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Positions and Employment

2013- Associate Professor, Department of Molecular Biosciences, the University of Texas at Austin

2007- Assistant Professor, Section of Molecular Cell & Developmental Biology, the University of Texas
at Austin

Education

Seoul National University, Biology, BS with Honors (<i>summa cum laude</i>)	1996
Seoul National University, Biology, MS	1998
University of Wisconsin in Madison, Biochemistry, PhD	2004
University of Wisconsin in Madison, Biochemistry, Postdoctoral fellow	2004-2007

Publications

Xi Y., S. Sung, 2019, Transcriptome and epigenome analyses of vernalization in *Arabidopsis thaliana*. *Genome Biol.* *Submitted*.

Kim ED, Y. Xiong, B.-H. Kang, S. Sung, 2019, Identification of long noncoding RNAs in the developing endosperm of Maize. *Methods. in Mol. Biol.* , in press

Wang L., Y. Xi, S. Sung, H. Qiao, 2018, RNA-seq assistant: machine learning based methods to identify more transcriptional regulated genes. **BMC Genomics**, 19(1):546.

Kim D. H., Xi Y., and Sung S, 2017, Modular function of long noncoding RNA, COLDAIR, in the vernalization response. **PLoS Genet**, 13(7):e1006939.

Kim ED, Y Xiong, Y. Pyo, DH Kim, BH Kang, S. Sung, 2017, Spatio-temporal analysis of coding and long noncoding transcripts during maize endosperm development, **Scientific Rep.**, 19;7(1):3838.

Kim D. H. and Sung S, 2017, Vernalization-triggered intragenic chromatin-loop formation by long noncoding RNAs. **Developmental Cell**, (16) 30916-9.

Kim DH, Sung S., 2017, Accelerated vernalization response by an altered PHD-finger protein in *Arabidopsis*. **Plant Signal Behav.** 12(5):e1308619.

Kim D. H. and Sung S, 2017, The binding specificity of PHD-finger domain of VIN3 moderates vernalization response. **Plant Physiology**, 173(2):1258-1268.

Zhang F, L. Wang, J.Y. Lim, T Kim, Y. Pyo, S. Sung, C. Shin, H. Qiao, 2016, Phosphorylation of CBP20 Links MicroRNA to Root Growth in the Ethylene Response. **PLoS Genet** 12(11):e1006437.

- Sharma, N., R. Xin, D.-H. Kim, S. Sung, T Lange, and E. Huq, 2016, NO FLOWERING IN SHORT DAY (NFL) is a bHLH transcription factor that promotes flowering specifically under short-day in Arabidopsis, **Development**, 143(4):682-90.
- Kim D. H. and Sung S, 2014, Polycomb-Mediated Gene Silencing in Arabidopsis thaliana. **Mol Cells.**, 31;37(12):841-850.
- Xiong, Y., Mei W., Kim E. D. , Mukherjee K., Hassanein H., Barbazuk W., Sung S., Kolaczowski B., B. H. Kang, 2014, Adaptive expansion of the maize, **BMC Plant Biol.**, 14(1):204.
- Pyo, Y., S. Park, Y. Xi and S. Sung, 2014, Regulation of Flowering by Vernalisation in Arabidopsis. **Advances in Botanical Research** 72:29-61.
- Kim D. H. and Sung S, 2014, Vernalization. **Temperature and Plant Development (edited by K. A. Frankin & OP. A. Wigge)**, 79-95.
- Jones, A. L. and S. Sung, 2014, Mechanisms underlying epigenetic regulation in Arabidopsis thaliana, **Integr Comp Biol.**, 54(1) 61-7.
- Kim, D. H. and S. Sung, 2014, Genetic and Epigenetics Mechanisms Underlying Vernalization, **The Arabidopsis Book**, 12: e0171.
- Heo, J. B. , Y. S. Lee and S. Sung, 2013, Epigenetic regulation by long noncoding RNAs in plants. **Chromosome Res.**, 21:685-93.
- Kim, D. H. and S. Sung, 2013, Coordination of the vernalization response through a *VIN3* and *FLC* gene family regulatory network in Arabidopsis. **Plant Cell**, 25(2):454-69.
- Hyun, Y., H. Yun, K. Park, H. Ohr, O. Lee, D. H. Kim, S. Sung and Y. Choi, 2013, Stable inheritance of epigenetic histone modifications requires INCURVATA2, the catalytic subunit of Arabidopsis DNA polymerase [alpha], **Development**, 140(1):156-66.
- Zografos B. R. and S. Sung, 2012, Vernalization-mediated chromatin changes, **J. Exp. Bot.**, 63:4343-8.
- Heo J. B., S. Sung and S. Assmann, 2012, A Ca²⁺-dependent GTPase, EXTRA-LARGE G-PROTEIN2 (XLG2), promotes activation of the DNA binding-protein RELATED TO VERNALIZATION1 (RTV1), leading to activation of floral integrator genes and early flowering in Arabidopsis. **J. Biol. Chem.**, 287:8242-8253.
- Kim D. H. and S. Sung, 2012, Environmentally coordinated epigenetic silencing of *FLC* by protein and long noncoding RNA components, **Curr. Op. in Plant Biol.**, 15(1):51-6.
- Kim E. D. and S. Sung, 2012, Long noncoding RNA: Unveiling hidden layer of gene regulatory networks in plants, **Trends in Plant Sci.** , 17(1):16-21.
- Heo J. B. and S. Sung, 2011, Encoding memory of winter by noncoding RNAs., **Epigenetics**, 5:544-7.
- Heo J. B. and S. Sung, 2011, Vernalization-mediated epigenetic silencing by a long intronic noncoding RNA, **Science**, 331: 76-9.
- Kim D. H. and S. Sung, 2010, Role of VIN3-LIKE 2 in facultative photoperiodic flowering response in Arabidopsis, **Plant Sig. Behav.**, 26(5):1672-3.
- Kim D. H. and S. Sung, 2010, The Plant Homeo Domain finger protein, VIN3-LIKE 2, is necessary for photoperiod-mediated epigenetic regulation of the floral repressor, MAF5, **Proc. Natl. Acad. Sci.**, 107(39): 17029-17034
- Kim D. H., B.R. Zografos, and S. Sung, 2010, Mechanisms underlying vernalization-mediated VIN3 induction **Plant Signal Behav.**, 26(5):1457-9.

