TEXAS STATE VITA

I. ACADEMIC/PROFESSIONAL BACKGROUND

A. Name: HONG-GU KANG Title: **ASSOCIATE PROFESSOR**

B. Educational Background

Degree	*Year*	*University*	*Major*	*Thesis/Dissertation*
Ph. D.	2000	University of California, Los Angeles	Plant Molecular Biology	Characterization of *Arabidopsis* Dof transcription factors, a novel zinc finger protein family in plants
M.S.	1994	Seoul National University	Agricultural Chemistry	Translational enhancement of maize *10kZ* in transgenic tobacco by the leader sequence of TMV
B.S.	1992	Seoul National University	Agricultural Chemistry	Undergraduate Thesis: Promoter sequence of soybean *Glycinin* gene regulates seed-specific expression in transgenic tobacco. graduated *cum laude*

C. University Experience

Position	*University*	*Dates*
Assistant Professor	Texas State University	2012 - 2017
Associate Professor	Texas State University	2017 - present

D. Relevant Professional Experience

Position	*Entity*	*Date*
Core Doctoral Faculty in Aquatic Biology	Texas State University-San Marcos	2012 - present

E. Other Professional Credentials

F. Honor Societies

II. TEACHING

A. Teaching Honors and Awards:

B. Courses Taught:

Course Number (Dates taught)	*Course Title*
Bio4480/5480 (Every Fall from 2012 to 2017, 2022)	Cytology and Microtechnique

Bio4441/5441 (Every Spring since 2013)	Cell Physiology
Bio7361C (Every Fall from 2017 to 2019)	Advanced Genomics and Bioinformatics
Bio4377/5377 (Every Fall from 2018 to 2019)	Genome informatics

C. GRADUATE THESES/DISSERTATIONS OR EXIT COMMITTEES

Advisees to PhD

Student	Matriculation Date	Graduation Date	Thesis Title
Yogendra Bordiya	Jan 2015	Dec 2017	Epigenetic regulation of the defense gene induction in Arabidopsis thaliana in response to Pseudomonas syringae
Ji-Chul Nam	Mar 2016	Dec 2020	MED9, a mediator complex component, and its interacting protein MORC1 balance growh and defense in Arabidopsis
Dinesh Pujara	Dec 2020		
Padam S. Bhatt			

PhD Student Committees

Student/Advisor	Thesis Title	Graduation Date
Praveen Kumar Kathare /Dharmasiri	Functional Characterization of *Saur* genes in plant growth and development	Aug 2015

Advisees to MS degree

Student	Date MS	Thesis Title
April Bonnard	Aug 2016	Histone variant H2A.Z substitution mediated by the SWR1-like complex is a novel transcriptional regulatory mechanism controlling defense genes and immunity in plants
Oluwadamilare Afolabi	Dec 2020	Identification of transcriptome dynamic patterns and their cognate cis-elements in defense genes in Arabidopsis
José Mayorga	TBA	*In progress*

MS Student Committees

Student (Advisor)	Thesis Title	Graduation Date
Yuting Hou (Dharmasiri)	Characterization of *PIC7* gene functions in Arabidopsis hormone response	Dec 2012
Peter Shepherd	Non-thesis	Dec 2013
D. Raymond (Dharmasiri)	Characterization of a major facilitator superfamily transporter protein in Arabidopsis	Dec 2015
P. Ghimire	Characterization of IBR5 interacting protein,	Dec 2015

