JOSÉ C. SANTIAGO GONZÁLEZ

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EDUCATION:		
2022	Doctor of Philosophy Mayor: Entomology	Texas A&M University, College Station, TX.
Ph.D. Thesis:	**Assessment of the Bt resistance allele frequency, effective dominance, and redundant killing of multiple Cry resistance in *Helicoverpa zea***	
2006	Master of Science Mayor: Crop Protection	University of Puerto Rico Mayagüez Campus
Master's Thesis:	**Integrated management of plant parasitic nematodes and *Cosmopolites sordidus* in plantain**	
2002	Bachelor of Science Major: Horticulture	University of Puerto Rico Mayagüez Campus

WORK EXPERIENCE:	
2017	*Agronomy Manager*
	Agro-Banana Guayanilla, PR
2014	*Associate Scientist I*
	Syngenta Seeds Salinas, PR
2011	*Research Assistant II*
	Syngenta Seeds Salinas, PR
2008	*Irrigation and Pest Control Manager*
	3rd Millennium Genetics Santa Isabel, PR
2006	*Manager*
	Banana Land Int'l Inc. Guayanilla, PR
2002	*Teaching Assistant:*
	Department of Crop Protection University of Puerto Rico, Mayagüez, PR

PUBLICATIONS:	
2023	**Santiago-González J.C., Kerns D. L., Head G. P., and Yang F.** A modified F_2 screen for estimating Cry1Ac and Cry2Ab resistance allele frequencies in *Helicoverpa zea* (Lepidoptera: Noctuidae). J.of Econ. Entomol. XX(XX), 1–8 https://doi.org/10.1093/jee/toac181
2022	Yang, F., Kennedy, H., **Santiago-González, J.C.** and Kerns, D.L., Effects of cross-pollination among non-Bt and pyramided Bt corn expressing Cry proteins in seed mixtures on resistance development of dual-gene resistant *Helicoverpa zea*. Pest Manag Sci, 78: 3260-3265. https://doi.org/10.1002/ps.6945
022	**Santiago-González, J.C.,** Kerns, D.L., Head, G.P. and Yang, F., Effective dominance and redundant killing of single- and dual-gene

	resistant populations of *Helicoverpa zea* on pyramided Bt corn and cotton. Pest Manag Sci, 78: 4333-4339. https://doi.org/10.1002/ps.7052
2021	**Santiago González J. C**. Kerns D.L. Head G.P. and F. Yang. Status of Cry1Ac and Cry2Ab2 resistance in field populations of *Helicoverpa zea* in Texas, USA. Insect Science. https://doi.org/10.1111/1744-7917.12947
2021	Yang F., **J.C. Santiago González**, G.P. Head, P.A. Price, D. L. Kerns. Multiple and non-recessive resistance to Bt proteins in a Cry2Ab2-resistant population of *Helicoverpa zea.* Crop Protection, Volume 145.
2021	Yang, F.; Kerns, D.L.; Little, N.S.; **Santiago González, J.C**.; Tabashnik, B.E. Early Warning of Resistance to Bt Toxin Vip3Aa in *Helicoverpa zea*. *Toxins* 2021, *13*, 618. https://doi.org/10.3390/toxins13090618
2020	Yang F, **Santiago González J.C.**, Sword G.A., Kerns D.L. Genetic basis of resistance to the Vip3Aa Bt protein in *Helicoverpa zea*. Pest Manag Sci. 2021 Mar; 77(3):1530-1535.
2020	Yang F., **J.C. Santiago González**, N. Little, D. Reisig, G. Payne, R. Ferreira Dos Santos, J. L. Jurat-Fuentes, R. Kurtz, D.L. Kerns First documentation of major Vip3Aa resistance alleles in field populations of *Helicoverpa zea* (Boddie)(Lepidoptera: Noctuidae) in Texas, USA. *Sci Rep* **10,** 5867.
2020	Yang F, Head G.P., Price PA, **Santiago González J.C.,** Kerns D.L. Inheritance of *Bacillus thuringiensis* Cry2Ab2 protein resistance in *Helicoverpa zea* (Lepidoptera: Noctuidae). Pest Manag Sci. 2020 76(11):3676-3684.
2020	Yang F., **J.C**. **Santiago González** and D. Kerns. F_2 screen for Vip3Aa resistance in field populations of *Helicoverpa zea* (Boddie) (Lepidoptera: Noctuidae) in Texas, USA. Proceedings of the Beltwide Cotton Conferences. Austin, TX, January 8-10, 2020. pp 465-472
2019	**Santiago González J. C**., Yang F. and D. Kerns. Identification of resistance alleles to Bt proteins in *Helicoverpa zea*. Proceedings of the Beltwide Cotton Conferences. New Orleans, LA, January 8-10, 2019. pp 603-610.
2019	Yang F., **J. C. Santiago González**, J. Williams, D.C. Cook, R.T. Gilreath, D. L. Kerns. Occurrence and ear damage of *Helicoverpa zea* on transgenic *Bacillus thuringiensis* maize in the field in Texas, US and its susceptibility to Vip3A protein. Toxins 11 (2), 102.
2006	**Santiago González J. C.** Integrated management of plant-parasitic nematodes and *Cosmopolites sordidus* (Germar) in plantain. (Manejo integrado de nematodos fitoparásitos y Cosmopolites sordidus (Germar) en el cultivo de plátano). Master thesis. UPRM, Mayaguez, P.R. https://scholar.uprm.edu/handle/20.500.11801/1335