- Kim D. H., B.R. Zografos, and S. Sung, 2010, Vernalization-mediated VIN3 induction overcomes the LIKE-HETEROCHROMATIN PROTEIN 1/Polycomb Repression Complex 2 -mediated epigenetic repression. **Plant Physiol.**, 154:949-957
- Horvath D. P., S. Sung, D.-H. Kim, W. Chao, and J. V. Anderson, 2010, Characterization, expression and function of DORMANCY ASSOCIATED MADS-BOX genes from leafy spurge. **Plant Mol. Bio.**, 73:169-79
- Kim, D.-H., M. Doyle, S. Sung, and R. M. Amasino, 2009, VERNALIZATION: WINTER AND THE TIMING OF FLOWERING IN PLANTS. **Annual Rev. Cell Dev. Biol.**, 25:277-299.
- Schmitz R.*, S. Sung*, and R. M. Amasino, 2008, AtPRMT5-Mediated Symmetric Di-methylation of Arginine 3 of Histone 4 is Required for Maintenance of Vernalization-Induced Epigenetic Silencing of FLC in Winter-Annual Strains of Arabidopsis thaliana, **Proc. Natl. Acad. Sci.**, 105:411-6. (* denotes equal contribution)
- Sung S., R. Schmitz and R. M. Amasino, 2007, The Role of VIN3-LIKE Genes in Environmentally Induced Epigenetic Regulation of Flowering, **Plant Signal Behav.** 2(2):127-8.
- Sung S., R. Schmitz and R. M. Amasino, 2006, A PHD finger protein involved in both the vernalization and photoperiod pathways in Arabidopsis., **Genes Dev.**, 20:3244-8.
- Sung S., and R. M. Amasino, 2006, Molecular genetic studies of the memory of winter, **J. Exp. Bot.**, 57:3369-77.
- Sung S., Y. He, T. W. Eshoo, Y. Tamada, L. Johnson, K. Nakahigashi, K. Goto, S. E. Jacobsen and R. M. Amasino, 2006, Epigenetic maintenance of the vernalized state in Arabidopsis thaliana requires LIKE HETEROCHROMATIN PROTEIN 1, **Nature Genet.** 38:706-10
- Sung, S. and R. M. Amasino, 2005, To remember winter: Towards a molecular understanding of vernalization, **Annual Rev. Plant. Biol.**, 56:491-508.
- Sung, S. and R. M. Amasino, 2004, Vernalization in Arabidopsis thaliana is mediated by the PHD finger protein VIN3, **Nature** 427:159-164.
- Sung, S. and R. M. Amasino, 2004, Vernalization and epigenetics: how plants remember winter, **Curr. Op. in Plant Biol.** 7:4-10.
- Hall, A., R.M. Bastow, S. J. Davis, S Hanano, H. G. McWatters, V. Hibberd, M. R. Doyle, S. Sung, K. J. Halliday, R. M. Amasino and A. J. Millar, 2003, The TIME FOR COFFEE gene maintains the amplitude and timing of Arabidopsis circadian clocks, **Plant Cell** 15:2719-2729.
- Schranz, M. E., P Quijada, S.-B. Sung, L. Lukens, R Amasino and T.C. Osborn, 2002, Characterization and effects of the replicated flowering time gene FLC in Brassica rapa, **Genetics** 162:1457-1468.
- Doyle, M., S.-B. Sung and R Amasino, 2001, Plant Reproduction (edited by S. D. O'Neill and J. A. Roberts)-The genetic control of flowering time, **Annual Plant Reviews** 6:33-60
- Lee, H., S. B. Sung, H. B. Kim and C. S. An, 2001, Sequence analysis and expression patterns of two nifA genes from EulK1, **Aust. J. Plant Physiol.**, 28:939-949.
- Yoo, W.Y., S.B. Sung and C. S. An, 1999, Nucleotide sequences of the 2-oxoacid ferredoxin oxidoreductase and ferredoxin genes from Frankia strain EulK1, a symbiont of Elaeagnus umbellata root nodules, **Can. J. Bot.** 77:1279-1286.