(Dharmasiri)	ARA2 in Arabidopsis auxin response	
Swathi Lakshmi	Non-thesis	Apr 2016
Priyanka Kodangi		
Danielle Wilson	Non-thesis	Apr 2016
Eric M. Garza	Non-thesis	May 2016
Elia R. Lopez (Dharmasiri)	Characterization of IBR5-ROP GTPase (ROP2/ROP6) interactions in plant auxin response	Aug 2016
Lisa Maria Hanson (Westerlund)	Gender Differences in Student Attitudes Towards Science In Secondary School Classrooms With Resident Scientists	Nov 2016
Nick Siepert (Dharmasiri)	Characterization of The Ibr5-Pad1 Interaction in Arabidopsis Auxin Response	Nov 2017
William Wilson	Non-thesis	Jun 2018
Idrees Ahmad	Interaction of IBR5 and small GTP-binding proteins in growth and development of Arabidopsis	Apr 2019
Tim Cioffi (Dharmasiri)	The role of IBR5 in regulating plant auxin response through the SCF-TIR1 complex	Apr 2019
Vizcaino, Daniel	Non-thesis	Apr 2019
Rohit Katti (Dharmasiri)	The role of IBR5-AtNRPD4 interaction in plant growth and development	Jul 2019
Mahbubur Rahman (Valles)	Quantifying resistance luminescence traits in high throughput plant phenotyping by computer vision and image processing	Nov 2021
Sam McKann	Non-thesis	Nov 2021
Israel Arellano (Dharmasiri)	*TBA*	*In progress*

D. COURSES PREPARED AND CURRICULUM DEVELOPMENT

- BIO4377/5377 Genome informatics
- BIO7361C Advanced Bioinformatics

E. FUNDED EXTERNAL TEACHING GRANTS AND CONTRACTS

F. PENDING EXTERNAL TEACHING GRANTS AND CONTRACTS

G. SUBMITTED, BUT NOT FUNDED, EXTERNAL TEACHING GRANTS AND CONTRACTS

III. SCHOLARLY/CREATIVE

A. WORKS IN PRINT

1. Books

2. Articles

a. Refereed Journal Articles

- Sung-Il Kim, Yogendra Bordiya, Haomin Lyu, Dinesh S. Pujara, José Mayorga, Haewon Chung, Jong-Hwan Kim, Qingyi Yu, and **Hong-Gu Kang** (2022) A nuclear tRNA-derived fragment triggers immunity in Arabidopsis. *Nature*, under review
- Dinesh S. Pujara, Sung Il Kim, Ji Chul Nam, José Mayorga, Isabella Elmore, Manish Kumar, Hisashi Koiwa, and Hong-Gu Kang (2021) Imaging-based resistance assay using enhanced luminescence-tagged *Pseudomonas syringae* revealed a complex epigenetic network in plant defense signaling pathways. *Molecular Plant-Microbe Interaction*, 34, 990-1000
- Sung-Il Kim, Yogendra Bordiya, Ji-Chul Nam, José Mayorga, and **Hong-Gu Kang** (2021) High-throughput targeted transcriptional profiling of defense genes using RNA-mediated oligonucleotide Annealing, Selection, and Ligation with next-generation sequencing in Arabidopsis. *Methods in Molecular Biology*, 2328, 227-252
- Goldi Makhijaa, Dinesh Pujara, In-Hyouk Song, Byoung Hee You, **Hong-Gu Kang** (2020) Constructing an automation table for an image-based Arabidopsis resistance assay. *Engineering* **6**, 495
