

Dr. STEPHEN L. GOLDMAN
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Education

B.A. Biology, Brooklyn College, 1963
M.S. Genetics, University of Missouri, 1967
Ph.D. Genetics, University of Missouri, 1968

Experience

From 1971 until 2007 I held a number of different faculty and administrative positions at the University of Toledo. These included Professor of Biology from 1976 until 2000, Professor of Environmental Science from 2000 until my retirement in 2007, and Director of the Plant Science Center from 1997 until the end of 2006. From 2000 until 2004 my responsibilities were increased and I was given the Directorships of both the Lake Erie Research and the Stranahan Arboretum until new directors could be named for each of these research and teaching facilities. My title during this time was Director of Plant and Environmental Research Centers.

Statement of Research Interests

My major research interests are in the areas of: (1) design and construction of rapid, high output rapid transformation systems in monocots and dicots (2) mechanisms of genetic recombination in corn and yeast; (3) production of biofuels and and biopharm products in cereals and legumes (4) phytoremediation mechanisms.

The patent-protected ability to couple high frequency DNA transfer to single cells that can be rapidly regenerated into fertile, sexually reproducing plants allows for plants to be efficiently manipulated as bioreactors for the production of pharmaceuticals, for protection of the food chain through soil remediation of toxic heavy metals, and for the novel production of biofuels.

Recent Publications

Wissam, Abou Alawai, Puthiyaparambil Chacko Josekutty, **Stephen Lawrence Goldman**, Shobha Devi, Rudrabhatla Venkata Sairam, . 2011. Efficient *in vitro* propagation of Centaurea Montana L. 2011. Propagation of Ornamental Plants. 11:(1) 40-43

Hem Bhandari, Masumi Ebina, Malay, Saha, Joseph Bouton, R.V. Sairam, **Stephen L. Goldman**, 2011. *Panicum*, pp: 175-196. In Kole, C.: Wild Crop Relatives: Genomic and Breed Sources: Millets and Grasses, Springer

Sadia B, PC Josekutty, SD Potlakayla, P Patel, **S Goldman**, SV Rudrabhatla. (2010) An efficient protocol for culturing meristems of sorghum hybrids. International Journal of experimental Botany, 0031: 9457 177-181

Goldman, S.L. Sairam R.V., Muszynski, M., Scott, P., 2010. Flowering Network and the Perfection of Seed Quality, In: Kole, C., Hall, T.C. et al., (eds), A Compendium of Transgenic Crop Plants. Volume 2, pp 167-198, Wiley Blackwell,pubs.

Sairam R.V., Al-Abed, D., Johnson, J., Muszynski, M., Raab, M., Reddy, T.V. and **S. L. Goldman**, 2008. Maize. In: Kole, C., Hall, T.C. et al., (eds), A Compendium of Transgenic Crop Plants. Volume 1, pp 49-82.: Transgenic Cereals and Forage Grasses. Wiley-Blackwell Publishing

Shulu Zhang, Rudrabhatla V. Sairam, Doni Grefer, James Feasal, Mark Ferencak, **Stephen Goldman** 2009. Resistance to *Xanthomonas campestris* pv. *pelargonii* in geranium and diagnosis of the bacterial blight using polymerase chain reaction. Archives of phytopathology and Plant Protection. 42: (12): 1109-1117.

Shulu Zhang, Rudrabhatla V. Sairam, Doni Grefer, James Feasal, Mark Ferencak, **Stephen Goldman** 2009. Exogenous methyl jasmonate inhibits the spread/multiplication of *Xanthomonas campestris* pv. *pelargonii* in the leaves of *Pelargonium x hortorum*. Archives of Phytopathology and Plant Protection 42: (10) 930-939.

Diaa-Alabed, Parani Madasamy, Reddy Tala, **Stephen Goldman**, Sairam Rudrabhatla 2007 Genetic engineering of maize with Arabidopsis DREB/CBF3 Gene using the split seed explant. Crop Science 47:2390-2402

Diaa-Alabed, Sairam Rudrabhatla, Reddy Tala, **Stephen Goldman**. 2006 Split Seed: A new tool for maize researchers. Planta 223:1355-1360.

Rudrabhatla, Sairam, Siva Chennareddy, Madasamy Parani, Shulu Zhang, Diaa Al-Abed, Wissam Abou-Alaiwi and **Stephen Goldman** 2005. Ohio Plant Biotechnology Consortium (OPBC) Symposium: Maize 2004 and Beyond- Plant Regeneration, Gene Discovery, and Genetic Engineering of Plants for Crop Improvement. In vitro Cell. Dev. Biol. Plant 41:411-423.

Madasamy Parani, R. V. Sairam, Rachel Myers, Heatherbea Weirich, Bruce Smith, Douglas W. Leaman, **S.L. Goldman**. 2004. Microarray analysis of nitric oxide responsive transcripts in arabidopsis. Plant Biotechnology Journal, 2:359-356,

Sairam, R.V., Franklin, G., Carpenter, L., Al.Abed, D., Abou Alawai, W., Parani, M., **Goldman, S.L.** 2004. Factors influencing regeneration of soybean from mature and immature cotyledons. Plant Growth Regulation – 43:1, 73-79.

