Rubén Rellán Álvarez

- **e-mail**: rrellan@langebio.cinvestav.mx
- **website**:www.rrlab.com
- **twitter**: @rrellanalvarez
- **Github**: github.com/rellan

Last updated: November-24-2015

Career Summary and Education

Current Position:

Assistant Professor
National Laboratory of Genomics and Biodiversity, Cinvestav (2015-Present)
Irapuato, Guanajuato. México.

Previous:

- **Postdoc** Department of Plant Biology (2012-2014) Carnegie Institution for Science at Stanford
  Advisor: José Ramón Dinneny
  Research Topic: Development of new methods to visualize root system architecture and gene expression of plants growing in soil.
- **PhD**: Plant Biology, Department of Plant Nutrition (2005-2011) Aula Dei Experimental Station, Zaragoza, Spain *Advisor*: Javier Abadía and Ana Álvarez-Fernández
  Research Topic: Long distance transport of iron and metabolomics of iron deficiency
- **MSc** Plant Biotechnology, Dept. of Biology (2002-2005) Universidad Autónoma de Madrid *Advisor*: Luis Eduardo Hernández in collaboration with Ana Álvarez-Fernández *Research Topic:* Heavy metal and oxidative stress
- **BS** Environmental Sciences (1998-2002) Universidad Autónoma de Madrid

Fellowships and Awards

- ASPB Annual Scientific Meeting Travel Award. Portland, Oregon (2014)
- Marschner Young Scientist Award. International Plant Nutrition Colloquium. Istanbul. Turkey (2013)
- ASPB Western Section Meeting Travel Award. Davis, California (2013)
- Postdoctoral Fellowship for Foreign Researchers (2012) Japanese Society for the

Promotion of Science. (Declined)
- Long Term Postdoctoral Fellowship (2011) Federation of European Biochemical Societies. (Declined)
- Doctorate Extraordinary Price, Biology (2011) Autonomous University of Madrid.
- FPI PhD Fellowship (2005-2009). Spanish Ministry of Science.

Grants

- Conacyt Ciencia Básica Young Investigator. Natural Variation of lipid organization upon phosphorus deficiency. (PI, $ 90,000 USD)

Scientometrics Summary

- 20 Publications (2 Reviews)
- 1000 citations
- 9 first authorships
- h-index: 16
- h10: 18

More bibliographical info can be found here:

- Orcid-ID
- Google Scholar Webpage

Selected publications organized by research themes.

Root Biology

- **Rellán-Álvarez R**, Lobet G, Dinneny J.R. (2016) Environmental control of Root System Biology Annual Rev Plant Biol. 67
- **Rellán-Álvarez R**, Lobet G, Hildner H, Pradier PL, Sebastian J, Yee MC, Yu G, La Rue T, Trontin C, Schrager A, Haney C, Nieu R, Maloof J, Vogel J, Dinneny JR (2015) GLO-Roots: an imaging platform enabling multidimensional characterization of soil-grown roots systems eLife 4:e07597 PubMed, Github repo

Long Distance Iron Transport and Metal Speciation

- Schüler M, **Rellán-Álvarez R**, Fink-Straube C, Abadía J, Petra Bauer (2012) New functions of nicotianamine in the phloem-based transport of iron to sink

organs, in pollen development and in pollen tube growth. Plant Cell 24: 2380-2400 PubMed

- **Rellán-Álvarez R**, Giner-Martínez-Sierra J, Orduna J, Orera I, Rodríguez-Castrillón JA, García-Alonso JI, Abadía J, Álvarez-Fernández A (2010) Identification of a tri-iron(III), tri-citrate complex in the xylem sap of iron-deficient tomato resupplied with iron: new insights into plant iron long-distance transport. Plant Cell Physiol. 51: 91-102 PubMed
- **Rellán-Álvarez R**, Abadía J, Álvarez-Fernández A (2008) Formation of metal-nicotianamine complexes as affected by pH, ligand exchange with citrate and metal exchange. A study by electrospray ionization time-of-flight mass spectrometry. Rapid Commun Mass Spectrom 22: 1553-1562 PubMed

Metabolomics of the iron deficiency and resupply response

- Rellán-Álvarez R**, El Jendoubi H, Wohlgemuth G, Fiehn O, Abadía A, Abadía J, Álvarez Fernández A (2011) Metabolite profile changes in xylem sap and leaves of Strategy I plants in response to iron deficiency and iron resupply. Frontiers Plant Science 2: 66 PubMed
- **Rellán-Álvarez R**, Andaluz S, Rodríguez-Celma J, Wohlgemuth G, Zocchi G, Álvarez-Fernández A, Fiehn O, López-Millán AF, Abadía J (2010) Changes in the proteomic and metabolic profiles of Beta vulgaris root tips in response to iron deficiency and resupply. BMC Plant Biol. 10: 120 PubMed