- Aline Koch, **Hong-Gu Kang**, Jens Steinbrenner, D'Maris A. Dempsey, Daniel F. Klessig and Karl-Heinz Kogel, (2017) MORC Proteins: Novel Players in Plant and Animal Health. *Frontiers in Plant Science*, **8,** 1720
- Yogendra Bordiya and **Hong-Gu Kang** (2017). Genome-wide analysis of chromatin accessibility in Arabidopsis infected with Pseudomonas syringae. *Methods in Molecular Biology*, **1578**, 263-272
- Yogendra Bordiya, Yi Zheng, Ji-Chul Nam, Hyong Woo Choi, Daniel F. Klessig, Zhangjun Fei and **Hong-Gu Kang** (2016) Pseudomonas infection enhances Arabidopsis genomic accessibility to transposons that physically interact with MORC1. *Molecular Plant-Microbe Interaction*, **29**, 674-687
- Thomas A. DeFalco, Huda Abdel-Hamid, Christopher B. Marshall, Ji Chul Nam, **Hong-Gu Kang**, Wolfgang Moeder, Mitsuhiko Ikura, Wayne A. Snedden, and Keiko Yoshioka (2016) An N-terminal calmodulin-binding site regulates cyclic nucleotide-gated ion channel 12 (AtCNGC12)–induced programmed cell death in Arabidopsis. *Plant Cell*, **28,** 1738-1751
- Jeong Hee Lee, Chang-Sik Oh, Ju Yeon Moon, **Hong-Gu Kang**, and Jeong Mee Park (2016) The endoplasmic reticulum protein BiP5 plays an essential role in the HRT-mediated hypersensitive response by modulating expression of HRT in *Nicotiana benthamiana*. *Molecular Plant Pathology*, **17**,1382-1397
- Patricia Manosalva, Murli Manohar, Ji Chul Nam, Karl-Heinz Kogel, **Hong-Gu Kang** and Daniel Klessig (2015) The GHKL ATPase MORC1 modulates species-specific plant immunity in Solanaceae. *Molecular Plant-Microbe Interaction*, **28**, 927-42
- Gregor Langen, Sabrina von Einem, Aline Koch, Jafargholi Imani, Subhash B. Pai, Murli Manohar, Katrin Ehlers, Hyong Woo Choi, Hyung-Gon Mang, Yogendra Bordiya, **Hong-Gu Kang**, Daniel F. Klessig, Karl-Heinz Kogel (2014) The CRT1 subfamily of MORC ATPases Modulates Disease Resistance in Barley to Biotrophic and Necrotrophic Pathogens. *Plant Physiology*, **164**, 866-78
- **Hong-Gu Kang**[*], Hyong Woo Choi, Sabrina von Einem, Patricia Manosalva, Katrin Ehlers, Po-Pu Liu, Stefanie umar, V. Buxa, Magali Moreau, Hyung-Gon Mang, Pradeep Kachroo, Karl-Heinz Kogel, Daniel F. Klessig[*] **(**2012) CRT1 is a nuclear-translocated MORC endonuclease that participates in multiple levels of plant immunity. *Nature Communications* **3**, 1297 (*corresponding author).
- Hyung-Gon Mang, Weiqiang Qian, Ying Zhu, Jun Qian, **Hong-Gu Kang**, Daniel F. Klessig, and Jian Hua (2012) ABA deficiency antagonizes high temperature inhibition of disease resistance through enhancing nuclear accumulation of R proteins SNC1 and RPS4. *Plant Cell*, **24**: 1271-1284.