R.V.Sairam, G. Franklin, R. Hassel, B. Smith, K. Meeker, N. Kashikar, M. Parani, D. Al. Abed, S. Ismail, K. Berry & **S.L. Goldman**. 2003. A study on the effect of genotypes, plant growth regulators and sugars in promoting plant regeneration via organogenesis from soybean cotyledonary nodal callus. Plant Cell, Tissue and Organ Culture : 75: 79-85.

R.V. Sairam, M. Parani, G. Franklin, Z.Lifeng, B. Smith, J.MacDougall, C. Wilber, H. Sheikhi, N.

Kashikar, K. Meeker, D. Al-Abed, K. Berry, R. Vierling, and **S.L. Goldman**, 2003, Shoot meristem: An ideal explant for *Zea mays* (L.) transformation: *Genome*, 46:323-329

R.V. Sairam, C. Wilber, J. Franklin, B. Smith, J. Bazil, R. Hassel, D. Whaling, K. Frutiger, C.A. Blakey, R. Vierling, and **S.L. Goldman**, 2002, High frequency callus induction and plant regeneration in *Tripsacum dactyloides* (L.) : *In Vitro Cell. Dev. Biol.-Plant*, v. 38, p. 435-440.

Blakey, C.A., **S.L. Goldman** and C.L. Dewald, 2001, Apomixis in *Tripsacum* – comparative mapping of a multigene phenomenon: *Genome*, v. 44, p. 222-230.

J. Faghihi, X. Jiang, R. Vierling, **S. Goldman**, S. Sharfstein, J. Sarver and P. Erhardt, Chromatographic fingerprints obtained from two soybean cultivars and a selected progeny: *Journal of Chromatography A*, no. 915, p. 61-64.

Bula, R.J., R.A. Vierling and **S.L. Goldman**, 2000, Genetic engineering in a microgravity environment: *Chemical Innovation*, v. 30, n. 1, p. 30-33.

Blakey, C.A., C.L. Dewald and **S.L. Goldman**, 1997, Co-segregation of DNA Markers with *Tripsacum* Fertility: *Maydica*, v. 42, p. 363-369.

Goldman, S.L. and G.G. Doyle, 1995, An analysis of the relationship between recombination frequency and coincidence in maize: *Maydica*, v. 40, p. 23-33

Issued Patents

R.V. Sairam and Goldman, S.L. 2009. A method for producing *In Vitro* flowering in a plant and plants produced therefrom. U.S. Patent Number 7,547,548

Goldman, S.L. and A.C.F. Graves, 2000, Process for Transforming Graminae and the Products Thereof. U.S. Patent Number 6,020,539.

Goldman, S.L. and A.C.F. Graves, 1993, Process for Transforming Corn and the Products Thereof. U.S. Patent Number 5,177,010.

Goldman, S.L. and A.C.F. Graves, 1993, Process for Transforming Graminae and the Products Thereof. U.S. Patent Number 5,187,073.
U.S. Patent Number 5,187,073.

Goldman, S.L., P. Chee, A.C.F. Graves and J. Slightom, 1994, *Agrobacterium* Mediated Transformation of Germinating Plant Seeds. U.S. Patent Number 5,376,543.

Goldman, S.L., P. Chee, A.C.F. Graves and J. Slightom, 1994, *Agrobacterium* Mediated Transformation of Germinating Plant Seeds. Patent Number 0397687 (Europe).

Goldman, S.L., P. Chee, A.C.F. Graves and J. Slightom, 1994, *Agrobacterium* Mediated Transformation of Germinating Plant Seeds. Patent Number 648,951 (Australia).

Patents Pending

Parani Madasamy, R.V. Sairam and Goldman, S.L. US Patent Pending 2005. A novel transcription factor (Petcbf4) that is induced by cold, drought and salinity stress in plants.

SELECTED GRANTS

09/24/01-09/23/06, Stephen L. Goldman, R.V. Sairam: USDA/ARS, *Enhancing greenhouse soilless culture production*. **\$2,843,000**

09/15/01-09/14/05, Stephen L. Goldman, R.V. Sairam: USDA/AUB-Lebanon, *Partnership for Pharmaceutical and economic development of wild Lebanese plants*. **\$902,262**

09/01/03-08/31/05, R.V. Sairam and Stephen L. Goldman: USDA, *Agrobacterium mediated transformation of forage grasses- Festuca and Lolium*. **\$92,992**

09/15/04-09/14/05, R.V. Sairam and Stephen L. Goldman: USDA, *Agrobacterium mediated transformation of forage grasses- Pearl millet.*, **\$82,813**

07/01/03-06/30/05, R.V. Sairam, Stephen L. Goldman: OPBC, *Maize Transformation.*, \$79,983

2000-2002 Tripsacum Germplasm Development. USDA (**\$ 93, 550**)

2000-2002 Germplasm development in forage grasses. USDA (**\$ 93, 394**)

1999-2001 Plant and Microbe Functional Genomics Facilities. Ohio Board of Regents Hayes Investment Fund (**\$1,400,000**) Stephen L. Goldman, Principal Investigator, University of Toledo, R. Tabita, Principal Investigator, Ohio State University, Allen Showalter, Principal Investigator, Ohio University Hayes Investment Fund (**\$340,000**) S.L. Goldman Principal Investigator

1999-2000 Production of human interest products (HIPS) in transgenic soybean hulls, Ohio Soybean Council (**\$61,224**)

1999-2002 MU transposon tagging and cloning of meiotic pairing genes in maize, U.S. Department

