

Abbreviated Curriculum Vitae for

SCHUYLER S. KORBAN

Professor of Molecular Genetics & Biotechnology
University of Illinois at Urbana-Champaign

EDUCATION

Ph.D. University of Nebraska, 1980, Horticulture -- *Plant Genetics*
M.S. American University, 1976, Horticulture -- *Plant Physiology*
B.S. American University, 1974, *Biology - Chemistry*

ACADEMIC POSITIONS

2007	Canada-US Fulbright Distinguished Chair, York University, Canada
1997, 2006	Visiting Professor, Catholic University of Leuven, Belgium
1995-present	Professor, University of Illinois, Urbana, IL.
1988-1995	Associate Professor, University of Illinois, Urbana, IL.
1982-1988	Assistant Professor, University of Illinois, Urbana, IL.
1981-1982	Postdoctoral Research Associate, University of Illinois, Urbana, IL.

AWARDS, HONORARIES, LISTINGS (selected for last five years)

Fellow, Crop Science Society of America, 2008.
Outstanding Graduate Educator Award, American Society for Horticultural Science, 2008.
NACTA Teaching Fellow Award, North American Colleges & Teachers of Agriculture, 2008.
Campus Award for Excellence in Mentoring Graduate Students, University of Illinois, 2008.
Fulbright Distinguished Chair Award, 2007-2008.
Outstanding International Horticulturist Award, American Society for Horticultural Science, 2007.
Guggenheim Foundation Fellow, 2006-2007.
Faculty Award for Global Impact, College of Agricultural, Consumer & Environmental Sciences, University of Illinois, 2006.
Wilder Medal Award, American Pomological Society, 2005.
Spitze Land-Grant Professorial Career Excellence Award, College of Agricultural, Consumer & Environmental Sciences, University of Illinois, 2005.
Paul A. Funk Recognition Award, College of Agricultural, Consumer & Environmental Sciences, University of Illinois, 2004.
Fellow, American College of Nutrition, 2003.
Outstanding Researcher Award, American Society for Horticultural Science, 2002.
Fellow, American Society for Horticultural Science, 2002.

EDITORSHIP (for last five years)

Editor-in-Chief - *Plant Molecular Biology Reporter*, 2008-present.
Editor-in-Chief - *PCTOC: Journal of Plant Biotechnology*, as of Oct. 1, 2008.
Associate Editor - *The Plant Genome*, 2008-present.
Associate Editor - *Plant Breeding*, 2008-present.
Associate Editor - *Tropical Plant Biology*, 2007-present.
Editorial Board - *Critical Reviews in Plant Science*, 2005-present.
Associate Editor- *In Vitro Cellular & Developmental Biology-Plant*, 1998-present.
Associate Editor- *Plant Cell Tissue and Organ Culture (PCTOC)*, 1998-present.

RESEARCH GRANTS AND CONTRACTS

A career total of over \$10.5 million from various funding agencies including NSF, USDA-NRI, USDA-ARS, DOE, Biotechnology Consortium, State, and Industry.

BOOK CHAPTERS/REVIEW ARTICLES (Selected from past five years) - CAREER TOTAL - 20