Prior to the Appointment at Texas State University

- Hyoung Yool Lee, Christopher Bowen, George Popescu, **Hong-Gu Kang**, Shisong Ma, Naohiro Kato, Savithramma Dinesh-Kumar, Michael Snyder and Sorina C. Popescu (2011) BTI1 and BTI2 Reticulon-Like Proteins Regulate Intracellular Trafficking and Activity of the FLS2 Immune Receptor. *Plant Cell*, 23, 3374-3391.
- **Hong-Gu Kang**, Chang-Sik Oh, Masanao Sato, Fumiaki Katagiri, Jane Glazebrook, Hideki Takahashi, Gregory Martin and Daniel F. Klessig (2010). Endosome-associated CRT1 functions early signaling in *R* (*resistance*) gene-mediated defense signaling. *Plant Cell*, 22, 918-936.
- Bong Soo Park, Hee Jeong Eo, In-Cheol Jang, **Hong-Gu Kang**, Jong Tae Song and Hak Soo Seo (2010) Ubiquitination of LHY by SINAT5 regulates flowering time and is inhibited by DET1. *Biochemical & Biophysical Research Communications*, 398, 242-246.
- Joyce Baxter, Wolfgang Moeder, William Urquhart, Dea Shahinas, Kimberley Chin, Dinesh Christendat, **Hong-Gu Kang**, Magdalena Angelova, Naohiro Kato, and Keiko Yoshioka (2008). Identification of a functionally essential amino acid for *Arabidopsis* cyclic nucleotide gated ion channels using the chimeric *ATCNGC11/12* gene. *Plant Journal*, 56, **457-469**.
- Ken-Taro Sekine, Sayaka Kawakami, Shu Hase, Mayumi Kubota, Yuki Ichinose, Jyoti Shah, **Hong-Gu Kang**, Daniel F. Klessig, and Hideki Takahashi (2008). High level expression of a virus resistance gene, *RCY1*, confers extreme resistance to *Cucumber mosaic virus* in *Arabidopsis thaliana*. *Molecular Plant-Microbe Interactions*, 21, 1398-1407.
- **Hong-Gu Kang** and Daniel F. Klessig (2008). The involvement of the Arabidopsis CRT1 ATPase family in disease resistance protein-mediated signaling. *Plant Signaling & Behavior* 3, 689-690.
- **Hong-Gu Kang**, Joseph Kuhl, Pradeep Kachroo, and Daniel F. Klessig (2008) CRT1, an *Arabidopsis* ATPase that interacts with diverse resistance proteins and modulates disease resistance to Turnip crinkle virus. *Cell Host & Microbe* 3, 48-57.
- Keiko Yoshioka, Wolfgang Möder, **Hong-Gu Kang**, Pradeep Kachroo, Khaled Masmoud, Gerald Berkowitz and Daniel F. Klessig (2006) The Chimeric *Arabidopsis* Cyclic Nucleotide-Gated Ion Channel AtCNGC11/12 activates multiple pathogen resistance responses. *Plant Cell* 18, 747-763.
- Frank Menke[*], **Hong-Gu Kang**[*], Zhixiang Chen, Jeong Mee Park, Dhirendra Kumar, Daniel F. Klessig (2005) Tobacco transcription factor NtWRKY1 is phosphorylated by MAP kinase SIPK and mediates HR-like cell death in tobacco. *Molecular Plant-Microbe Interactions* 18, 1027-1034. ([*]equal contribution)
- **Hong-Gu Kang** and Daniel F. Klessig (2005) Salicylic acid inducible *Arabidopsis* CK2-like activity phosphorylates TGA2. *Plant Molecular Biology* 57, 541-557.
- A.C. Chandra-Shekara, DuRoy Navarre, Aardra Kachroo, **Hong-Gu Kang**, Daniel Klessig, Pradeep Kachroo (2004) Signaling requirements and role of salicylic acid in *HRT*- and *rrt*-mediated resistance to turnip crinkle virus in Arabidopsis. *Plant Journal* 40, 647-659.
- **Hong-Gu Kang**[*], Rhonda Foley[*], Luis Onate, Chentao Lin and Karam B. Singh (2003) Target genes for OBP3, a Dof transcription factor, include novel basic helix-loop-helix domain proteins inducible by salicylic acid. *Plant Journal* 35, 362-372. ([*]equal contribution)
- **Hong-Gu Kang** and Karam B. Singh (2000) Characterization of salicylic acid responsive *Arabidopsis* Dof domain proteins: overexpression of OBP3 leads to growth defects. *Plant Journal* 21, 329-340.
- **Hong-Gu Kang**, Yiwen Fang, and Karam B. Singh (1999) A glucocorticoid-inducible transcription system causes severe growth defects in *Arabidopsis* and induces defense-related genes. *Plant Journal* 20, 127-133.

- **Hong-Gu Kang**, Jee Won Park, Chung Ho Kim, Jae Yun Lim, and Yang Do Choi (1995) Translational enhancement by the leader of tobacco mosaic virus and soybean *glycinin* gene in transgenic tobacco plants. *Agricultural Chemistry & Biotechnology* 38, 224-231.
- Min Hyung Kang, **Hong-Gu Kang**, Min Gyu Lee, Sung Soon Park, Hee Jin Lee, Youngam Chae, and Yang Do Choi (1993) Molecular cloning of cytochrome P-450 oxidase gene in peppermint (*Menta Piperita*). *Molecules & Cells* 3, 283-288.
- Chung Ho Kim, **Hong-Gu Kang**, and Yang Do Choi (1993) Interaction of nuclear factor with the 5' upstream region of soybean *Glycinin* Gene. *Molecules & Cells* 3, 165-170.
- Jee Won Park, Chung Ho Kim**, Hong-Gu Kang**, and Yang Do Choi (1992) Promoter sequence of soybean *Glycinin* gene regulates seed-specific expression in transgenic tobacco. *Molecules & Cells* 2, 297-302.

