

May 14, 2018

Editorial Board,  
Applications in Plant Sciences,  
Botanical Society of America.

I am writing to apply for the reviewing editor board position in Applications for Plant Sciences. I am a research associate (post-doc) in Chad Niederhuth lab at the Department of Plant Biology, Michigan State University. My research in the Niederhuth lab involves understanding epigenomic variation across plant species through an evolutionary perspective using comparative and population epigenomics. Previously, I worked on differential gene expression and comparative genomic analysis of gene families across maize and its relatives during cold stress response. My Ph.D. work on soybeans in Sally Mackenzie lab at the University of Nebraska, Lincoln is providing valuable insights into understanding the potential of using MSH1-derived epigenetic variation in developing lines with enhanced yield and yield stability.

The research that I have been involved in has given me proficiency in plant breeding techniques, molecular cloning, genetics, plant transformation, abiotic stress assays, bioinformatics skills, RNA-seq analysis, DNA methylation analysis, and programming with R and shell scripts. I have authored five peer-reviewed articles, three articles under review in various journals (including two invited reviews), and four manuscripts under preparation. Experiences gained during writing, editing, submission, and revision of all these articles along with peer-review for multiple journals (four independent peer-reviews and three joint peer-reviews) have provided me with a very good understanding of the scientific publishing enterprise. Through participation in scientific conferences and workshops, particularly CSHL plant course, and volunteering for professional societies (CSHL Plant course social media coordinator and ASPB ambassador), I have built a vast scientific network which I believe provides an advantage as an editor. I actively engage with scientists on social media platforms that help me keep updated about the current happenings in plant sciences. I am a proponent of pre-prints and have posted my first authored papers on pre-print servers before journal publications.

The APPS reviewing editor position seems to be a great opportunity for my career since I envision staying in academia and training in this position will certainly broaden my understanding of the scientific publishing process. It is important for researchers in early career stage to learn the art of peer-review and understand the role of journal editors as enforcers of scientific rigor in publishing. This is the motivation behind my application for this program. I believe it is essential to learn the framework of publishing from experienced journal editorial board members and reviewers at an early stage of my career so that I can be a better editor and be of service to the scientific community. I have reviewed three articles with my mentors and have gained valuable feedback on the best practices while reviewing papers and how to critically evaluate a work without being mean or asking unreasonable experimental validations. As an independent reviewer, I have peer-reviewed four manuscripts. I requested feedback on my reviews from two editors. Their feedback was helpful in understanding editor's expectations. These experiences and my interest in giving back to the scientific community make me an ideal candidate for this position.

I have enclosed my curriculum vitae, let me know if you need any additional information. Thank you for your time and consideration.

Regards,  
Sunil Kumar Kenchanmane Raju

Dr. Sunil Kumar Kenchanmane Raju  
 Postdoctoral fellow – Niederhuth lab  
 Dept of Plant Biology,  
 Michigan State University, East Lansing, MI  
 402-219-4562  
 kenchanm@msu.edu, kenchanmane@gmail.com