- Korban, S.S. and S. Tartarini. 2008. Apple structural genomics. In: S. Gardiner and K. Folta (eds.) *Genetics and Genomics of Rosaceae*. Springer, Heidelberg, Germany (in press).
- Malnoy, M., S.S. Korban, E. Borejsza-Wysocka, and H.S. Aldwinckle. 2009. Transgenic apples. In: T. Hall and C.R. Kole (eds.) *Transgenics and Molecular Tailoring in Plants*. Blackwell Publ., London, UK. (in press).
- Korban, S.S. and I.-W. Sul. 2007. Micropropagation of coast redwood (*Sequoia sempervirens*). In: S. Mohan Jain and H. Häggman (eds.) *Protocols for Micropropagation of Woody Trees and Fruits*. Springer, Heidelberg, Germany, pp. 23-32.
- Korban, S.S. 2007. [Biotechnology of] Roses. In: E.C. Pua and M.R. Davey (eds.) *Biotechnology in Agriculture and Forestry: Transgenic Crops VI*. Vol. 61, Springer-Verlag, Heidelberg, Germany, pp. 227-239.
- Korban, S.S., K. Gasic, and X. Li. 2006. *Agrobacterium*-mediated transformation of rose (*Rosa hybrida* L.). In: K. Wang (ed.) *Agrobacterium Protocols, Vol. II*. Humana Press, Totowa, NJ, pp. 351-358.
- Gasic, K. and S.S. Korban. 2006. *Agrobacterium*-mediated transformation of *Brassica juncea* (Indian mustard). In: K. Wang (ed.) *Agrobacterium Protocols, Vol. I*. Humana Press, Totowa, NJ, pp. 281-289.
- Korban, S.S. 2006. Somatic embryogenesis in rose: gene expression and genetic transformation. In: A. Mujib and J. Samaj (eds.) *Somatic Embryogenesis in Plants*. Vol. 2. Springer, Heidelberg, Germany, pp. 247-257.
- Gasic, K. and S.S. Korban. 2006. Heavy metal stress. In: K.V. Madhava Rao, A.S. Raghavendra, K. Janardhan Reddy (eds.) *Physiology and Molecular Biology of Stress Tolerance in Plants*. Springer, Heidelberg, Germany, pp. 219-254.
- Baianu, I.C., D. Costescu, T. You, P.R. Lozano, N.E. Hofmann, and S.S. Korban. 2004. Near-infrared microspectroscopy, infrared chemical imaging and high-resolution nuclear magnetic resonance analysis of soybean seeds, somatic embryos, and single cells. In: D.L. Luthria (ed.) *Oil Extraction and Quantitation Technologies: Critical Issues in Food, Feed, and Seed Analysis*. AOCS Press, Champaign, IL, pp. 241-282.

JOURNAL PUBLICATIONS (Refereed) (Selected from past five years) - CAREER TOTAL - 130

- Shulaev, V., S.S. Korban, B. Sosinski, A.G. Abbott, H. Aldwinckle, K.M. Folta, A. Iezzoni, D. Main, P. Arus, A. Dandekar, K. Lewers, S.K. Brown, T.M. Davis, S.E. Gardiner, and R.E. Veilleux. 2008. Multiple models for Rosaceae genomics. *Plant Physiology* DOI:10.1104/pp.107.115618 (in press).
- Han, Y. and S.S. Korban. 2008. An overview of the apple genome through BAC end sequence analysis. *Plant Molecular Biology* 67:581-588.
- Malnoy, M., M.L. Xu, E. Borejsza-Wysocka, S.S. Korban, and H.S. Aldwinckle. 2008. Two receptor-like genes, *Vfa1* and *Vfa2*, confer resistance to the fungal pathogen *Venturia inaequalis* inciting apple scab disease. *Molecular Plant-Microbe Interactions* 21: 448-458.

