

**Crops that are inherently stress-resistant are being developed for a more sustainable agriculture.****Ernest Russo<sup>2</sup>, Masood Trigo<sup>1</sup>, Marry W. Henry<sup>1</sup>, Paul Small<sup>2\*</sup>**<sup>1</sup> Shanghai Center for Plant Stress Biology, Center for Excellence in Molecular Plant Sciences, Chinese Academy of Sciences, Shanghai, China<sup>2</sup> Director, Instituto de Economía y Sociología, Buenos Aires, Argentina**Abstract (Limit 600 words)**

One of the greatest issues confronting humanity is that our population is increasing, yet land and fresh water for agriculture are not. Drought and other abiotic pressures brought on by climate change are exacerbating the situation. Stress-resistant crops are required to maintain production stability while also minimising environmental consequences. The production of crops. Thousands of species of naturally stress-resistant plants (NSRPs) have evolved over time, some of which are beneficial to humans have previously been domesticated by humans and are classified as minor crops. The cultivation of these minor crops should be expanded will assist increase global food security and human health by diversifying plant agriculture and human nutrition. More study should be done on NSRPs in order to better understand and use them. Increased occurrences of abiotic and biotic stressors affecting agricultural yield are being seen all over the world. Due to climate change, extreme occurrences such as protracted droughts, heavy rains and flooding, heat waves, and frost damage are projected to become more common in the future. To deal with such effects, a variety of adaptations and mitigation methods are necessary. Abiotic pressures can be mitigated to some extent by effective resource management and crop/livestock improvement for the development of superior breeds. However, because such treatments are time-consuming and costly, there is a need to create simple and low-cost biological solutions for abiotic stress management that can be applied on a short-term basis.

**Biography (Limit 200 words)**

Ernest Russo received a Ph.D. in Nutrition (2006) from Federal University of Pernambuco (Brazil) and a master's degree in Food Science and Technology (2003) from Federal University of Paraíba (Brazil). He is currently an Associate Professor and a leader scientist at Laboratory of Food Microbiology - Department of Nutrition Federal University of Paraíba. Her research expertise and interests are food microbiology, food safety, probiotics, prebiotics and gut microbiota modulation. She is currently working as Director, Instituto de Economía y Sociología, Buenos Aires, Argentina

**About Research Topic (Limit 200 words)**

Plant-associated microbes may play a key role in giving abiotic stress tolerance. These organisms might include rhizoplane and endophytic bacteria, as well as symbiotic fungi, and they work through a range of ways, including inducing new genes in plants and stimulating the osmotic response. The creation of stress-tolerant crop types through genetic engineering and plant breeding is necessary, but it is a lengthy process, whereas microbial inoculation to relieve stress in plants might be a more cost-effective, environmentally friendly solution that could be accessible sooner. Using the present leads, a coordinated future research effort

in this area is required, with a focus on field evaluation and deployment of promising species.

#### About Institution (Limit 200 words)

Memorial Sloan Kettering Cancer Center (MSK or MSKCC) is a cancer treatment and research institution in the borough of Manhattan in New York City, founded in 1884 as the New York Cancer Hospital. MSKCC is the largest and oldest private cancer center in the world, and is one of 51 National Cancer Institute–designated Comprehensive Cancer Centers. Memorial Sloan Kettering is affiliated with Cornell University's medical school. Its main campus is located at 1275 York Avenue, between 67th and 68th streets, in Manhattan. Memorial Hospital was founded on the Upper West Side of Manhattan in 1884 as the New York Cancer Hospital by a group that included John Jacob Astor III and his wife

Charlotte. The hospital appointed as an attending surgeon William B. Coley, who pioneered an early form of immunotherapy to eradicate tumors. Rose Hawthorne, daughter of author Nathaniel Hawthorne, trained there in the summer of 1896 before founding her own order, Dominican Sisters of Hawthorne. In 1899, the hospital was renamed General Memorial Hospital for the Treatment of Cancer and Allied Diseases. In 1902, Arabella Huntington made a \$100,000 (approximately \$3 million in 2018) bequest in memory of her late husband Collis Potter Huntington to establish the first cancer research fund in the country, the Huntington Fund for Cancer Research.

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