b. Non-refereed Journal Articles

3. Conference Proceedings:

a. Refereed Conference Proceedings:

b. Non-refereed

4. Abstracts:

5. Reports:

6. Book reviews

7. Other:

B. Works not in print

1. Papers Presented at Professional Meeting

- July 2019, A DCL1-generated tRNA-derived small RNA is a potential positive regulator in plant immunity. *18th International Congress on Molecular Plant-Microbe Interactions.* Glasgow, Scotland
- March 2018, A targeted RNA-seq approach revealed that epigenetic components are involved in the induction dynamics of defense genes in Arabidopsis, *Annual Meeting of American Society of Plant Biologists-Southern Section*, New Orleans, LA (presented by Dinesh Pujara)
- June 2017, Transposable elements function an enhancer for defense genes in response to pathogen infection in Arabidopsis. *The Annual Plant Biology Meeting,* Honolulu, HI
- July 2016, Pathogen infection and MORC1 affect chromatin accessibility of transposable elements and expression of their proximal genes in Arabidopsis. *17th International Congress on Molecular Plant-Microbe Interactions*. Portland, OR.
- Jul 2015, Arabidopsis MORC1/CRT1 Interacts with a Wide Range of Putative Chromatin-remodeling Factors. *Annual meeting of the American Society of Plant Biologists.* Minneapolis, MN.
- June 2014. Molecular clues to the function of CRT1/MORC1 ATPase family in plant immunity. *16th International Congress on Molecular Plant-Microbe Interactions.* Rhode Island, Greece.

- August 2013. *Arabidopsis* CRT1 dimerizes with itself and some of family members through the C-terminal domain carrying a coiled-coil motif. *Annual meeting of American Phytopathological Society*. Austin, TX.
- July 2013. Characterization of Arabidopsis CRT1 in plant immunity and genome stability. *Annual meeting of the American Society of Plant Biologists.* Providence, RI
- June 2013. Characterization of Arabidopsis CRT1 in plant immunity and genome stability. *International Conference on Arabidopsis Research.* Sydney, Australia
- March 2013. Arabidopsis CRT1, an endonuclease, participates in multiple levels of plant immunity. *The Southern Section Meeting of the American Society of Plant Biologists.* Little Rock, AR
- August 2012. CRT1 participates in multiple levels of plant immunity, is nuclear localized, and is a member of the MORC ATPase superfamily. *Annual meeting of the American Society of Plant Biologists.* Austin, TX.
- August 2011. The CRT1 family participates in multiple layers of resistance in plants to a wide range of pathogens. *Annual meeting of the American Society of Plant Biologists.* Minneapolis, MN.
- June 2010. Endosome-associated CRT1 functions early signaling in *R* (*resistance*) gene-mediated defense signaling. *21st International Conference on Arabidopsis Research.* Yokohama, Japan
- July 2009. CRT1, a new player in *R* gene-mediated immunity in plants. *14th International Congress on Molecular Plant-Microbe Interactions.* Quebec City, Canada
- June 2008. CRT1, an *Arabidopsis* ATPase that interacts with diverse resistance proteins and modulates disease resistance to turnip crinkle virus. *Annual meeting of the American Society of Plant Biologists.* Merida, Mexico.
- June 2007. *Turnip crinkle virus* resistance in *Arabidopsis* requires CRT1, a new member of the GHKL ATPase family. *18th International Conference on Arabidopsis Research.* Beijing, China.
- August 2006. A novel ATPase family in *Arabidopsis* is involved in regulating defense responses to pathogens. *Annual meeting of the American Society of Plant Biologists.* Boston, MA.
- June 2005. Transcription factor NtWRKY1 is phosphorylated by MAP kinase SIPK and mediates HR-like cell death in tobacco. *16th International Conference on Arabidopsis Research.* Madison, WI.
- July 2004. SA-inducible *Arabidopsis* CK2-like activity phosphorylates TGA/OBF in *Arabidopsis*. *Annual meeting of the American Society of Plant Biologists.* Orlando, FL.
- June 2002. SA-inducible CK2 activity may play a role in controlling the subcellular localization of TGA/OBP in *Arabidopsis*. *13th International Conference on Arabidopsis Research.* Seville, Spain.
- June 1999. Characterization of *Arabidopsis* Dof transcription factors, a novel zinc finger protein family in plants. *10th International Conference on Arabidopsis Research.* Melbourne, Australia.
- April 1999. Characterization of *Arabidopsis* Dof transcription factors, a novel zinc finger protein family in plants. *Current topics in plant biochemistry, physiology and molecular biology.* Columbia, MO.