- Wisniewski, M.E., C.L. Bassett, T.S. Altip, J.L. Norelli, K. Gasic, and S.S. Korban. 2008. Expressed sequence tag analysis of the response of apple (*Malus × domestica*) to low temperature and water deficit. *Physiologia Plantarum* 133: 298-317.
- Wang, G., Y. Chen, J. Zhao, L. Li, S.S. Korban, F. Wang, J. Dai, M. Xu. 2008. Flanking-fragment display: a technique for isolating *Mu*-flanking fragments. *Journal of Genetics and Genomics* 35: 207-213.
- Han, Y., E. Bendik, F. Sun, K. Gasic, and S.S. Korban. 2007. Genomic isolation of genes encoding starch branching enzyme II (SBEII) in apple: Towards characterization of evolutionary disparity in *SbeII* genes between monocots and eudicots. *Planta* 226:1265-1276.
- Han, Y., K. Gasic, and S.S. Korban. 2007. Multiple-copy cluster-type organization and evolution of genes encoding O-methyltransferases in apple. *Genetics* 176: 2625-2635.
- Han, Y., K. Gasic, B. Marron, J.E. Beever, and S.S. Korban. 2007. A BAC-based physical map of the apple genome. *Genomics* 89: 630-637.
- Han, Y., F. Sun, S. Rosales-Mendoza, and S.S. Korban. 2007. Three orthologues in rice, *Arabidopsis*, and *Populus* encoding starch branching enzymes (SBE) are different from other *SBE* gene families in plants. *Gene* 401:123-130.
- Han, Y. and S.S. Korban. 2007. *Spring*: A novel family of miniature inverted-repeat transposable elements in the apple genome. *Genomics* 90:195-200.
- Gasic, K. and S.S. Korban. 2007. Transgenic Indian mustard (*Brassica juncea*) plants expressing an *Arabidopsis* phytochelatin synthase (*AtPCS1*) exhibit enhanced As and Cd tolerance. *Plant Molecular Biology* 64: 361-369.
- Gasic, K. and S.S. Korban. 2007. Expression of *Arabidopsis* phytochelatin synthase in Indian mustard (*Brassica juncea*) plants enhances tolerance for Cd and Zn. *Planta* 225: 1277-1285.
- Han, Y., K. Gasic, F. Sun, M.L. Xu, and S.S. Korban. 2007. A gene encoding starch branching enzyme I (SBEI) in apple (*Malus × domestica*, Rosaceae) and its phylogenetic relationship to *Sbe* genes from other angiosperms. *Molecular Phylogenetics and Evolution* 43: 852-863.
- Wang, G., Y. Chen, J. Zhao, L. Li, S.S. Korban, F. Wang, J. Dai, M. Xu. 2007. Mapping of defense response gene homologues and their association with resistance loci in maize. *Journal of Integrative Plant Biology* 49:1580-1598.
- Lim, H-S., T-S. Ko, H.A. Hobbs, K.N. Lambert, S.S. Korban, G.L. Hartman, and L.L. Domier. 2007. Expression of *Soybean mosaic virus* helper component-protease in transgenic soybean alters leaf morphology, virus symptom severity, and seed production in a dose-dependent manner. *Phytopathology* 97: 366-372.
- Naik, S., C. Hampson, K. Gasic, G. Bakkeren, and S.S. Korban. 2006. Development and linkage mapping of E-STS and RGAs for functional gene homologues in apple. *Genome* 49: 959-968.
- Lim, H-S., T-S. Ko, H.A. Hobbs, K.N. Lambert, S.S. Korban, G.L. Hartman, and L.L. Domier. 2005. *Soybean mosaic virus* helper component-protease enhances somatic embryo production and stabilizes transgene expression in soybean. *Plant Physiology and Biochemistry* 43:1014-1021.
- Schaefer, S., K. Gasic, B. Cammue, W. Broekaert, E.J.M. Van Damme, W.J. Peumans, and S.S. Korban. 2005. Enhanced resistance to early blight in transgenic tomato lines expressing heterologous plant defense genes. *Planta* 222: 858-866.
- Gasic K. and S.S. Korban. 2005. Nonspecific binding of monoclonal anti-FLAG M2 antibody in Indian mustard (*Brassica juncea*). *Plant Molecular Biology Reporter* 23: 9-16.
- Tatum, T., S. Stepanovic, D.P. Biradar, A.L. Rayburn, and S.S. Korban. 2005. Variation in nuclear DNA content in *Malus* species and cultivated apples. *Genome* 48: 924-930.
- Ko, T-S. and S.S. Korban. 2004. Enhancing the frequency of somatic embryogenesis following *Agrobacterium*-mediated transformation of immature zygotic cotyledons of soybean [*Glycine max* (L.) Merrill.]. *In Vitro Cellular & Developmental Biology-Plant* 40:552-558.
- Ko, T-S., R.L. Nelson, and S.S. Korban. 2004. Screening multiple soybean genotypes (MG 00 to MG VIII) for somatic embryogenesis following *Agrobacterium*-mediated transformation of immature cotyledons. *Crop Science* 44: 1825-1831.