Patents

- U.S. Patent No. 6,693,228, Richard M. Amasino, Scott D. Michaels, Fritz M. Schomburg, Katia C. Scortecci, **Si-Bum Sung**, Alteration of flowering time in plants, Feb. 2004.
- U.S. Patent No. 7,129,396, Richard M. Amasino, Ed Himelblau, Scott D. Michaels, Fritz M. Schomburg, **Si-Bum Sung**, Dominant genes delaying flowering, Oct. 2006.
- U.S. Patent No. 7,723,565, Richard M. Amasino, **Si-Bum Sung**, Yuehui He, Vernalization-related molecules and methods for inducibly-conferring epigenetic changes. May 2010.

Current Funding:

Funding Agency: National Institute of Health-NIGMS R01 GM100108A1
Title: Coordinated regulation of floral transition by protein and long noncoding RNA components
Total Amount: \$1,215,840
Duration: 7-1-17 to 6-31-21
PI: Sibus Sung

Funding Agency: National Science Foundation
Title: The role of PHD-finger proteins in temperature-mediated responses in Arabidopsis
Total Amount: \$638,000
Duration: 3-01-17 to 2-29-20
PI: Sibus Sung

Funding Agency: Defense Advanced Research Projects Agency – Advanced Plant Technology
Title: Secure Network of Intelligent Flowers (SNIF)
Total Amount: \$5,579,003 (\$1,013,776 to Sibus Sung)
Duration: 9-30-18 to 9-30-21
PI: Andrew Ellington (Co-PIs: Alan Lloyd, Hong Qiao, Sibus Sung, and Jeff Tabor (Rice))

Completed Funding:

Funding Agency: National Institute of Health-NIGMS R01 GM100108A1
Title: Coordinated regulation of floral transition by protein and long noncoding RNA components
Total Amount: \$1,447,889
Duration: 5-1-12 to 6-31-17

Funding Agency: United States Department of Agriculture – 2011-67013-30119
Title: Cell Type Specific Epigenetic Regulation in the Maize Endosperm during Seed Development
PI & coPI: PI: Byung-Ho Kang, The University of Florida at Gainesville
Co-PI: Sibus Sung, The University of Texas at Austin
Total Amount: \$480,000 (\$220,520 to Sibus Sung)
Duration: 3-15-11 to 3-14-15

Funding Agency: National Science Foundation
Title: Flowering time control under short days by the regulatory network of *VIN3* and *FLC* gene families
Total Amount: \$399,996
Duration: 8-1-10 to 7-31-14

Teaching

Organized Courses

Spring 2008 BIO 383K.06: Current Literature in Cell & Developmental Biology – with emphasis on the epigenetic regulation of development

Spring 2009 - 2018 BIO 325 Genetics: Undergraduate (average enrollment: 100)

Fall 2018 BIO 325 Genetics: Undergraduate (average enrollment: 100)

Students Mentored

- Post Doctoral Fellow
Dr. Bo Zhao, 2017 ~; current
Dr. Yogendra Boridya, 2018 ~; current
Dr. Wei Zang; 2018 ~; current
Dr. Dong-Hwan Kim, ~ 2018; Currently Assistant Professor at Chung-Ang Univ., South Korea.