2. Invited Talks, Lectures, and Presentations:

- October 2020, tRNA-derived sRNAs in plant resistance, NSF, Online
- February 2020, An unexpected role of tRNAs in plant resistance, Colorado State University, Fort Collins, CO

- August 2019, Arabidopsis DCL1-associated small RNAs may function as a positive transcriptional regulator for defense genes, *PIRC/BRL Joint Symposium*, Gyoung Ju, Korea
- May 2019, tRNA: its unexpected role in plant resistance, *Korea Advanced Institute of Science and Technology*, Daejon, Korea
- May 2018, Chromatin dynamics and its role in plant defense responses. *Texas A&M AgriLife Dallas Center*, Dallas, TX
- May 2018, Chromatin dynamics and its role in plant defense responses. *Chung-Ang University*, Ansung, Korea
- May 2017, Role of Transposable Elements in Stress Response & Adaptation Pathogen infection and MORC1 affect chromatin accessibility of transposable elements and expression of their proximal genes in Arabidopsis. Department of Food and Biotechnology, Korea University, Sejong, Korea
- August 2017, Role of epigenetics in stress response and adaptation. Tohoku University, Sendai, Japan
- November 2016, Role of epigenetics in stress response & adaptation. Department of Biological Sciences, University of North Texas, Denton, TX
- July 2016, Pathogen infection and MORC1 affect chromatin accessibility of transposable elements and expression of their proximal genes in Arabidopsis. Department of Plant Pathology, Texas A&M, College Station, TX
- February 2016, Role of epigenetics in stress response and adaptation. Department of Biological Sciences, East Tennessee State University, Johnson City, TN
- November 2015, Role of epigenetics in stress response and adaptation. Department of Biology, University of Texas, Austin, TX
- November 2015, Arabidopsis MORC1 is associated with a subset of transposable elements proximal to defense genes. Department of Biology, University of Texas, San Antonio, TX
- September 2015, Arabidopsis MORC1 is associated with a subset of transposable elements proximal to defense genes. Department of Plant Biology, Penn State University, University Park, PA
- September 2014, Molecular clues to the function of CRT1/MORC1 family in plant immunity, Department of Chemistry and Biochemistry, Texas State University, San Marcos, TX
- August 2014, The CRT1/MORC1 ATPase family modulates an epigenetic control of immunity in plants, Department of Horticulture, Seoul National University, Korea
- June 2014. Molecular clues to the function of CRT1/MORC1 ATPase family in plant immunity. *16th International Congress on Molecular Plant-Microbe Interactions.* Rhode Island, Greece.
- February 2014, Potential epigenetic function of MORC1 in plant immunity. Department of Cell and Systems Biology, University of Toronto, Canada
- November 2013, Molecular clues to the function of CRT1/MORC1 family in plant immunity, Department of Biology, Baylor University, Waco, TX
- October 2013, Arabidopsis CRT1/MORC1, an Important Modulator in a Wide Range of Plant Immunity, Functions in RNA Dependent DNA Methylation, Annual Meeting of Korean Society of Plant Pathology, Suncheon, Korea.
- September 2013, Molecular clues to the function of CRT1/MORC1 family in plant immunity, Department of Horticultural Sciences, Texas A&M, College Station, TX
- August 2013. *Arabidopsis* CRT1 dimerizes with itself and some of family members through the C-terminal domain carrying a coiled-coil motif. *Annual meeting of American Phytopathological Society*. Austin, TX.

