

## Ivan Lopez-Valdivia

---

CONTACT INFORMATION	The Pennsylvania State University Department of Plant Science 310 Tyson Building, University Park, PA 16802	<i>Phone:</i> +18146992735 <i>E-mail:</i> iul116@psu.edu <i>Google Scholar:</i> Access here <i>Webpage:</i> Lopez-Valdivia
EDUCATION	<b>The Pennsylvania State University (PSU)</b> , University Park, PA, USA  Ph.D., Agricultural and Environmental Plant Science, Defending on April 2024 <ul style="list-style-type: none"><li>• Thesis Proposal: <i>Exploring the fitness landscape of root traits across maize domestication.</i></li><li>• Advisor: Dr. Jonathan Lynch</li></ul> <b>National Laboratory of Genomics for Biodiversity (LANGEBIO)</b> , Irapuato, GTO, Mexico  M.S., Plant Biotechnology, November 2019 <ul style="list-style-type: none"><li>• Thesis: <i>Caracterización de raíces milenarias de maíz provenientes de Tehuacán: comparación con poblaciones actuales del género Zea.</i></li><li>• Advisor: Dr. Rafael montiel and Dr. Jean Philippe Vielle-Calzada</li></ul> <b>Autonomous University of Aguascalientes (UAA)</b> , Aguascalientes, AGS, Mexico  B.S., Biotechnology, December 2016 <ul style="list-style-type: none"><li>• Thesis: Construcción de un vector de expresión en plantas con el gen de resistencia a factores abióticos (LEA) proveniente de cactáceas.</li><li>• Advisor: Dr. José Francisco Morales Domínguez</li></ul>	
WORK EXPERIENCE	<b>Graduate Research Assistant</b> , National Laboratory of Genomics for Biodiversity (LANGEBIO)	2019 to 2021
AWARDS AND FELLOWSHIPS	<b>Walter Thomas Memorial Scholarship</b> by the College of Agricultural Sciences, PSU. 2021-2023	
TEACHING EXPERIENCE	<b>Teaching Assistant</b> , The Pennsylvania State University HORT 402: Plant Nutrition	Fall, 2021-2023
REFEREED JOURNAL PUBLICATIONS	1.1 <b>Lopez-Valdivia I</b> ; Xiyu Yang; Jonathan P. Lynch. (2023). Large root cortical cells and reduced cortical cell files improve growth under suboptimal nitrogen in silico. <i>Plant Physiology</i> DOI: <a href="https://doi.org/10.1093/plphys/kiad214">https://doi.org/10.1093/plphys/kiad214</a>  1.2 Miguel Vallebuena-Estrada; Guillermo G. Hernández-Robles; Eduardo González-Orozco; <b>Lopez-Valdivia I</b> ; Teresa Rosales Tham; Víctor Vásquez Sánchez; Kelly Swarts; Tom D. Dillehay; Jean-Philippe Vielle-Calzada; Rafael Montiel.	

(2023) Domestication and lowland adaptation of coastal preceramic maize from Paredones, Peru. *eLife*  
DOI: <https://doi.org/10.7554/eLife.83149>

- 1.3 **Lopez-Valdivia I**, Alden Perkins, Hannah Schneider, Miguel Vallebuena-Estrada, James Burrige, Eduardo González-Orozco, Aurora Montufar, Rafael Montiel, Jonathan Lynch, Jean-Philippe Vielle-Calzada. (2022) Gradual domestication of root traits in the earliest maize from Tehuacan. *PNAS*  
DOI: <https://www.pnas.org/doi/full/10.1073/pnas.2110245119>

PUBLICATIONS IN PEER-REVIEW 2.1 **Sidhu JS, Lopez-Valdivia I**, Strock CF, Schneider HM, & Lynch JP. Cortical cell wall thickness regulates root metabolic cost and improves plant performance under drought stress. <https://doi.org/10.1101/2023.09.29.560009> Under revision at *PNAS*.

MANUSCRIPTS IN PREPARATION, drafts available on request 3.1 **Lopez-Valdivia I**, Miguel Vallebuena-Estrada, Rangarajan H, Sidhu JS, & Lynch JP. Root evolution during maize domestication.  
3.2 **Lopez-Valdivia I**, Rangarajan H, Sidhu JS, & Lynch JP. Reciprocal transplanting in silico of eight maize landraces from the Americas.  
3.3 Sidhu JS, Walker SC, **Lopez-Valdivia I**, Gill HS, Rangarajan H, Sehgal SK, & Lynch JP. Polyploidy induced root anatomical changes impact plant performance under edaphic stress conditions

CONFERENCE TALKS 4.1 **Lopez-Valdivia I**, Xiyu Yang, Jonathan Lynch (2023) Exploring the fitness landscape of maize and wheat root systems in silicon. CIMMYT WebCast. Texcoco, Mexico. ([Watch here](#)).  
4.2 **Lopez-Valdivia I**, Alden Perkins, Hannah Schneider, Miguel Vallebuena-Estrada, James Burrige, Eduardo Gonzalez-Orozco, Aurora Montufar, Rafael Montiel, Jonathan Lynch, Jean Philippe Vielle-Calzada (2021) Gradual domestication of root traits in the earliest maize from Tehuacan. 11th Symposium of the International Society of Root Research, Columbia, Missouri, US. ([Watch here](#)).  
4.3 **Lopez-Valdivia I**, Alden Perkins, Hannah Schneider, Miguel Vallebuena-Estrada, James Burrige, Eduardo Gonzalez-Orozco, Aurora Montufar, Rafael Montiel, Jonathan Lynch, Jean Philippe Vielle-Calzada (2019) Reconstruccion 3D de raices milenarias y su importancia para entender la domesticacion del maiz. 6th International Congress. Cultural heritage and new technologies. INAH TV, Queretaro, Mexico. ([Watch here](#)).

PROFESSIONAL SERVICE **Professional Society Service**

- *Steering Committee Member*, Center for Root and Rhizosphere Biology at PSU (2023).
- *Referee*, Plant and Soil Journal (2023).

MEDIA "Getting to the root of corn domestication; knowledge may help plant breeders"  
"Encuentran la clave de cómo se domesticó el maíz moderno a partir del teosinte"  
For more details please visit: [ilovaldivia.github.io/Lopez-Valdivia/news.html](https://ilovaldivia.github.io/Lopez-Valdivia/news.html)