




Faculty Details proforma for DU Web-site

Title	Dr.	First Name	Girish	Last Name	Mishra	
Designation		Assistant Professor				
Address		Department of Botany University of Delhi Delhi-110007				
Phone No Office						
Residence Mobile		9711693065				
Email		girishmishra@yahoo.com				
Web-Page						
Educational Qualifications						
Degree		Institution			Year	
Ph.D.		University of Hongkong			2004	
PG		Madurai Kamaraj University			1995	
UG		University of Delhi			1993	
Career Profile						
July 2010-Present		Assistant Professor & Ramalingasami Fellow (DBT)			Dept. of Botany, University of Delhi Delhi-110007, India	
Nov' 2006-June 2010		Research Associate			Dept. of Biology, Brookhaven National Laboratory, Upton, NY- 11973,USA	
2004- Oct' 2006		Postdoctoral Research Associate			Dept. of Biology, Uniiversity of Missouri- St. Louis, St. Louis, MO- 63132, USA	
Administrative Assignments						
Treasurer, Delhi University Botanical Society Member, Departmental Purchase committee Member, Departmental Research Committee Member, Department Library committee						
Areas of Interest / Specialization						
My area of specialization is plant molecular biology and biochemistry with research emphasis on lipid metabolism and lipid mediated signaling in plants during abiotic stress.						
Subjects Taught						

Bot 103- Physiology and Biochemistry
Bot 408- Topics in plant physiology and biochemistry
Bot 301- Algae, environment and human welfare

Time table of the subjects taught during the current semester

S.No.	Subject	Days	Time	Classroom
1	Bot 408: Topics in Physiology and Biochemistry	Wednesday (Theory and Practical)	Theory: 08.45 -10.35 Practicals: 10.35-04:05	Theory: #208 Practical:# 45
2	Ph.D. coursework GR2: Instrumentation GR5: Methods for Physiology and Biochemistry	GR2: Tuesday GR5: Friday	Time :2.00-4.00	Theory: Committee room Practicals: As per location of equipment

Research Guidance

Ph.D enrolled: four
 Ph.D completed: one
 M.Phil completed: Three
 M. Phil enrolled: none

Publications Profile

Books/Monographs (Authored/Edited)

1. Phospholipid signaling in plant response to drought and salt stress. Wang X, Zhang W, Li W and **Mishra G** . M. A. Jenks et al. (eds.) Advances in Molecular breeding toward drought and salt tolerant crops. **Springer publications**. 183-192. 2007
2. Polyunsaturated fatty acid in algae. **Mishra G**. In Sahoo D. and Seckbach J. (eds.) Advances in Molecular breeding toward drought and salt tolerant crops. **Springer publications**. 467-481. 2015
3. Metabolic conditioning and induction of cell division by culture/growth factor-supplements in microdroplet cell cultures of *Brassica juncea* L. Manoharan K., **Mishra G.**, Sathishkumar R. (2007) In: Plant Biotechnology: New Frontiers. (Eds.) Kukreja A.K., Mathur A.K., Banerjee S., Mathur A., Sharma A., Khanuja S.P.S. pp. 41-50.
4. Verma, P., Kumar, M., Kumar, D., **Mishra, G** and Sahoo D. Algae a potential bioresource for fine chemicals. Enriched Publications, Delhi, India. In: Scope of Phytochemically Unexplored Medicinal Plants. Manuscript accepted. (ISBN No. 978-1-63535-013-5).

1. Research papers published in Refereed/Peer Reviewed Journals

1. ACBP4 and ACBP5, novel Arabidopsis acyl-CoA-binding proteins with kelch motifs that bind oleoyl-CoA. Leung KC, Li HY, **Mishra G**, Chye ML. *Plant Mol Biol*. **2004** May; 55 (2):297-309
2. A bifurcating pathway directs abscisic acid effects on stomatal closure and opening in Arabidopsis. **Mishra G**, Zhang W, Deng F, Zhao J, and Wang X. *Science*. **2006** April; 312: 264-266
- 3.. Desaturases: Emerging models for understanding functional diversification of diiron-

containing enzymes. Shanklin J, Guy J E., **Mishra G** and Lindqvist Y. *J. Biol. Chem.* July **2009**, 284: 18559-18563