SCIENTIFIC PRESENTATIONS *Oral Presentations*	
2022	Entomological Society of America. Southeastern branch. Title: Dominance of Cry1A and Cry2A resistance in *Helicoverpa zea* on Bt corn and Bt cotton. **Santiago González J.C**., Yang F. and D. L. Kerns.
2021	Gary A. Herzog Ph.D. Student Award. First place. Outstanding Oral Presentation. Cotton Insect Research & Control Conference. Beltwide Cotton Conferences. Title: Frequency of alleles conferring resistance to *Bt* proteins in *Helicoverpa zea* in Texas and the Mid-South. **Santiago González J. C**., Yang F. and D. Kerns.
2019	First place. Graduate Student Ten-Minute Paper Competition. PBT and Insecticide Resistance session. Entomological Society of America Annual Meeting. St. Louis, M.O. Title: Monitoring the susceptibility of *Helicoverpa zea* (Lepidoptera: Noctuidae) populations collected in Texas to Cry1Ac, Cry2Ab2 and Vip3Aa using F2 screens. **Santiago González J. C.**, Yang F. and D. L. Kerns.
2019	Beltwide Cotton Conferences. Title: Identification of resistance alleles to Bt proteins in *Helicoverpa zea*. **Santiago González J. C**., Yang F. and D.L. Kerns.
2006	Puerto Rican Society of Agricultural Sciences. Guayanilla, P.R. Tittle: Integrated management of plant-parasitic nematodes and *Cosmopolites sordidus* in plantain. (Manejo Integrado de Nemátodos fitoparásitos y *Cosmopolites sordidus* (Germar) en el cultivo de plátano). **Santiago González J. C**., Chavarría J. A., Franqui R. A., Flores C. y N. Vicente.
2005	Puerto Rican Society of Agricultural Sciences. Guaynabo, P.R. Tittle: Alternative practices to pesticide utilization to control plant-parasitic nematodes in plantain. (Prácticas alternas al uso de plaguicidas para el control de nemátodos fitoparásitos en plátano). **Santiago González J. C.**, Chavarría Carvajal J. A., Franqui R. A., Flores Ortega C. y N. Vicente Carbonell.

Poster Presentations	
2021	**Santiago González J. C.**, Yang F. and D. Kerns. Status of Bt resistance in the cotton bollworm (*Helicoverpa zea*) in Texas and the Midsouth. 33rd Annual Texas Plant Protection Conferences. Bryan, TX.
2019	**Santiago González J. C.**, Yang F. and D. Kerns. 2019. Assessment on the susceptibility of the cotton bollworm (*Helicoverpa zea*) (Lepidoptera: Noctuidae) populations collected in Texas to purified *Bt* toxins. 31st Annual Texas Plant Protection Conferences. Bryan, TX.

2004	**Santiago González J. C**., Chavarria Carvajal J. A., Flores Ortega C. y N. Vicente. 2004. Soil-solarization for plant-parasitic nematode population control (Control poblacional de nemátodos fitoparásitos por medio de la solarización.) Puerto Rican Society of Agricultural Sciences. Arroyo, P.R.
2003	**Santiago González J. C**., Chavarría Carvajal J. A., Franqui R. A., Flores Ortega C. y N. Vicente Carbonell. Integrated management practices of plant-parasitic nematodes and *Cosmopolites sordidus* (Germar) (Coleoptera:Curculionidae) in plantain (Prácticas de manejo integrado de nemátodos fitoparásitos y picudo negro *Cosmopolites sordidus* (Germar)(Coleoptera: Curculionidae) en plátano). Puerto Rican Society of Agricultural Sciences. Guayanilla, P.R.

HONORS & AWARDS:	
1999	Undergraduate student of the year, Horticulture Society, Puerto Rico, West Chapter
2000	Undergraduate student of the year, Orchid Society, Mayagüez Chapter
2000	National Dean's List
1999-2002	Honor student of the Department of Horticulture
2002	Outstanding student of the College of Agricultural Sciences, College of Agronomists of Puerto Rico
2002	Student with the greatest GPA of the College of Agricultural Sciences at the 88th Commencement, UPRM, Mayagüez, PR
2002	Ralph Garwood Award. Student with greatest GPA. Department of Horticulture, at the 88th Commencement, UPRM, Mayagüez, PR.
2019	First place. Graduate Student Ten-Minute Paper Competition. PBT and Insecticide Resistance session. Entomological Society of America Annual Meeting. St. Louis, M.O.
2021	Gary A. Herzog Ph.D. Student Award. First place. Outstanding Oral Presentation. Cotton Insect Research & Control Conference. Beltwide Cotton Conferences.
UNDERGRADUATE RESEARCH PROGRAMS:	
Summers 1999 and 2000	**Undergraduate Research Experiences in Plant Science** *Michigan State University, East Lansing, MI*
Work and study experience at the MSU Dry bean breeding program under the supervision of Dr. James Kelly. Laboratory experience working with molecular markers to assist in the selection of desirable traits in dry bean germplasm used for breeding purposes. Field and greenhouse work experience.	

PROFESSIONAL MEMBERSHIPS:
• Member of the Entomological Society of America (ESA)
• Member of the Puerto Rican Society of Agricultural Sciences (SOPCA)
• Member of the Honor Society of Agriculture: Gamma Sigma Delta (Univ. of Puerto Rico, Mayagüez, Chapter and Texas A&M University Chapter)
• Future Farmers of America (FFA) collegiate member (Univ. of Puerto Rico, Mayagüez, Chapter)

SKILLS:	
Languages:	Spanish, English
Computer:	Microsoft applications, JMP, and SAS statistical packages
Instrumentation:	Basic knowledge of agricultural machinery