Dr. Jae-Bok Heo, Post Doctoral fellow; Aug. 2008 ~ Feb 2011; Currently Associate Professor at Dong-A University, South Korea

Dr. Eundeok Grace Kim, 2011 ~ 2016; Currently Research Associate at Keiko Torii's Lab (UW-Seattle)

Dr. Young-Jae Pyo; 2012 ~ 2017; Currently Research Assistant Professor at Yonsei University, South Korea

- Research Scientist
 - Nestor Rodriguez, 218 ~; current
- Graduate Students
 - Brett Zografos, CMB graduate student; 2008 ~ 2013; Currently Postdoctoral Fellow at Paris XII
 - Sungrye Park, Plant Biology graduate student; 2010 ~ 2017
 - Yanpeng Xi, Plant Biology graduate student; 2012 ~ present
 - Ashley Jones, Plant Biology graduate student; Sep 2012 ~ 2014; Currently High school teacher
 - Amy Wong, Rotating CMB student; Feb. ~ May 2008
 - Jidnyasa Mulekar, Rotating CMB student; Sep. ~ Nov. 2008
 - Marisa Miller, Rotating CMB student; Feb. 2009 ~ May 2010
- Undergraduate Students
 - Jorge Barajas, Currently undergraduate research assistant in the Lab; 2007 ~ 2012
 - Jessica Sisavath, undergraduate research assistant in the Lab; 2007 ~ 2010
 - Shahrin Tina, Currently undergraduate research assistant in the Lab; 2008 ~ 2012
 - Evelyn Joo, Currently undergraduate research assistant in the Lab; 2009 ~ 2013
 - Lindsey Dunham, undergraduate research assistant in the Lab; 2009 ~ 2010
 - Jimmy Chung, undergraduate research assistant in the Lab; 2010 ~ 2010
 - Jericho Park, undergraduate research assistant in the Lab; 2012 ~ 2014
 - Luyao Shi, undergraduate research assistant in the Lab; 2013 ~ 2016
 - Runze Ge, undergraduate research assistant in the Lab; 2016 ~ 2018
 - Johnathan Jaster, undergraduate research assistant in the Lab; 2015 ~ 2018
 - Tanya Van Zante, undergraduate research assistant in the Lab; 2017 ~ 2018
 - Edwin Chon, undergraduate research assistant in the Lab; 2017 ~ current
 - Nicholas Cerda, undergraduate research assistant in the Lab; 2018 ~ current
 - Chung-Wing Ko, undergraduate research assistant in the Lab; 2018 ~ current
- K-12 students (summer research program – since 2012)

Other academic activity

University Service

MCDB seminar organization committee; 2008 ~ 2010

Prelim committee, Cell & Molecular Biology; 2009 ~ 2015

Graduate Admission Committee, Cell & Molecular Biology; 2009 ~ present

MCDB student support committee; 2010 ~ 2013

MCDB retreat organization committee; 2011 ~ 2013

MCDB faculty search committee, 2012 ~ 2013

ICMB advisory committee; 2013 ~ 2016

MBS Course and Curriculum committee; 2013 ~

Undergraduate Advisor, Plant Biology; 2013 ~

College of Natural Sciences Undergraduate Advisor Committee; 2013 ~

Greenhouse Management Committee; 2013 ~

Qualifying Examination Core-Committee of 15 faculty (Q15), Cell & Molecular Biology; 2015 ~

Chair, International Graduate Admission Committee for Cell & Molecular Biology; 2015 ~ present

Plant Biology Graduate Student Support Committee; 2015 ~

Plant Biology Graduate Admission Committee; 2015 ~ 2016

Greenhouse Design & Construction Committee; 2016 ~

MBS Promotion & Tenure Committee; 2016 ~

MBS Faculty Search Committee; 2016 ~

Non-University Service

Organizing committee: US-Korea Conference 2016, Dallas, Aug. 2016.