<b>EDUCATION</b>	Ph.D. (Plant Breeding and Genetics) Dept of Agronomy and Horticulture, University of Nebraska – Lincoln, Nebraska.	<b>2012 –2017</b> (GPA: 3.86)
	Master of Science (Biotechnology) Dept of Biotechnology and Bioinformatics, Kuvempu University, Shimoga, India.	<b>2005 –2007</b> (A grade)
	Bachelor of Science (Botany, Chemistry, Biotechnology) Sahyadri Science College, Kuvempu University, Shimoga, India.	<b>2002 –2005</b> (First class)
<b>RESEARCH EXPERIENCE</b>	<b>Research Associate – Dept of Plant Biology, Michigan State University</b>	<b>2018 -</b>
	Understanding epigenomic variation across plant species through an evolutionary perspective using comparative and population epigenomics.	
	<b>Postdoctoral fellow – Plant Science Innovations, University of Nebraska</b>	<b>2017 - 2018</b>
	Differential gene expression and comparative genomic analysis of gene families across maize and its relatives during cold stress response.	
	<b>Graduate Research Assistant, University of Nebraska – Lincoln.</b>	<b>2012 - 2017</b>
	Utilizing the potential of <i>MSHI</i> -derived non-genetic variation in soybean improvement. Understanding transcriptome and methylome changes in <i>msh1</i> mutants under prolonged cold stress and their role in <i>MSHI</i> -derived enhanced growth.	
	<b>Research Associate, University of Agricultural Sciences, Bangalore, India.</b>	<b>2009 - 2011</b>
<b>Junior Research Fellow, Sir MVIT College, Bangalore, India.</b>	<b>2008-2009</b>	
<b>Research Assistant, IBAB, Bangalore, India.</b>	<b>2007-2008</b>	
<b>MSc thesis project, University of Agricultural Sciences, Bangalore, India.</b>	<b>2007</b>	
Molecular characterization of selected recombinant inbred lines of rice ( <i>Oryza sativa</i> L.) using trait specific DNA markers.		
<b>TEACHING EXPERIENCE</b>	<b>Guest lecturer</b> , (two classes) Professional Development, UNL, Lincoln.	<b>Fall 2017</b>
	<b>Teaching Assistant (Lab) and Guest Lecturer</b> , Genetics, UNL, Lincoln.	<b>Fall 2016</b>
	<b>Guest lecturer</b> , (three classes) Plant Growth and Development, UNL, Lincoln.	<b>Fall 2015</b>
	<b>Guest lecturer</b> , Biotechnology for crop improvement, UAS, Bangalore.	<b>2011</b>
	<b>Guest lecturer</b> , Introduction to Bioinformatics, UAS, Bangalore.	<b>2010</b>
	<b>Teaching Assistant</b> , Molecular Biology lab, Sir MVIT, Bangalore.	<b>2008-2009</b>

RESEARCH  
ARTICLES

**Kenchanmane Raju, SK.**, Shao, M. , Sanchez, R. , Xu, Y. , Sandhu, A. , Graef, G. and Mackenzie, S. (2018), **An epigenetic breeding system in soybean for increased yield and stability**. Plant Biotechnol J. (<https://onlinelibrary.wiley.com/doi/abs/10.1111/pbi.12919>)

Lohithaswa, HC, Rabiya Bi, Lokesh S, **Sunil Kumar KR**, Shilpa HB, Jyothi K, Vinutha K, and S. Hittalmani.(2018), **Development and application of genomic resources for comparative and translational genomics in legumes through leveraging genomic sequence of *Medicago truncatula***. Accepted – Journal of Genetics

Shao, MR., **Kenchanmane Raju SK**, JD. Laurie, R Sanchez and SA Mackenzie (2017). **Stress-responsive pathways and small RNA changes distinguish variable developmental phenotypes caused by MSH1 loss**. BMC Plant Biology 17(1): 47.

Virdi, KS., Y. Wamboldt, H. Kundariya, JD Laurie, I Keren, **Sunil Kumar KR**, A Block, G Basset, S Luebker, C Elowsky, P M Day, J L Roose, TM Bricker, T Elthon and SA.Mackenzie (2016). **MSH1 is a plant organellar DNA binding and thylakoid protein under precise spatial regulation to alter development**. Mol Plant 9(2), 245-260.

Lohithaswa, HC, Jyothi K, **Sunil Kumar KR**, Puttaramanaik and S Hittalmani (2015). **Identification and introgression of QTLs implicated in resistance to sorghum downy mildew (*Peronosclerospora sorghi* (Weston and Uppal) C. G. Shaw) in maize through marker-assisted selection**. Journal of Genetics 94(4): 741-748.

PRE-PRINTS/  
MANUSCRIPTS  
UNDER REVIEW

**Kenchanmane Raju SK** and Niederhuth CE (2018), **Epigenetic Diversity and Application to Breeding** (Invited book chapter - submitted)

**Kenchanmane Raju SK\***, Barnes A\*, Schnable JC and Roston RL. (2018), **Low-temperature tolerance in land plants: Are transcript and membrane responses conserved?** (Invited review: submitted)

**Kenchanmane Raju SK\***, Shao MR\*, Wamboldt Y, and Mackenzie SA (2018), **Epigenomic plasticity of *Arabidopsis msh1* mutants under prolonged cold stress**. bioRxiv (<https://doi.org/10.1101/263780>) (Under review)

ORAL  
PRESENTATIONS

**Breeding for epigenetic variation in soybean and *Arabidopsis* for yield and adaptability**. UC Davis Plant Sciences Symposium, Davis, CA. April 24, 2017.

