

Singha Raj Dhungana

CURRICULUM VITAE

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CONTACT INFORMATION

Division of Biological Sciences
University of Missouri
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CURRENT POSITION

Graduate Research Assistant 2017 - Present
Division of Biological Sciences, University of Missouri
Supervisor: Dr. David M. Braun

EDUCATION

University of Missouri, Columbia, MO 2016 - Present
Doctor of Philosophy, Biological Sciences
Thesis Advisor: Dr. David M. Braun
Truman State University, Kirksville, MO 2014
Bachelor of Science, Biology
Northern Virginia Community College, Annandale, VA 2012
Associate of Science, Science

RESEARCH OVERVIEW

Primary project:
Dissecting the genetic basis of carbohydrate partitioning in maize (*Zea mays*) using molecular, physiological, genetic, and genomic methods. Two families of mutants exhibiting defects in carbohydrate partitioning are currently being characterized. Genes identified from this project may be future targets for crop improvement for increasing yield and bio-fuel production.

Collaborative projects:
Identification and annotation of gene families involved in sucrose transport in wild and modern species of *Saccharum sp.* (sugarcane) using in silico analyses to understand the major sucrose transporters which may contribute to high sugar content in modern sugarcane cultivars.

Understanding the effect of altered cell wall and sugar content on *Sorghum bicolor* (sorghum)-associated pathogenic bacteria (*Xanthomonas*) to reveal the mechanisms underlying tolerance to pathogens and impact of bioenergy relevant traits on pathogen susceptibility. Currently, involved in assessing sugar and starch content under various infection conditions in various sorghum accessions.

PEER-REVIEWED PUBLICATIONS

Zhang, J., Zhang, X., [et al, including Dhungana, S.R. and Braun, D.M.] (2018). Allele-defined genome of the autopolyploid sugarcane *Saccharum spontaneum* L. **Nature Genetics**, 50(11), 1565.
Khangura, R.S., Venkata, B.P., [et al, including Dhungana, S.R. and Braun, D.M.] (2019) Interaction between induced and natural variation at *oil yellow1* delays reproductive maturity in maize, **G3**

PROFESSIONAL PRESENTATIONS

4/2019 MU Life Sciences Week, Columbia, MO (poster presentation)
3/2019 Maize Genetics Conference, St. Louis, MO (poster presentation)
2/2019 MU Plant Research Symposium, Columbia, MO (poster presentation)
5/2018 IPG 35th Annual Symposium, Columbia, MO (poster presentation)

	4/2018	MU Life Sciences Week, Columbia, MO (poster presentation)
	3/2018	ASPB Midwestern Section Annual Meeting, Ames, IA (poster presentation)
	4/2014	Truman State University 27th Annual Student Research Conference, Kirksville, MO (poster presentation)
	3/2014	ASPB Midwestern Section Annual Meeting, Columbus, OH (poster presentation)
TEACHING EXPERIENCE	FS2016/FS2017	Bio_Sc 2200, GENERAL GENETICS (Teaching Assistant)
	SP2017/SP2018	Bio_Sc 2300, CELL BIOLOGY (Teaching Assistant)
WORK EXPERIENCE	Research Assistant	06/2014 -08/2016
	<i>Mediomics LLC, St. Louis, Missouri</i> <ul style="list-style-type: none"> ➤ Planed and performed experiments for producing raw materials for kits used in quantitative assay of biologically and therapeutically important macromolecules. ➤ Performed quality control of assay kits and reagents. ➤ Optimized and developed protocols for improving protein yield ➤ Developed assay kit prototypes for detecting various immunoglobulins based on patented technologies ➤ Audited records and documents as internal auditor for ISO 9001:2008 compliance and performed market research and advertising campaigns for company products. ➤ Maintained and updated the company website 	
LEADERSHIP, SERVICE & OUTREACH	MU Nepalese Student Association – President	9/2019 - Present
	<i>University of Missouri, Columbia, Missouri</i> Organized various cultural programs highlighting the culture and festivals of Nepal with the involvement of Nepalese community in Columbia and surrounding areas	
	MU Plant Research Symposium – Organizing Committee	4/2019 - Present
	<i>University of Missouri, Columbia, Missouri</i> Involved in planning and organizing the MU Plant Research Symposium 2020	
	MU Plant Research Symposium – Judge, Poster Session	2/2019
	<i>University of Missouri, Columbia, Missouri</i> Reviewed and judged posters in the symposium	
	IPG Plant Talks - Organizer	12/2018 - Present
	<i>University of Missouri, Columbia, Missouri</i> Organized biweekly scientific talks on plant research featuring works of graduate students and post-docs	
	Freshman Research in Plant Sciences (FRIPS) Speaker	2018 & 2019
	<i>University of Missouri, Columbia, Missouri</i> Presented talks regarding research in plant science and journey to graduate school to Freshmen pursuing interest in plant research	
	Missouri Maize Center at South Farm Showcase	2017-2019
	<i>Columbia, Missouri</i> Attended to display stalls during the annual South Farm Showcase event and spoke to visitors/ general audience about maize, its history, modern varieties and the research on maize at MU	
	Namaste Nepal: Nepalese Student Cultural Organization	08/2012- 05/2014
	<i>Truman State University, Kirksville, Missouri</i>	

Served as the Secretary and Webmaster of the organization and assisted in keeping meeting records, facilitating communications, organizing cultural and dining events, as well as, updating and maintaining organization's website.

GRANTS & FELLOWSHIPS	2013	Gerhardt Summer Science Research Fellowship Program (\$3000)
SCHOLARSHIPS & AWARDS	2014	Max E. Bell Scholarship (\$300)
	2012-2014	International Presidential Honorary Scholarship (\$6000/year)
	2012-2014	Phi Theta Kappa Scholarship (\$1000/year)
MEMBERSHIPS	American Association for the Advancement of Science (AAAS)	2017 – Present
	Biology Graduate Student Association (BGSA)	2016 - Present
	University of Missouri	
	Interdisciplinary Plant Group (IPG)	2016 - Present
	University of Missouri	
	Missouri Maize Center (MMC)	2016 - Present
	University of Missouri	
	Beta Beta Beta Biological Honor Society	2013 - 2014
	Truman State University	
	Phi Kappa Phi Honor Society	2012 - Present
	Truman State University	
	Phi Theta Kappa Honor Society	2011 - Present
	Northern Virginia Community College	
RESEARCH SKILLS	Wet Lab Skills:	
	PCR, Cloning, Electrophoresis, Plasmid and genomic DNA extractions, Fluorescent in-situ hybridization, High Performance Anion Exchange Chromatography, Protein purification and modification, Development of FRET based assays	
	Computational skills:	
	Whole genome sequencing and variant calling, RNA-Seq analysis, Genome annotation, Cluster computing	
CERTIFICATIONS	Internal Quality System Auditor (ISO 9001:2008)	
	Certified by Missouri Enterprise for completion of Internal Quality System Auditor Introductory Course	