- Han, Y., M. Xu, X. Liu, C. Yan, S.S. Korban, X. Chen, M. Gu. 2004. Genes coding for starch branching enzymes are major contributors to viscosity characteristics in waxy rice (*Oryza sativa* L.). *Plant Science* 166:357-364.
- Xu, M.L. and S.S. Korban. 2004. Somatic variation plays a key role in the evolution of the *Vf* gene family residing in the *Vf* locus that confers resistance to apple scab disease. *Molecular Phylogenetics and Evolution* 32:57-65.
- Gasic, K., A. Hernandez, and S.S. Korban. 2004. RNA extraction from different apple tissues rich in polyphenols and polysaccharides for cDNA library construction. *Plant Molecular Biology Reporter* 22: 437a-437g.
- Huaracha, E.M., M.L. Xu, E. Pauwels, A. Van den Putte, J.W. Keulemans, and S.S. Korban. 2004. Phenotypic reaction and genetic analysis using AFLP-derived SCARs for resistance to scab in apple. *Journal of Phytopathology* 152: 260-266.
- Huaracha, E., M. Xu, and S. Korban. 2004. Narrowing down the region of the *Vf* locus for scab resistance in apple using AFLP-derived SCARs. *Theor. Appl. Genet.* 108:274-279.
- Carr, J. and S.S. Korban. 2004. Evaluating genetic relationships in *Impatiens walleriana* using AFLP profiling. *Plant Breeding* 123: 577-581.
- Xu, M.L., X. Li, and S.S. Korban. 2004. DNA methylation alterations and exchanges during *in vitro* cellular differentiation in rose. *Theor. Appl. Genet.* 109:899-910.
- Ko, T-S., S. Lee, S.C. Schaefer, and S.S. Korban. 2003. Characterization of a tissue-specific and developmentally-regulated β -1,3-glucanase gene family in *Prunus persica*. *Plant Physiology and Biochemistry* 41: 955-963.
- Li, X., K. Gasic, B. Cammue, W. Broekaert, and S.S. Korban. 2003. Transgenic rose harboring an antimicrobial protein gene, *Ace-AMP1*, demonstrate enhanced resistance to powdery mildew (*Sphaerotheca pannosa*). *Planta* 218: 226-232.
- Lee, S., J.S. Moon, T-S. Ko, D. Petros, P.B. Goldsbrough, and S.S. Korban. 2003. Overexpression of *Arabidopsis thaliana* phytochelatin synthase (*AtPCS1*) paradoxically leads to hypersensitivity to cadmium stress. *Plant Physiology* 131:656-663.
- Xu, M. and S.S. Korban. 2002. A cluster of four receptor-like genes reside in the *Vf* locus that confers resistance to apple scab disease. *Genetics* 162:1995-2006.
- Xu, M. and S.S. Korban. 2002. AFLP-derived SCARs facilitate construction of a sequence-ready BAC contig of a 1.1 Mb segment that spans the *Vf* locus in the apple genome. *Plant Molecular Biology* 50:803-818.

POSTDOCTORAL RESEARCH ASSOCIATES - CAREER TOTAL - 18

- Dr. Danman Zheng – Postdoctoral Research Associate, genomics, Jan. 2008-present.
- Dr. Ruth Elena Soria-Guerra, Postdoctoral Research Associate, biotechnology, April 2007-present.
- Dr. Yuepeng Han, Postdoctoral Research Associate, genomics, August 2004-present.
- Dr. Sergio Rosales-Mendoza- Postdoctoral Research Associate, genomics, April 2007- April 2008.
- Dr. Ksenija Gasic, Postdoctoral Research Associate, molecular biology/genomics, Nov. 2001-Dec. 2007.