- May 2013. Arabidopsis CRT1, an endonuclease, participates in multiple levels of plant immunity. *Department of Agricultural Chemistry, Seoul National University, Seoul, Korea*
- May 2013. Arabidopsis CRT1, an endonuclease, participates in multiple levels of plant immunity. *Institute of Biotechnology, Korea University, Seoul, Korea*
- May 2013. Arabidopsis CRT1, an endonuclease, participates in multiple levels of plant immunity. *Department of Biochemistry and Biophysics, Texas A&M, College Station, TX*
- August 2012. CRT1 participates in multiple levels of plant immunity, is nuclear localized, and is a member of the MORC ATPase superfamily. *Annual meeting of the American Society of Plant Biologists.* Austin, TX.
- February 2011. CRT1-a key component in four levels of plant immunity. *Department of Plant Breeding & Genetics, Cornell University.* Ithaca, NY.
- June 2010. Characterization of CRT1, an early signaling component in *R* gene-mediated resistance, implicates carbohydrates in plant defense responses. *Institute of Crop Sciences, Chinese Academy of Agricultural Sciences.* Beijing, China.
- November 2008. CRT1, a new player in *R* (*resistance*) gene-mediated plant resistance. *Department of Plant Pathology & Plant-Microbe Biology, Cornell University.* Ithaca, NY.
- June 2008. CRT1, an *Arabidopsis* ATPase that interacts with diverse resistance proteins and modulates disease resistance to turnip crinkle virus. *Annual meeting of the American Society of Plant Biologists.* Merida, Mexico.
- June 2006. CRT1, a novel GHKL ATPase, interacts with HRT and other R proteins, and modulates resistance to *Turnip crinkle virus. Department of Agricultural Biotechnology, Seoul National University.* Seoul, Korea
- November 2004. Phosphorylation/dephosphorylation of a TGA transcription factor and its potential role(s) in *Arabidopsis*. *Korea Research Institute of Bioscience & Biotechnology.* Taejon, Korea.
- June 2000. Characterization of Arabidopsis Dof transcription factors, a novel zinc finger protein family in plants. *Department of Biological Sciences, Korea Advanced Institute of Science and Technology*. Taejon, Korea.

C. GRANTS AND CONTRACTS

1. FUNDED EXTERNAL RESEARCH GRANTS

- March 2016 – February 2021 ($786,023). NSF-IOS. CAREER-Characterization of epigenetic factors and their regulatory roles in modulating transposable elements, plant immunity and transgenerational inheritance.
- September 2018 - August 2020 (Program Faculty). NIH. The South Texas Doctoral Bridge Program

2. PENDING EXTERNAL GRANTS FOR RESEARCH

- January 2021. CPRIT-HRHI: tRNA-derived small RNAs as a tumorigenesis regulator in eukaryotic cells

3. SUBMITTED BUT NOT FUNDED EXTERNAL GRANTS AND CONTRACTS

- April 2020. Keck Foundation: Examination of tRNA-derived sRNAs as an immunity-boosting agent in animals and plants
- February 2015. NIH-R15: Characterization of chromatin dynamics modulated by epigenetic factors during the activation of plant immunity
- July 2014. NSF-IOS. CAREER-Characterization of heterochromatin dynamics in plants responding to biotic stress and transgenerational memory

- July 2013. NSF-IOS. CAREER-Characterization of heterochromatin dynamics in plants responding to biotic stress
- January 2013. NSF-IOS. Molecular characterization of plant genome stability in response to biotic stresses
- October 2012. NIH-R15. Characterization of programmed cell death in host immune responses
- February 2012. NIH-R15. Characterization of programmed cell death in host immune responses
- January 2012. NSF-IOS. Molecular, genetic, and biochemical characterization of CRT1 in plant immune responses

FUNDED INTERNAL GRANTS AND CONTRACTS

- 2014. MIRG (PI: **Kang**, co-PIs: Song, You, and Li). Development of electrochemical impedance spectroscopy-based device sensing epigenetic changes for early cancer detection

PENDING INTERNAL GRANTS FOR RESEARCH

SUBMITTED BUT NOT FUNDED INTERNAL GRANTS AND CONTRACTS

- October 2017. REP (co-PI: Kumar). Development of CRISPR Cas9-based genome editing and its fidelity assessment in Clostridium difficile, a rare DNA repair-deficient genetic system
- April 2017. MIRG. Development of massive parallel RNA sequencing for cancer diagnosis
- October 2015. REP. Characterization of chromatin dynamics in plants under biotic stress.
- October 2013. REP. Characterization of chromatin dynamics in plants under biotic stress.
- October 2012. REP. Functional characterization of CRT1 in immunity-associated genome stability.