**An epigenetic breeding system in soybean for increased yield and yield stability**. MU-DuPont Plant Breeding Symposium, Columbia, MO. Feb 2, 2017.

**MSH1 evolution, dual targeting, and neofunctionalization**. ASPB Midwest Section Annual Meeting. Columbus, OH. March 22-23, 2014.

**Conversion of SNPs into CAPS and dCAPS markers for gene mapping in Orphan legumes**. National conference at Tumkur University, Tumkur, India. September 21, 2011.

SELECTED  
CONFERENCE  
POSTERS

**Sunil Kumar KR**, Mon-Ray Shao and Sally Mackenzie., Epigenomic plasticity of *Arabidopsis msh1* mutants under cold stress and recovery. ASPB Midwest Section Annual Meeting. Purdue University, February 4-5, 2017.

**Sunil Kumar KR**, Mon-Ray Shao, John Ying-Zhi Xu, Ajay S Sandhu and Sally Mackenzie., An epigenetic breeding system in soybean for increased yield and stability. **BEST POSTER AWARD** ‘Genetics and Genomics of Crop Improvement’ at DDPSC St Louis, 2016.

**Sunil Kumar KR**, Yashitola Wamboldt and Sally A Mackenzie., Evolution, differential targeting and neo functionalization of Soybean MSH1. 15th Biennial Molecular & Cellular Biology of the Soybean Conference, held in Minneapolis, MN, 2014.

---

**GRANTS /  
FUNDING**

**UNL-Science Communication Bootcamp 2017 (\$7000)**

Competitive grant from UNL-GSA Special Project Grants and additional support from Dept of Agronomy & Horticulture, Agriculture Research Division and IANR-Science Literacy Initiative.

**UNL-Plant Breeding Symposium 2017, 2016 (\$18500, \$11000)**

Financial support from DuPont-Pioneer, Dept of Agronomy & Horticulture, Agriculture Research Division and Dermot Coyne Lectureship funds.

**AHGSA Women in Science workshop 2016 (\$2500)**

Competitive grant from Dow AgroSciences Aid-To-Education Program and Department of Agronomy & Horticulture.

---

**AWARDS**

**Henry M Beachell Fellowship 2016-2017** for Academic Excellence and Research Potential in Agronomy and Horticultural Sciences, University of Nebraska, Lincoln.

**AHGSA Outstanding member 2016-17** for contribution to the Agronomy and Horticultural Graduate Student Association, UNL.

**BEST POSTER AWARD** at the DDPSC Symposium, St Louis, MO 2016.

---

**TRAVEL  
AWARDS**

**DuPont Plant Science Symposium, UC Davis Travel Award** for oral presentation at the Sixth annual Plant Sciences Symposium-2017, Davis, CA. (\$500)

**Phenome-2017 travel scholarship** and **UNL-GTAP travel award** for poster presentation at Phenome-2017 held in Tucson, AZ. (\$600, \$200)

**Department of Agronomy and Horticulture Travel award** and **UNL - Larrick Whitmore Travel award** for poster presentation at **Keystone meeting, Plant Epigenetics: from genotype to phenotype** held in Taos, NM 2016. (\$300, \$500)

**Department of Agronomy and Horticulture and Agriculture Research Division-UNL travel support** for attending a 21-day workshop on **Frontiers and Techniques in Plant Science**, held from June 25 to July 16, 2015, at Cold Spring Harbour Laboratory, NY. (\$2000, \$2000)

**ASPB travel award** Oral presentation at ASPB-Midwest meeting at Columbus, OH – 2014. (\$250)

---

**ACTIVITIES**

**Fundraising lead** – UNL Science Communication and Policy Boot Camp, June 21-22, 2017

DuPont-Pioneer sponsored UNL Plant Breeding Symposium

**Chair - Organizing Committee:** 2017, 2016

**Vice-Chair - Organizing Committee :** 2014

**Sunil Kumar KR** and Leah Ruff (2016). **Disseminating Quality Science and Agricultural Scientific Literacy Through Student-Organized Plant Science Symposia**. *ASPB News* 43(2): 7-8.

