocols in plant science: network modeling-guided understanding of gene regulation in plants. ***Frontiers in Plant Science*** 14:1171846. [#]Corresponding author.

3. **Ko DK**, Brandizzi F (2022). Coexpression network construction and visualization from transcriptomes underlying ER stress responses. In: Lois, L.M., Trujillo, M. (eds) Plant Proteostasis. ***Methods in Molecular Biology***, vol 2581. Humana, New York, NY.

In Review/In Revision

1. Adhikari B, Verchot J[#], Brandizzi F, **Ko DK**[#]. Advances in plant UPR: mechanisms, implications, and future directions in viral defense. (invited review paper) *In revision for* ***Journal of Biological Chemistry*** [#]Co-corresponding author.

2. **Ko DK**, Brandizzi F. Decoding abiotic stress resilience in sorghum: A transcriptomic framework for climate-ready Crops. *Under review in* ***Communications Biology****.*

3. Kim JK, **Ko DK**, Brandizzi F. The MAP kinase scaffold MORG1 shapes cell death in unresolved ER stress in Arabidopsis. *In submitted* ***Nature Communications****.*

FUNDING AND FELLOWSHIPS

(Pending) NSF Plant Biotic Interactions

- Project title: *Unveiling Systems-Level Mechanisms of Arabidopsis bZIP Transcription Factors for Resilience to Virus Infection*
- Role: Initially Co-PI (PI: Dr. Jeanmarie Verchot). Due to the NSF's two-month salary support policy for Co-PI/PI roles, I transitioned to key personnel under Dr. Federica Brandizzi (Co-PI in the resubmission). If funded, I will supervise the project and budget and will serve as co-corresponding author on resulting publications.
- Budget: $1,461,109 ($823,150 will go to my portion, if funded)
- Period: 4 years

DOE-JGI Bioenergy Research Center grant (Proposal ID: 509513)

- Project title: *The DNA Binding Landscape of Sorghum TFs in Response to Abiotic Stress*
- Description: Supporting DNA synthesis of 142 TF genes and DNA Affinity Purification and sequencing
- Role: PI
- Award year: 2023

Project GREEEN (Generating Research and Extension to meet Economic and Environmental Needs) **Award**, Michigan State University

- Project title: *Accessing the Impact of Abiotic Stress on Activities of Gene Regulatory DNA Sequences in Sorghum at Single-cell Resolution*
- Role: PI
- Amount: $30,000
- Starting-Ending date: 07/01/2022 – 12/31/2023

DOE-JGI Bioenergy Research Center grant (Proposal ID: 508271)

- Project title: *Transcriptome Analysis Under Abiotic Stress in Sorghum*
- Description: Supporting RNA-seq library construction of 104 samples and next-generation sequencing
- Role: PI
- Award year: 2021

MSU Cloud Computing Fellowship

- Description: Supporting a cloud computing system (Microsoft Azure) for the awardee's research projects and providing hands-on training and participating in public activities)
- Starting-Ending date: 11/01/2020 – 04/30/2021
- Public Announcement: https://rb.gy/q5gpwx

ASPB Travel Award, American Society of Plant Biologists ($575 & discounted registration) 2025
Travel grant, The Plant Resilience Institute, Michigan State University ($1,000) 2020
NSF travel grant for Plant Cell Dynamics VIII 22nd Plant Biology Symposium ($405) 2019
Bennett Memorial Graduate Fellowship, The University of Texas at Austin ($1,000) 2015
Travel award, Graduate School, The University of Texas at Austin ($500) 2014
Summer Research Fellowship, The University of Texas at Austin 2013 – 2014
Pre-emptive Fellowship, The University of Texas at Austin 2009 – 2010

- Full scholarship for selected 1st-year graduate students

HONORS

The 2nd place prize for Best Poster, the 2nd Plant Cell Atlas Symposium 2022
Nomination for Teaching Assistant Award, The University of Texas at Austin 2013
Honor in Great Teaching Assistant, School of Biological Sciences, Seoul National University 2007

LEADERSHIP, SERVICE & PUBLIC OUTREACH

GLBRC Ambassador 2024

- Disseminating GLBRC's research and promoting bioenergy careers to students from diverse backgrounds
- Attended the Society for Advancement of Chicanos/Hispanics & Native Americans in Science (SACNAS) conference in Phoenix, AZ (Oct 31 – Nov 2, 2024)