4. The Arabidopsis *acbp1acbp2* double mutant lacking Acyl-CoA-Binding Proteins ACBP1 and ACBP2 is embryo lethal. Chen QF, Xiao S, Wangqin Q, **Mishra G**. and Chye ML. *New Phytologist* **2010** 186: 843-855
5. Metabolic engineering of seeds can achieve Levels of ω -7 Fatty Acids Comparable with the Highest Levels found in natural plant sources Nguyen HT, **Mishra G**, Whittle E, Bevan SA, Merlo AO, Walsh TA, Shanklin J. *Plant Physiol.* **2010** Dec;154(4):1897-904.
6. Phosphatidic Acid binds and stimulates Arabidopsis sphingosine kinases Guo L, **Mishra G**, Taylor K, Wang X. *J Biol Chem.* **2011** Apr 15;286(15):13336-45.
7. Connections between sphingosine kinase and phospholipase D in the abscisic acid signaling pathway in Arabidopsis. Guo L, **Mishra G**, Markham JE, Li M, Tawfall A, Welti R and Wang X.. *J Biol Chem.* **2012**, 287:8286-96.
8. Parallel and Competitive Pathways for Substrate Desaturation, Hydroxylation and Radical Rearrangement by the Non-heme Diiron Hydroxylase AlkB. Cooper HLR, **Mishra G**, Huang X, Pender-Cudlip M, Austin RN, Shanklin J and Groves JT. *J. Am. Chem. Soc.* **2012**, 134(50), 20365-20375.
9. Multivariate analysis of fatty acid and biochemical constituents of seaweeds to characterize their potential as bioresource for biofuel and fine chemicals. Verma P, Kumar M, **Mishra G** and Sahoo D. *Bioresour. Technol.* **2017**, Feb; 226:132-144. doi: 10.1016/j.biortech.2016.11.044. Epub 2016 Nov 15
11. A novel function for globulin in sequestering plant hormone: Crystal structure of *Wrightia tinctoria* 11S globulin in complex with auxin. Kumar P, Kesari P, Dhindwal S, Choudhary AK, Katiki M, Neetu, Verma A, Ambadipudi K, Tomar S, Sharma AK, **Mishra G**, Kumar P. *Sci Rep.* **2017** Jul 5;7(1):4705. doi: 10.1038/s41598-017-04518-7.
12. Identification of novel phosphatidic acid binding domain on sphingosine kinase 1 of Arabidopsis thaliana. Pandit S, Dalal V, **Mishra G**. *Plant Physiol Biochem.* 2018 Jul;128:178-184. doi: 10.1016/j.plaphy.2018.04.039. Epub 2018 May 8.
13. Fatty acid profiling and multivariate analysis in the genus *Leucas* reveals its nutritional, pharmaceutical and chemotaxonomic significance. Choudhary AK, Sunojkumar P, **Mishra G**. *Phytochemistry.* 2017 Nov;143:72-80. doi: 10.1016/j.phytochem.2017.07.007. Epub 2017 Aug 1.



Publications in the Last one year

1. Identification of novel phosphatidic acid binding domain on sphingosine kinase 1 of *Arabidopsis thaliana*. Pandit S, Dalal V, **Mishra G.** *Plant Physiol Biochem.* 2018 Jul;128:178-184. doi: 10.1016/j.plaphy.2018.04.039. Epub 2018 May 8.
2. Fatty acid profiling and multivariate analysis in the genus *Leucas* reveals its nutritional, pharmaceutical and chemotaxonomic significance. Choudhary AK, Sunojkumar P, **Mishra G.** *Phytochemistry.* 2017 Nov;143:72-80. doi: 10.1016/j.phytochem.2017.07.007. Epub 2017 Aug 1.

Conference Organization/ Presentations (in the last three years)

- Metabolic engineering of vlc-pufa pathway genes in oleiferous crop **Shaweta Arora, Girish Mishra** National conference on challenges and strategies to improve crop productivity in changing environment: An integrated approach held on 12th January 2018; Department of Botany, Zakir Husain Delhi College, University of Delhi.
- Strategies for improvement of nutraceutical yield from microalgae *Monodopsis subterranean*. Shaweta Arora, Girish Mishra. National symposium on advances in biology of algae and cyanobacteria (ABAC) held on 8th – 9th February 2018; Centre of Advanced Study in Botany, Institute of Science; Banaras Hindu University, Varanasi.
- Shivangi, Dinabandhu Sahoo and Girish Mishra (2018) Transcriptomic analysis of *Monodopsis subterranea* to study the genes involved in PUFA biosynthetic pathway. National symposium on advances in biology of algae and cyanobacteria (ABAC) held on 8th – 9th February 2018; Centre of Advanced Study in Botany, Institute of Science; Banaras Hindu University, Varanasi.
- Shivangi and Girish Mishra (2018) Isolation, identification and biochemical Characterization of *Scenedesmus sp.* from Dal Lake, Kashmir. National conference on challenges and strategies to improve crop productivity in changing environment: An integrated approach held on 12th January 2018; Department of Botany, Zakir Husain Delhi College, University of Delhi.
- