Imtiyaz Khanday

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Google Scholar Profile

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PUBLICATIONS

1. **Imtiyaz Khanday*,** Christian Santos-Medellín and Venkatesan Sundaresan (2023) Somatic embryo initiation by rice BABY BOOM1 involves activation of zygote-expressed auxin biosynthesis genes. *New Phytologist* 238:673–687. doi: https://doi.org/10.1111/nph.18774 ***Lead and corresponding author**

2. Bushra Rasool, Baby Summuna, …… **Imtiyaz Khanday,** Upendra Kumar, Parvaze Ahmad Sofi, Mohd Anwar Khan, Mohd Ashraf Bhat, Fehim Jeelani Wani, Mahendar Thudi, and Reyazul Rouf Mir (2023) Delineating Marker-trait Associations for Fusarium Wilt in Chickpea using Axiom® Cicer SNP Array. *Phytopathology* ahead-of-print doi: https://doi.org/10.1094/PHYTO-05-22-0164-FI

3. Aurore Vernet, Donaldo Meynard, ….. **Imtiyaz Khanday***, Raphael Mercier, Venkatesan Sundaresan and Emmanuel Guiderdoni (2022) High-frequency synthetic apomixis in hybrid rice. *Nature Communications* 13:7963. doi: 10.1038/s41467-022-35679-3 ***Co-corresponding author**

4. Reagan C. Reed, Kent J. Bradford and **Imtiyaz Khanday*** (2022) Seed germination and vigor: ensuring crop sustainability in a changing climate. *Heredity* https://doi.org/10.1038/s41437-022-00497-2 ***Corresponding author**

5. **Imtiyaz Khanday** and Venkatesan Sundaresan (2021) Plant zygote development: recent insights and applications to clonal seeds. *Current Opinion in Plant Biology* 59: 101993 https://doi.org/10.1016/j.pbi.2020.101993

6. **Imtiyaz Khanday**, Debra Skinner, Bing Yang, Raphael Mercier and Venkatesan Sundaresan (2019) A male-expressed rice embryogenic trigger redirected for asexual propagation through seeds. *Nature* 565:91–95 doi:10.1038/s41586-018-0785-8

7. Sarah N. Anderson, Cameron S. Johnson*, Joshua Chesnut*, Daniel S. Jones*, **Imtiyaz Khanday***, Margaret Woodhouse, Chenxin Li, Liza J. Conrad, Scott D. Russell, Venkatesan Sundaresan (2017) The Zygotic Transition Is Initiated in Unicellular Plant Zygotes with Asymmetric Activation of Parental Genomes. *Developmental Cell* 43:349–358, DOI: 10.1016/j.devcel.2017.10.005. (***Co-second author**)

8. **Imtiyaz Khanday**, Sanjukta Das, Grace L. Chongloi, Manju Bansal, Ueli Grossniklaus and Usha Vijayraghavan (2016) Genome-wide targets regulated by OsMADS1 transcription factor reveals its DNA recognition properties. *Plant Physiology* 172: 372-388, http://dx.doi.org/10.1104/pp.16.00789.

9. Liza J. Conrad, **Imtiyaz Khanday**, Cameron Johnson, Emmanuel Guiderdoni, Gynheung An, Usha Vijayraghavan and Venkatesan Sundaresan (2014) The polycomb group gene EMF2B is essential for maintenance of floral meristem determinacy in rice. *The Plant Journal* 80: 883–894, doi: 10.1111/tpj.12688

10. **Imtiyaz Khanday**, Shri Ram Yadav and Usha Vijayraghavan (2013) Rice *LHS1/OsMADS1* Controls Floret Meristem Specification by Coordinated Regulation of Transcription Factors and Hormone Signaling Pathways. *Plant Physiology* 161:1970-1983, doi/10.1104/pp.112.212423

11. Shri Ram Yadav, **Imtiyaz Khanday**, Bharat Bhusan Majhi, Karuppannan Veluthambi and Usha Vijayraghavan (2011) Auxin-Responsive *OsMGH3*, a Common Downstream Target of OsMADS1 and OsMADS6, Controls Rice Floret Fertility. *Plant Cell Physiol.* 52(12): 2123-2135, doi:10.1093/pcp/pcr142

PATENT PUBLICATIONS

1. **Imtiyaz Khanday**, Venkatesan Sundaresan (2018) Induction of Haploid Plants Using BABY BOOM1 Gene. PCT/US2017/063249 (WO2018098420A1).

2. **Imtiyaz Khanday**, Venkatesan Sundaresan (2019) Synthetic Apomixis in a Crop Plant. PCT/US2018/062663 (WO2019104346A1).

SCIENTIFIC PEER REVIEW

Journal reviews: Communications Biology, The Plant Journal, Plant Cell Reports, Theoretical and Applied Genetics, Journal of Plant Growth Regulation, Plants, AoB Plants, Biologia Plantarum, International Journal of Plant Sciences, Plant Reproduction

TEACHING

2023 **Instructor PLS 171** Plant Propagation undergraduate course, Department of Plant Sciences, University of California-Davis.