Seminar Host, MSU and UT-Austin

- Speaker: Dr. Samuel Leiboff (Oregon State University) Oct 2024
- Speaker: Dr. Vladimir Gligorijevic (Flatiron Institute) Dec 2019
- Speaker: Dr. Zachary B. Lippman (Cold Spring Harbor Laboratory) Apr 2012

NASA Open Science Data Repository Workshop

- Invited participant, Washington D.C. Nov 2003

Core Member of the Plant Cell Atlas initiative (https://www.plantcellatlas.org) 2021 – Present
Active Member, NASA GeneLab Working Groups

- Plants Analysis Working Group 2023 – Present
- Multi-omics Analysis Working Group 2023 – Present

Organizer for Crop Engineering Community of Practice in GLBRC 2023 – 2024

- Organized monthly webinars for the GLBRC community
- Invited speakers and moderated discussions

GLBRC Annual Science Meeting Committees

- 2024 Planning Committee 2023 – Present
- 2023 Session Organizing Committee 2022 – 2023
- 2022 Session Organizing Committee 2021 – 2022

DOE-BRC Workshop on AI-ML for Biosystems Design

- Invited participant, Washington D.C. Feb 2020

Public Outreach Events

- Organized Grade-1 Plant Day, MSU, East Lansing, MI Sept 2023
- Participated in Family Day Weekend, UT-Austin, Austin, TX Oct 2012

Panel Reviewer

- JGI panel reviewer: Community Science Program (CSP) Functional Genomics 2024
- DOE panel reviewer: DOE SBIR/STTR 2020

Journal Peer Reviewer

- *Nature Communications, PNAS, Developmental Cell, Science Signaling, New Phytologist, The Plant Journal, Communications Biology, Plant Communications, Frontiers in Plant Sciences (serving as a Review Editor), IEEE/ACM Transactions on Computational Biology and Bioinformatics, Heliyon, Genes, Plants, International Journal of Molecular Sciences, Cells, Agronomy, Data in Brief*

Special Issue Topic Editor

- *Frontiers in Plant Science* (https://rb.gy/gnrbou)

TEACHING EXPERIENCE

***Teaching Assistant**, Department of Molecular Biosciences, UT-Austin*

BIO327 Genomics Spring 2016

- Graduate lecture course (30 students)
- Instructor – Dr. Z. Jeffrey Chen
- Responsibilities: Conducted weekly discussion sessions where I delivered concise 10-minute lecture summaries. Evaluated exams containing diverse question formats, including multiple choice, short answer, and essays. Assisted group presentations. Facilitated office hours by appointment.

BIO395 Genetics Spring 2014

- Upper division lecture course (23 students)
- Instructors – Drs. Jeffrey Gross & Z. Jeffrey Chen
- Responsibilities: Conducted weekly discussion sessions where I delivered concise 10-minute lecture summaries. Evaluated exams containing diverse question formats, including multiple choice, short answer, and essays. Facilitated office hours by appointment.

BIO325 Genetics Fall 2010, Spring/Summer 2011, Spring/Summer/Fall 2012, Spring/Fall 2013

- Sophomore lecture course (121, 83, 56, 77, 52, 109, 49, or 35 students in each semester)
- Instructor (one per semester): Drs. Inder M. Saxena, Sibum Sung, and Beverly Finklea
- Responsibilities: Conducted weekly discussion sessions where I delivered concise 10-minute lecture summaries. Evaluated exams containing diverse question formats, including multiple choice, short answer, and essays. Facilitated office hours by appointment.

BIO205L Laboratory Experiments in Cell and Molecular Biology Spring 2011

- Introductory laboratory course (29 students)
- Instructors – Dr. A. William Allen
- Responsibilities: Conducted weekly lab sessions where I delivered concise 10-minute lecture for specified experiments and demonstrated hands-on experiments. Collaborated with the instructor and undergraduate helpers in designing lab experiments and assessed weekly reports, exams, and term papers.

***Teaching Assistant**, Department of Biological Sciences, Seoul National University*

010.323-003 General Biology Experiment Fall 2007

- Introductory laboratory course (52 students)

- Responsibilities: Conducted weekly lab sessions where I delivered concise 10-minute lecture for specified experiments and demonstrated hands-on experiments. Assessed weekly reports, exams, and term papers.