Development of metabolite targeted profiling methods

- **Rellán-Álvarez R**, López-Gomollón S, Abadía J, Álvarez-Fernández A. (2011) Development of a new high-performance liquid chromatography electrospray ionization time-of-flight mass spectrometry method for the determination of low molecular mass organic acids in plant tissue extracts. J Agric Food Chem 59: 6864-6870 PubMed
- **Rellán-Álvarez R**, Hernández LE, Abadía J, Álvarez-Fernández A (2006) Direct and simultaneous determination of reduced and oxidized glutathione and homoglutathione by liquid chromatography-electrospray/mass spectrometry in plant tissue extracts. Anal Biochem. 356: 254-264 PubMed

Heavy metal and oxidative stress in plants

- **Rellán-Álvarez R**, Ortega-Villasante C,Álvarez-Fernández A, Del Campo FF,

Hernández LE (2006) Stress responses of *Zea mays* to cadmium and mercury. Plant Soil. 249: 41-50

- Ortega-Villasante C, **Rellán-Álvarez R**, Del Campo FF, Carpena-Ruíz RO, Hernández LE (2005) Cellular damage induced by cadmium and mercury in Medicago sativa. J Exp Bot. 56: 2239-2251 PubMed.

Selected conferences talks and invited seminars

Root Imaging

- XVI National Congress of Biochemistry and Plant Molecular Biology, IX Simposium Mexico-USA Queretaro, México. (2015). **Invited Seminar** Towards a root system level understanding of how plants adjust root function and shape and integrate heterogeneous environmental cues. **Selected Talk**
- Rhizosphere 4, Maastricht, The Netherlands. (2015). **Roundtable Organization** Emerging technologies for root systems scale imaging and phenotyping.
- Instituto de Biotecnología, UNAM, Cuernavaca, México. (2015). **Invited Seminar** Multidimensional mapping of root responses to soil environmental cues using a luminescence-based imaging system.
- BASF 2014 Symposium on Unlocking Yield Potential in Soil. Limburgerhof, Germany (2014). **Invited Seminar**
- Annual Scientific Meeting of the American Society of Plant Biology. Portland, USA (2014). **Rellán-Álvarez R**, Muh-Ching Y, Pradier PL, Winfield E, Geng Y, Dinneny J. The Ground Truth: Understanding Root Physiology in Soil Using a Novel Imaging Platform. **Selected Talk**
- PAG XXII Plant Phenotypes Workshop. San Diego, USA (2014). **Rellán-Álvarez R**, Muh-Ching Y, Winfield E, Geng Y, Dinneny J. Growth and Luminescence Observatory of Roots (GLO-Roots) A platform for the Analysis of Root Structure and Physiology in Soil **Invited Seminar**
- XVII International Plant Nutrition Colloquium, Istanbul, Turkey (2013) Rellán-Álvarez R Growth and Luminescence Observatory of Roots (GLO-Roots) A platform for the Analysis of Root Structure and Physiology in Soil. **Invited presentation. (Marschner Young Scientist Award)**
- 30th Annual IPG Symposium on Root Biology, Columbia, Missouri. USA (2013) **Rellán-Álvarez R**, Muh-Ching Y, Geng Y, Dinneny J. Growth and

Luminescence Observatory of Roots (GLO-Roots) A platform for the Analysis of Root Structure and Physiology in Soil. **Selected Talk**

Long Distance Iron Transport and Metal Speciation

- 3rd Japan-China Joint Workshop on Plant Nutrition, Kurashiki, Japan. (2011) **Rellán-Álvarez R**, Vázquez S, Álvarez-Fernández A, Abadía J. Iron xylem transport, the long and short of it. **Invited Talk**
- XVIII Reunión de la Sociedad Española de Fisiología Vegetal. XI Congreso Hispano-Luso de Fisiología Vegetal, Zaragoza, Spain (2009). Rellán-Álvarez R, Giner-Martínez-Sierra J, Orduna J, Orera I, Rodríguez-Castrillón JA, García-Alonso JI, Abadía J, Álvarez-Fernández A. Iron is transported as a tri-Fe(III), tri-citrate complex in plant xylem sap. **Selected Talk**

Metabolomics of the iron deficiency and resupply response

- XV International Symposium on Iron Nutrition and Interactions in Plants, Budapest, Hungary (2010). **Rellán-Álvarez R**, El Jendoubi H, Wohlgemuth G, Abadía A, Fiehn O, Abadía J, Álvarez- Fernández A. Delving into iron deficiency metabolomics. **Selected Talk**
- XVI International Plant Nutrition Colloquium. Sacramento, California, USA (2009) **Rellán-Álvarez R**, Andaluz S, Álvarez-Fernández A, Fiehn O, López-Millán AF, Abadía J. Changes in the proteomic and metabolic profiles of Beta vulgaris root tips in response to iron deficiency and resupply **Keynote**