


# CYNTHIA ORTÍZ ROBLES

RESEARCH ASSISTANT, CIMMYT MEXICO

My research interests lie in agricultural biotechnology. I have acquired knowledge and skills in improving crop productivity under biotic and abiotic stresses through the integration of basic and applied research. I have high proficiency to perform linkage and association mapping. In addition, I have also managed and supervised several field trials in different locations across Mexico. This has generated new pre-breeding materials with positive traits to add to breeding programs. Thus, I want to contribute to teams that explore solutions to global hunger challenges under a climate change scenario, especially by using innovative scientific approaches and sustainable solutions.

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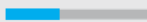



## PERSONAL

Birthday : March 8<sup>th</sup>, 1989  
Relationship : Single  
Nationality : Mexican  
Languages : Spanish, English, French

## SKILLS

Reason and problem solve   
Communicate   
Use math and science   
Data analysis   
Teamwork   
Leadership 

## SOFTWARE

R Programming   
Kyzma - JoinMap   
TASSEL   
ICIM (QTL IciMapping) 

## REFERENCE

### Kevin V. Pixley

Director, Genetic Resources Program  
CIMMYT, Mexico  
k.pixley@cgjar.org  
Phone: +52 (595) 952 1900, ext. 1397

### Sivakumar Sukumaran

Scientist, Wheat Physiology & Seeds  
of Discovery  
Global Wheat Program CIMMYT, Mexico  
s.sukumaran@cgjar.org  
Phone: +(55) 5804 2004, ext. 2277

## EXPERIENCE

### Associate Research Assistant

September 2016-to date

GENETIC RESOURCES PROGRAM.  
SEED OF DISCOVERY (SEED)  
INITIATIVE, CIMMYT MEXICO.

Job responsibilities; Establish experimental designs and conduct greenhouse-field experiments for phenotypic characterization into a wheat pre breeding strategy. Wheat phenotypic data collection associated with yield and rust disease under drought, heat and favorable environments. Select and make strategic crosses in wheat pre breeding program. Statistical and genetic analysis of phenotypic data. Handling genotypic data coming from GBS and DArTseq platforms. Genetic mapping of QTLs in wheat biparental populations. Genome-wide association mapping of pre-breeding materials. Coordination of research support staff. Editions of peer review research articles. Support and train exchange students.

### Biotechnology Assistant

March to November 2013

GENETIC RESOURCES PROGRAM.  
SEED OF DISCOVERY (SEED)  
INITIATIVE, CIMMYT MEXICO.

Job responsibilities; Collection of phenotypic data associated with yield and rust disease in wheat trails. Generate field books through the IWIS-NT CIMMYT system for phenotypic data collection. Coordinate national and international seed shipments. Coordinate the tissue collection of the different field and green house trials. Molecular techniques. PCR analysis. DNA extractions and quality analysis. Standardization of molecular markers (Agarose, PAGE, SDS-PAGE) in different wheat populations. Amplicon purification or sequencing.

## EDUCATION

### M.Sc. Plant Biotechnology

2014-2016

Centro de Investigación y de Estudios Avanzados del Instituto Politécnico Nacional. CINVESTAV, Mexico.

Mentor: Dr. Beatriz Xoconostle Cazares (CINVESTAV) and Dr. Sukhwinder Singh (CIMMYT).

Thesis: Mapping QTLs for phenology and grain yield related traits in bread wheat.

### BSc. Biotechnology Engineer

2007-2012

Unidad Profesional Interdisciplinaria de Biotecnología.

Instituto Politécnico Nacional. UPIBI - IPN, Mexico.

Awarded a degree with honors.

## INTERNATIONAL SCIENCE NETWORKS

**Global Community Bio Summit – Grant membership.** Organized by the MIT Media Lab and the Community Biotechnology Initiative. Massachusetts Institute of Technology, Boston 2019.

**Leader ALLBIOTECH – Grant.** Latin American Summit of Young Leaders in Biotechnology. Santiago de Chile, 2017 and Guanajuato Mexico, 2018. Current active member, Mexico Ambassador.

**Plant Sciences Symposia Series.** Corteva Agriscience - DowDuPont. Mexico 2016 and 2018. Current active member.

## AWARD AND HONOR RECEIVED:

**MasAgro Biodiversidad- Seeds of Discovery, CIMMYT-Scholarship**, M.Sc. studies, International Maize and Wheat Improvement Center, Mexico. 2015-2016.

**CONACYT Fellowship**, M.Sc. studies, Centro de Investigación y de Estudios Avanzados del Instituto Politécnico Nacional, Mexico. 2014-2016.

**Procter & Gamble Company – Scholarship**, professional bachelor's stay in Plant Engineering area (Line manager), Mexico. 2011-2012.

**Harp Helú Excellence Scholarship**. Student Member of Academic Excellence Program - IPN. Mobility to the National School of Biological Sciences. Instituto Politécnico Nacional. 2010-2011.

**Institutional Program for Research Training**, PIFI – Trainee student member. Instituto Politécnico Nacional. Participation in research activities within the institute in Plant Molecular Biology. 2011.