D. FELLOWSHIPS, AWARDS, HONORS

- September 2020, Presidential Research Award, Texas State University
- August 2017, College Achievement Awards, COSE, Texas State University
- July 2015: ASPB Recognition Travel Award - American Society of Plant Biologist, Minneapolis, MN
- July 2013: Travel Award – Plant Biology 2013 - American Society of Plant Biologist, Providence, RI
- June 2013: Travel Award – International Conference on Arabidopsis Research, Sydney, Australia
- February 2013: Travel Award - Scientists and Engineers Early Career Development (SEECD) Workshop, Korean-American Scientist and Engineer Association, Atlanta, GA
- 1994-1997: Korean Ministry of Education Pre-doctoral Fellowship

E. PATENTS

- Kang, HG and Kim SI (2021) MODULATING STRESS RESPONSES BY A NOVEL CHROMATIN-ASSOCIATED GUIDE RNA DERIVED FROM TRANSFER RNA - provisional

IV. SERVICE

University:

- 2014 – 2021. Institutional Biosafety Committee Member
- 2021 – current: Institutional Biosafety Committee Chair

College:

Departmental:

- 2016 – current: Tenure-track mentoring committee
    - Dr. Mar Huertas (2016 -)
    - Dr. Camila Carlos-Shanley (2018 -)
- 2018. Faculty Search Committee: Microbial Functional Genomics
- 2017 - current: Technical Support Personnel
- 2017 - current: Department Seminar Committee
- 2015: Judge, The 2nd Annual Departmental 3MT Competition
- 2013: Strategic Hiring Plan Committee
- 2012 - 2018: Managed deionized water in the Supple building
- 2014 - 2017: Managed Research Greenhouse
- 2012. Judge, Department Colloquium

Community:

- Science Fair Judge:
    - Alamo Regional Science Fair (2019; 2018; 2017)
    - ExxonMobil Texas Science and Engineering Fair (2014; 2015)
    - Austin Energy Regional Science Festival (2014; 2015)
    - Bowie High School Science Fair (2013; 2014; 2015)
- 2017 - 2020: President, Austin Chapter of Korean-American Scientist & Engineer Association
- 2013- 2016: Vice-president, Austin Chapter of Korean-American Scientist & Engineer Association
- 2014. Epigenetics. Other side drive. KTSW 89.9 Radio Station

Professional:

- Session Chair
    - 2015. Epigenetics. Annual meeting of the American Society of Plant Biologists.
- Grant review panelist
    - 2014, 2016, 2020: NSF-IOS
    - 2016: USDA-NIFA
- Grant *ad hoc* reviewer
    - 2018. NSF-IOS
    - 2015. Hungary National Research Development and Innovation Office.
    - 2012. German-Israeli Foundation for Scientific R&D.

- Journal editor
    - *Frontiers in Plant Science* (2015 – current; Reviewing Editor)
    - *Molecular Plant-Microbe Interactions* (2016 – 2019; Associate Editor)
    - *Plant Biotechnology Reports* (2019 – current; Editorial Board)
- Journal *ad hoc* reviewer (2012- current):
    - *BMC-Plant Biology, Planta, Plant Journal, Molecular Plant Pathology, PLoS Pathogens, PLoS Genetics, Frontier in Plant Science, Molecular Plant-Microbe Interactions Plant, Plant Cell, Physiology and Biochemistry, Scientific Reports, Trends in Plant Science*

PENDING EXTERNAL GRANTS FOR SERVICE

ORGANIZATIONS OF WHICH I AM OR HAVE BEEN A MEMBER
Professional:

- American Society of Plant Biologists.
- American Phytopathological Society.
- American Association for the Advancement of Science.
- Korean-American Scientist and Engineer Association