Guest Lectures

Guest speaker for Gene Network Workshop, Chung-Ang Univ., South Korea. Virtual. Apr 2023
Guest speaker for Coexpression Network Workshop, Chung-Ang Univ., South Korea. Virtual. Oct 2022
Guest speaker for ChIP-seq Workshop, Chung-Ang Univ., South Korea. Virtual. Apr 2022
Guest speaker for PLB801 Foundation of Plant Biology (graduate course), MSU. Virtual. Oct 2020

- Instructor: Dr. Jiming Jiang

Guest speaker for BIO325 Genetics, UT-Austin Oct 2012

- Instructor: Dr. Inder M. Saxena

MENTORING

Ashlyn Savoie, GLBRC Research Assistant. 2024 – present
Zachary Smith, GLBRC Research Assistant. 2023 – 2024
Joshua Deradoorian, GLBRC Research Assistant. 2022 – 2023
Chloe Hollidays, MSU Undergraduate Student. 2022 – 2023
Xiaohe (Sherry) Sun, GLBRC Summer Undergraduate Research Program May – Jul 2022

- Online Blog describing her experiences with my mentorship (https://rb.gy/erul98)

Rita E. Barr, MSU Undergraduate Student. 2021 – 2022
Sara Knapp, GLBRC Research Assistant. 2020 – 2021
Elizabeth Selby, MSU Research Assistant. 2019 – 2020
Rebecca Selby, MSU Research Assistant. 2018 – 2019
Michael Cadell, UT-Austin Undergraduate Student. 2012 – 2014
Krystal Chi-Shuan Chang, UT-Austin REU. May – Jun 2014

SEMINAR ORAL PRESENTATIONS

Department of New Biology, Daegu Gyeongbuk Institute of Science and Technology (DGIST), Daegu, South Korea. Virtual. Dec 2024

- Title: “Decoding Plant UPR Gene Regulation: Insights from Genetics, Genomics, and Network Analysis”

Center for Sorghum Improvement 2024 Seminar Series. Virtual. Mar 2024

- Title: “Network-Enhanced Gene Discovery Pipeline (NEEDLE) for Non-Model Plant Species”

NASA GeneLab Plants AWG meeting. Virtual. Nov 2023

- Title: “Network-Enhanced Gene Discovery Pipeline (NEEDLE) for Non-Model Plant Species”

Biological Research Information Center Webinar Series. Virtual. Oct 2023

- Title: “Unleashing Cellular Destiny: IRE1-Proteasome Signaling Governs Plant ER Proteotoxic Stress”

Department of Horticulture, Chung-Ang University, South Korea. Virtual. Jul 2021

- Title: “Network-Enabled Understanding of Gene Regulation in Response to Abiotic Stress”

Tuesday Noon Seminar, MSU-DOE Plant Research Laboratories, East Lansing, MI. Feb 2020

- Title: “A Temporal Hierarchy Underpins the Transcription Factor-DNA Interactome of the Maize UPR”

Plant Resilience Brown Bag, MSU, East Lansing, MI. Virtual. Dec 2019

- Title: “A Systems-Level Approach to Understand Transcriptional ER Stress Response in Plants”

Department of Horticulture, Chung-Ang University, South Korea. Jul 2019

- Title: “Systems-Level Approach to Understand UPR Gene Regulation in Arabidopsis”

Systems & Synthetic Agrobiotech Center, Gyeongsang National University, South Korea. Jul 2019
- Title: “Systems-Level Approach to Understand UPR Gene Regulation in Arabidopsis”

Tuesday Noon Seminar, MSU-DOE Plant Research Laboratories, East Lansing, MI. Apr 2019
- Title: “Systems-Level Approach to Discover Architecture and Dynamics of ER Stress Gene Networks”

Monsanto Company, Chesterfield, MO Aug 2017
- Title: “Genome Editing Methods in Potato”

Plant Luncheon Seminar Series, The University of Texas at Austin, Austin, TX Mar 2014
- Title: “Early Establishment of Growth Vigor in Maize Hybrids by Circadian Regulators”

INVITED/SELECTED CONFERENCE TALKS

Phytochemical Society of North America (PSNA) Annual Meeting, East Lansing, MI. Jul 2023
- Selected talk
- Title: “Unleashing Cellular Destiny: IRE1-Proteasome Signaling Governs Plant ER Proteotoxic Stress”