2019-present **Co-Instructor: PBI200B** plant development core course for graduate students at Department of Plant Biology, University of California-Davis.

ORGANIZATIONAL INVOLVEMENT

1. Member International Society for Seed Science since July 2021
2. Associate Faculty Member, Faculty Opinions (formerly Faculty of 1000, *F1000*) since January 2018.
3. Member American Society of Plant Biologists (ASPB) since 2019.
4. Member International Association of Sexual Plant Reproduction Research (IASPRR) 2015 - 2018.

SCIENTIFIC MEETINGS - ORAL PRESENTATIONS

1. **Understanding embryo initiation and its translation into engineering clonal seeds**
   Integrated Genetics and Genomics Gradute Group seminar series, UC Davis (January 30, 2023).
2. **Synthetic apomixis: are clonal seeds coming to the farmer's field?**
   Simon Chan Celebration Symposium, UC Davis, (January 19, 2023).
3. **Propagation of Hybrid Rice with Clonal Seeds Using Synthetic Apomixis**
   Plant and Animal Genome 30 Conference (January 13-18, 2023), San Diego, California.
4. **Seed development: from embryo initiation to engineering clonal seeds**
   5th International Conference on CRISPR Technologies, Berkeley, USA (October 31 - November 2, 2022).
5. **Synthetic apomixis: enabling crop propagation through clonal seeds**
   CGIAR - IGI Symposium, Innivative Genomics institute, Berkeley (Virtual), (May 24–25, 2022).
6. **Clonal propagation of hybrid crops: making breeder's dream come true**
   82nd Annual Convention of California Seed Association, Ojai Valley, California USA (March 12-15, 2022).
7. **Clonal seeds: lessons from plant zygote development**
   Department of Horticulture and the Department of Plant, Soil, and Microbial Sciences, Michigan State University (MSU) East Lansing, Michigan, USA (February 10, 2022)
8. **Translating Embryo Initiation into Clonal Propagation of Crops**
   Plant Biology Graduate Group (PBGG) Friday seminar, UC Davis (January 21st, 2022).
9. **Synthetic Apomixis for Hybrid Crop Propagation**
   Plant and Animal Genome XXVIII Conference (January 11- 15, 2020), San Diego, California.
10. **Embryo Initiation and Synthetic Apomixis in Crop Plants**
    Department of Plant Biology, University of Georgia, Athens, USA, 07 January, 2020.
11. **Embryo initiation and clonal seed propagation in rice.**
    Plenary Speaker: 17th International Symposium of Rice Functional Genomics, Taiwan (November 4-6, 2019).
12. **Embryo initiation in rice by male-genome expressed BABY BOOM transcription factors**
    Conference 'plantbiology2019' from American Society of Plant Biologists (ASPB), San Jose, California, August 2019.

13. **Creating Hybrids Without Hybridization in Crops**
    National Laboratory of Genomics for Biodiversity, UGA Langebio Cinvestav Irapuato, Mexico, June 19, 2020.
14. **Synthetic Apomixis: Making a Breeder's Dream Come True!**
    Plant Breeding Annual Retreat of Dept. of Plant Sciences, UC Davis at UC Davis Bodega Bay Marine Lab, December 16-17, 2019.
15. **Virgin Births and Clonal Seed Production in Crop Plants**
    Central University of Kashmir, Ganderbal, Jammu and Kashmir, July 2019.
16. **The seeds of no sex: Engineering apomixis in crop plants**
    Indian Institute of Science, Bangalore, India (July 2019).
17. **Understanding Embryo Initiation for Engineering Apomixis in Crop Plants**
    University of Kashmir, Srinagar, Jammu and Kashmir (June 2019).
18. **Embryo Development and Synthetic Apomixis in Rice**
    Plant Genetics Seminar series, University of California-Davis (May 2019).
19. **Embryo Initiation and Clonal Seed Propagation in Rice**
    Plant Biology Retreat at Granlibakken Tahoe, California, USA (November 2018).
20. **Transcriptome Analysis and Genes Involved in Maternal to Zygotic Transition in Rice**
    Plant Biology Symposium, Point Reyes California, USA (October 2016).
21. **The art of generating rice mutants using CRISPR-Cas9 system**
    University of California-Davis (September 2015).
22. **Rice *OsMADS1* controls floret meristem specification by coordinated regulation of transcription factors and hormone signalling pathways**
    The 80th annual conference of Society for Biological Chemists in India (SBCI) at Lucknow, India (November 2011).

PRESS & SCIENCE COMMUNICATION

Invited blog post for The Node: It's the Father! Paternally expressed BABY BOOM1 initiates embryogenesis in rice. The Node is a part of the journal Development (Company of Biologists, UK)

Press coverage of the research:

Seed Quest	**Science Magazine**	**Daily Democrat**
SciTechDaily	**Science Times**	**Others**
UC Davis News	ScienceDaily	Plantae
Science news	Nature Asia	le Scienze
The Indian Express	PHYS.ORG	The Aggie
Business Standard	Seed Quest	Others

IGI Paper Delivery Outreach Video: Rice that reproduces as a clone is agricultural breakthrough