VISITING SCIENTISTS - CAREER TOTAL - 19

- Ms. Evelia Milan-Norris, visiting scholar, Universidad Autónoma de Sinaloa, Culiacan, Mexico. Plant molecular biology. July 23, 2007- September 9, 2007.
- Ms. Esmerelda Reyes Fernandez, visiting scholar, Universidad Autónoma de Sinaloa, Culiacan, Mexico. Plant molecular biology. July 23, 2007- September 9, 2007.

- Dr. Ruth Elena Soria-Guerra, visiting scholar, IPICYT, San Luis Potosí, Mexico. Plant molecular biology. Sept. 15, 2006 - Jan. 15, 2007.
- Dr. Sergio Rosales-Mendoza, visiting scholar, IPICYT, San Luis Potosí, Mexico. Plant molecular biology. Sept. 15, 2006 - Jan. 15, 2007.

MAJOR ADVISOR TO THE FOLLOWING GRADUATE STUDENTS – CAREER TOTAL

- 27

- Dong Ping - Ph.D. - 2008- present. Thesis topic: Analysis of effector proteins in *Erwinia amylovora* for resistance response in *Malus*. [co-advisor with Dr. Youfu Zhao]
- Sornkanok Vimolmangkang – Ph.D. - 2008-present. Thesis topic: Characterization and analysis of transcription factors in apple fruits.
- Sarah Potts - M.S. - 2008-present. Thesis topic: Developing a genetic map for the apple.
- Elise Bendik – M.S. – 2005-2007 (completed). Thesis Title: Response of diabetic mice to a plant-based vaccine against RSV.
- Sornkanok Vimolmangkang – M.S. – 2005-2007 (completed). Thesis Title: Transfer and expression of antigenic proteins against PRRSV in soybean.
- Joann Lau – Ph.D. - 2001-2007 (completed). Thesis Title: Developing an effective plant-based vaccine against the *Respiratory syncytial virus (RSV)*.

TEACHING

COURSES/LECTURES OFFERED - PAST TWO YEARS ONLY

HORT 482 - Plant Tissue Culture, Spring 2008 (guest lecture).
 BIOL 4099 – Ethics in Biotechnology, Fall 2007 (at York University, Toronto).
 CPSC 261 - Biotechnology in Agriculture, Spring 2007 (guest lecture).
 HORT 362 - Tree Fruit Production, Spring 2007.
 NUTRS 410 – Food Safety, Biotechnology, and GMOs . Spring 2007 (guest lecture).
 HORT 465 /CPSC 465/ANISCI 465– Ethics in Biotechnology, Fall 2006.

PUBLIC SERVICE & OTHER PROFESSIONAL ACTIVITIES

PRESENTATIONS/MEDIA PRESS/OTHER ACTIVITIES

- Contributed numerous presentations, invited talks, and interviews to TV, radio, and frequently featured in both electronic and print media.
- Served on numerous departmental, college, campus, national, and international committees.
- Organized/co-organized various symposia, colloquia, workshops, national and international conferences.

INTERNATIONAL ACTIVITIES - PAST TWO YEARS ONLY

2007

- Served as Canada-US Fulbright Distinguished Chair in the Department of Biology at York University, Toronto, Canada, for Fall semester, 2007.

2006

- Invited to visit the Katholieke University of Leuven (KUL) and serve as a jury member for a Ph.D. final defense, Leuven, Belgium, August 17-20, 2006.
- Invited to visit the Katholieke University of Leuven (KUL) to discuss collaborative projects and present seminars, Leuven, Belgium, June 24-July 5, 2006.
- Invited to visit the Universidade Federal de Santa Catarina and present seminars, and discuss joint research collaborations, Santa Catarina, Brazil, April 10-14, 2006.
- Co-organized the Pre-conference training workshop, 3rd International Rosaceae Genomics Conference, and post-conference US-NZ workshop; participating in workshop leadership and invited conference presentations, Auckland, Napier, and Palmerston North, New Zealand, March 13-22, 2006.