## PUBLICATIONS IN PEER REVIEWED JOURNALS AS CO\_AUTHOR

- Sukhwinder Singh, D. Sehgal, S. Kumar, M.A.R. Avirf, P. Vikram, C. P. Sansaloni, G. Fuentes- Davila, and [C. Ortiz](#). ***GWAS revealed a novel resistance locus on chromosome 4D for the quarantine disease Karnal bunt in diverse wheat pre-breeding germplasm***. Nature Scientific Reports - 2020. 10:5999.
- Lourdes Ledesma-Ramírez, Ernesto Solís-Moya, Gabriel Iturriaga, Deepmala Sehgal, Manuel H. Reyes-Valdes, Victor Montero-Tavera, Carolina P. Sansaloni, Juan Burgueño, [Cynthia Ortiz](#), César L. Aguirre-Mancilla, Juan G. Ramírez-Pimentel and Prashant Vikram and Sukhwinder Singh. ***\*GWAS to identify genetic loci for resistance to yellow rust in wheat pre-breeding lines derived from diverse exotic crosses***. Frontiers in Plant Science - Oct 2019. (DOI: 10.3389/fpls.2019.01390)
- Sukhwinder Singh, Prashant Vikram, Deepmala Sehgal, Juan Burgueño, Achla Sharma, Sanjay K. Singh, Carolina P. Sansaloni, Ryan Joynson, Thomas Brabbs, [Cynthia Ortiz](#), Ernesto Solís-Moya, Velu Govindan, Naveen Gupta, Harminder S. Sidhu, Ashwani K. Basandrai, Daisy Basandrai, Lourdes Ledesma-Ramires, Maria P. Suaste-Franco, Guillermo, Fuentes-Dávila, Javier I. Moreno, Kai Sonder, Vaibhav K. Singh, Sanjay Singh, Sajid Shokat, Mian A. R. Arif, Khalil A. Laghari, Puja Srivastava, Sridhar Bhavani, Satish Kumar, Dharam Pal, Jai P. Jaiswal, Uttam Kumar, Harinder K. Chaudhary, Jose Crossa, Thomas S. Payne, Muhammad Imtiaz, Virinder S. Sohu, Gyanendra P. Singh, Navtej S. Bains, Anthony Hall\_&\_Kevin V. Pixley. ***\*Harnessing genetic potential of wheat germplasm banks through impact-oriented prebreeding for future food and nutritional security***. Nature Scientific Reports - 2018. 8:12527.
- Kevin V Pixley, Gilberto E Salinas-Garcia, Anthony Hall, Martin Krop, [Cynthia Ortiz](#), Laura CS Bouvet, Ankita Suhalia, Prashant Vikram and Sukhwinder Singh. ***\*CIMMYT's Seeds of Discovery Initiative: Harnessing Biodiversity for Food Security and Sustainable Development***. Indian Journal of Plant Genetic Resources - 2018. (DOI: 10.5958/0976-1926.2018.00001.3)
- Prashant Vikram, Jorge Franco, Juan Burgueno-Ferrera, Huihui Li, Deepmala Sehgal, Carolina Saint Pierre, [Cynthia Ortiz](#), Clay Sneller, Maria Tattaris, Carlos Guzman, Carolina Paola Sansaloni, Guillermo Fuentes-Davila, Mathew Reynolds, Kai Sonders, Pawan Kumar Singh, Thomas Payne, Peter Wenzl, Achla Sharma, Navtej Singh Bains, Gyanendra Pratap Singh, José Crossa & Sukhwinder Singh. ***\*Unlocking the genetic diversity of creole wheats***. Nature Scientific reports - 2016. 6:23092.
- Deepmala Sehgal, Prashant Vikram, Carolina Paola Sansaloni, [Cynthia Ortiz](#), Carolina Saint Pierre, Thomas Payne, Marc Ellis, Ahmed Amri, César Daniel Petrolí, Peter Wenzl, Sukhwinder Singh. ***\*Exploring and mobilizing the gene bank biodiversity for wheat improvement***. PLoS One - 2015. (DOI: 10.1371/journal.pone.0132112).

## CONFERENCES AND WORKSHOPS ATTENDED:

**2019: Oral presentation:** "Gene Bank Diversity, the key for food security and sustainable development on modern crop breeding." Bio Summit, Massachusetts Institute of Technology.

October 10-13th. Boston, USA.

**2017: Oral presentation:** "The future of the field". ALLBIOTECH - First Latin American Summit of Young Leaders in Biotechnology. October 12-13th. Santiago, Chile.

**2017: Oral presentation:** "The value of exotic germplasm in breeding lines: The key in the development of wheat varieties resistant to climate change". MasAgro Biodiversity-General Meeting. August 30th. CIMMYT Mexico.

**2016: Oral & Poster presentation.** "Genotyping-by-Sequencing characterization of bread wheat for mapping of yellow rust resistance QTLs". 1st International Agrobiodiversity Congress. November 6-9th. New Delhi, India.

**2016: Oral presentation:** "Mapping quantitative trait loci of stripe rust resistance in bread wheat population". XII International symposium on plant biotechnology. April 5-8th. IBP - Caibarien, Cuba.

**2016: Oral presentation.** "Mapping QTLs for phenology and grain yield related traits in a biparental population of bread wheat". IV International Congress and XVIII National Congress of Agricultural Sciences. April 20-22th. Universidad Autónoma Chapingo, Mexico.

**2015: Molecular atlas Workshop.** "Aprovechamiento de los Atlas Moleculares de Maíz y Trigo". MasAgro-Biodiversidad. CIMMYT Batán, Mexico.

**2015: Course:** Phenotyping of wheat for identifying germplasm with high yield potential and tolerance to drought and heat. MasAgro-Biodiversidad. CIMMYT Cd. Obregón, Sonora, Mexico.