Organizing committee: International Conference for Arabidopsis Research 2016

Korean American Engineers & Scientist Association, Austin Chapter President 2015 ~ 2017

Grant review: NSF review panel

ad hoc reviewer: NSF, European Research Council, BBSRC, Marsden (New Zealand), KOSEF

Editorial Board:

Environmental Epigenetics; 2015~, Frontiers in Plant Biology; 2014 ~, Frontiers in Genetics; 2014 ~.

Guest Editor: PLoS Genetics, since 2011 ~

ad hoc reviewer (> 50 / yr): BMC Genomics, BMC Plant Biology, Cell Research, Crop Science, Development, Developmental Biology, EMBO Journal, EMBO Reports, Genome Biology, Genes, Genes & Development, Journal of Biological Chemistry, Journal of Experimental Botany, Molecular Plant, New Phytologist, Plant Cell, Plant Cell & Physiology, Plant Cell and Environment, Plant Journal, Plant Physiology, Planta, PLoS Genetics, PLoS One, PNAS, RNA, Science, Trends in Cell Biology, Trends in Plant Sciences and etc.

Talk and presentation – since 2009

Invited Seminar Speaker, Dept. of Biology, University of British Columbia, Mar 2019

Invited Seminar Speaker, Dept. of Genetics, University of Georgia, Oct 2018

Invited Keynote Speaker, International Symposium of Applied Biochemistry, June 2018

Invited Seminar Speaker, Dept. Plant Sciences, Seoul National University, May 2018

Invited Seminar Speaker, Dept. of Biology, Indiana University, Nov 2017

Invited Seminar Speaker, Shanghai Center for Plant Stress Biology, China, May 2017

Invited Seminar Speaker, Plant & Microbial Biology, UC-Berkeley, CA, Dec. 2016

Invited Seminar Speaker, School of Biological Sciences, Seoul Nat'l Univ., South Korea, Nov. 2015.

Invited Seminar Speaker, CUHK, Hong Kong, Oct. 2015

Invited Symposium Speaker, Plant Biology 2015, Daejeon, South Korea, Nov. 2015.

Invited Seminar Speaker, Genetics colloquia – Univ. of Wisconsin at Madison, WI, Nov. 2014

Invited Seminar Speaker, Dept. of Molecular Biology, Chonbuk Nat'l Univ., South Korea, Aug. 2014.

Invited Seminar Speaker, Korea Polar Institute, South Korea, Aug. 2014

Invited Symposium Speaker, Keystone Symposia – Plant Signaling, Breckenridge, CO, Feb 2014.

Invited Symposium Speaker, SICB annual meeting 2014, Austin, TX, Jan. 2014.

Invited Seminar Speaker, The Stockbridge School of Agriculture, University of Massachusetts at Amherst, Dec. 2013.

Invited Seminar Speaker, Dept. of Cell Biology and Molecular Genetics, University of Maryland, Feb. 2013.

Invited Speaker; Jacques Monod Conference 2012 on RNA, France, Nov. 2012.

Invited Speaker; 10th International Congress on Plant Molecular Biology, Jeju, Korea, Oct. 2012.

Invited Seminar Speaker, Dept. Horticulture, Purdue Univ., Feb. 2012.

Invited Seminar Speaker, Dept. of MCDB, UCLA, Feb. 2012.

Invited Plenary Speaker; The Commemorative International Symposium for the 20th Anniversary of Korean Society of Life Science, Busan, Korea, Oct. 2011.

Invited Symposium Speaker; US-Korea summit on Science and Engineering of 40 years, Park City, UT, USA, Aug. 2011.

Invited Symposium Speaker; Plant Biology 2011, Minneapolis, MN, USA, Aug 2011.

Invited Symposium Speaker; Keystone Symposia – Biology and Mechanisms of silencing, Monterey, CA, USA, Mar. 2011.

Invited Symposium Speaker, SAAR- Biochemistry and biotechnology, Corpus Christi, TX, USA, Feb 2011

Invited Plenary Speaker; Plant Science Conference, Seoul, Korea, Nov 2010.

Invited Seminar Speaker; School of Biological Sciences, Seoul National University, Seoul. Korea, Nov 2010.

Invited Seminar Speaker; Graduate school of Biotechnology, Korea University, Seoul, Korea, Nov 2010.

Invited Symposium Speaker; Plant Biology 2010, Montreal, Canada, Aug 2010.

Invited Seminar Speaker; Dept. of Biology, Texas State University, Nov 2009.