Agronomy and Horticulture Graduate Student Association (**AHGSA**)

**President** - 2016-17

**Vice-President** – 2015-16

**Graduate committee lead** – 2014-15

**Social Media Co-ordinator** – Cold Spring Harbor Laboratory, Annual Plant Course (2017 - )

**Student Ambassador** - UNL – American Society of Plant Biologist (2016 - )

**Sunil Kumar KR** (2017). **Luminaries: Marja Timmermans**. *ASPB News* 44(1):11–13.

Contribution to What we're reading blog – ASPB-Plantae, Sept 1<sup>st</sup> 2017

**Organizing Committee Member** – AHGSA-Women In Science Workshop 08/05/16 at UNL.

---

# MICHIGAN STATE UNIVERSITY

Dear *APPS* Editorial Board,

It is with great pleasure that I recommend Dr. Sunil Kumar Kenchanmane Raju as a member of the Reviewing Editor Board. Sunil is currently a Research Associate (MSU title for postdocs) in my lab, where he researches epigenomic variation, its evolution, and methods of applying this to crop improvement. Sunil was the first person to join my lab and I couldn't have asked for someone better. He is intelligent, motivated, hard-working, and a great team member. Above all, he has a real passion for plant science that he applies to not only his work outside the lab, but also to his extensive contributions to the plant science community.

Sunil first did his M.Sc. at the University of Agricultural Sciences in Bangalore India Dr. Shailaja Hittalmani, publishing two papers in plant breeding. He then went on to do his Ph.D. in Plant Breeding and Genetics at the University of Nebraska-Lincoln under Dr. Sally Mackenzie (now of Penn State). It was at this time that I first became familiar with Sunil's work. Working with Dr. Mackenzie, Sunil began applying her work on the *MSH1* gene to novel ways of generating new epigenetic variation in soybean and using this in plant breeding, with four papers (two first author) published or in review. These are cutting-edge approaches in the field of epigenetics that are carrying the field forward from one of pure basic research to application in the field. During this time, he also began working on the epigenomics of abiotic stresses, in particular cold stress. After graduating, Sunil went on to do a short postdoc with Dr. James Schnable while transitioning from his Ph.D. where he continued his work on the genomics of cold stress, this time in maize and sorghum. In his short time with Dr. Schnable, Sunil managed to write a first-author review and will be on a number of other future papers.

Sunil is someone with a deep understanding of the science and who knows his career and research goals. I think it speaks to his maturity as a young scientist, that when he joined my lab, he did so with a clear understanding of what he wanted to accomplish and how that fit within the framework of my lab. Continuing on the themes of epigenomic variation and abiotic stress that he has developed, he is now researching these within the framework of comparative epigenomics and evolution. At the same time, he is leading the way in my lab in developing novel techniques for targeted epigenome engineering. He is someone who is constantly improving himself as a scientist and always staying up to date with the science. Already in his short time with me he has submitted a book chapter for publication.

Sunil has been a great influence to the lab and a joy to mentor. He has worked with one graduate student and two undergraduates in the lab and my observation has been that he is a good mentor. He is patient with the students and able to clearly communicate ideas and techniques. He has a history in education, having been a teaching assistant or guest lecturer throughout his graduate career. One area where I have seen Sunil display this is at a weekly session we have as a lab to learn bioinformatics techniques. During these sessions Sunil has been a valuable aid to me, oftentimes explaining concepts or catching mistakes that I failed to communicate or notice to the students. Basically, he has taken his senior position seriously and demonstrated leadership.

These qualities are also on display outside the lab and Sunil has actively been involved in the plant science community. He has organized conferences on multiple occasions, such as the UNL Plant Breeding Symposium (2014, 2016, and 2017), UNL Science Communication and Policy Boot Camp (2017), and the AHGSA-Women in Science Workshop (2016). He was actively involved in the Agronomy and Horticulture Graduate Student Association, finishing his term as president of this group from 2016-2017. He is currently Social Media Coordinator for the CSHL Annual Plant Course and an ASPB Student Ambassador for UNL. He contributes to science communication through efforts like writing for ASPB News.



College of  
Natural Science

Department of  
Plant Biology

239 Plant Biology Building  
East Lansing, MI 48824-1312

517-355-3870

Sunil has already demonstrated himself to be a leader in the plant science community. He is a good scientist and more than capable leader. Joining the Reviewing Editor Board, I think, will be a valuable experience for him, giving him insight and experience in scientific publishing. I would whole heartedly endorse him for this role and think he has much to offer *APPS*.

Sincerely,

Chad Niederhuth

Assistant Professor  
Dept. of Plant Biology  
Michigan State University