Great Lake Bioenergy Research Center (GLBRC) - Annual Science Meeting, Geneva, WI. May 2023
- Invited talk
- Title: “Network-Enabled Gene Discovery Pipeline (NEEDLE) for Bioenergy Research”

American Society of Plant Biologists (ASPB) Midwest Conference, Ames, IA. Apr 2023
- Selected talk
- Title: “A Signaling Cohort of IRE1 and Proteasome System Controls Cell Fate Determination in Unresolved Proteotoxic Stress of the Plant Endoplasmic Reticulum”

Biotechnology and Environmental Technology Symposium, South Korea. Virtual. Dec 2022
- Invited talk
- Title: “Network-Enabled Regulatory Dissection of the Mixed-Linkage Glucan Synthase Genes in Grasses”

2nd International Seminar for the Recent Advances in New Agro Food Research. Virtual. July 2022
- Invited talk
- Title: “Transcriptional Competition Shapes Proteotoxic ER Stress Resolution”

Great Lake Bioenergy Research Center Sustainability Meeting. Virtual. Feb 2022
- Invited talk
- Title: “Network Modeling of Dynamic Transcriptomes Underlying the Development of *B. distachyon* and *S. bicolor*”

Plant Cell Dynamics VIII 22nd Plant Biology Symposium, State College, PA. Jun 2019
- Selected talk
- Title: “Gene Networks in the Endoplasmic Reticulum Stress”

CONFERENCE POSTER PRESENTATION

Advances in Genome Biology and Technology Agricultural Meeting, Phoenix, AZ. Apr 2024
- Title: “Unraveling Gene Expression Dynamics in Bioenergy Crops Under Environmental Stress Challenges”

Genomic Science Program Annual Principal Investigator Meeting, Washington D.C. Apr 2023
- Title: “Defining Transcriptomic Dynamics in Sorghum in Multiple Abiotic Stresses”

International Conference on Arabidopsis Research, Virtual. Jun 2022
- Title: “Transcriptional competition shapes proteotoxic ER stress resolution”

Plant Cell Atlas Symposium Dec 2022

- Title: “Network-Enabled Regulatory Dissection of the Mixed-Linkage Glucan Synthase Genes in Grasses”

Joint Genome Institute User Meeting Aug 2022

- Title: “Network-Enabled Dissection of Conserved and Diverged Regulation of the Mixed-Linkage Glucan Synthase Gene in Bioenergy Crops”

Plant Cell Atlas Symposium Dec 2021

- Title: “Understanding Gene Regulatory Networks Underlying Plant ER Stress: Insights from Bulk Cells to Single Cell”

Plant Biology Worldwide Summit, Virtual. July 2021

- Title: “Gene-Regulatory Network-Enabled Identification of Effectors Controlling Organ Growth During Recovery from Endoplasmic Reticulum Stress”

International Conference on Arabidopsis Research, Virtual. Jun 2021

- Title: “Gene-Regulatory Network-Enabled Identification of Effectors Controlling Organ Growth During Recovery from Endoplasmic Reticulum Stress”

EMBO Workshop - International Plant Systems Biology, Virtual. Apr 2021

- Title: “Gene-Regulatory Network-Enabled Identification of Effectors Controlling Organ Growth During Recovery from Endoplasmic Reticulum Stress”

BRC Workshop: AI and Machine Learning for Biosystems Design, Washington D.C. Feb 2020

- Title: “Systems-Level Analysis of ER Stress Gene Networks in Plants”

59th Annual Maize Genetics Conference, Saint Louis, MO. Mar 2017

- Title: “Expansion of the Wisconsin Diversity Panel to Further Document the Maize Pan-Transcriptome”

CSHL Meeting - Plant Genomes & Biotechnology: From Genes to Networks, Woodbury, NY. Dec 2021

- Title: “Circadian-Mediated Regulation of Morning-Phased Genes Contributes to Biomass Heterosis in Maize Hybrids”

Botany & Plant Biology Joint Congress, Chicago, IL. Jul 2007

- Title: “Functional Analysis of Heat Shock Protein 70 in Flooding-Stressed Nicotiana tabacum”

PROFFESSIONAL SOCIETIES

Active member of the American Society of Plant Biologists (ASPB)
Active member of the Korean American Scientists and Engineers Association (KSEA)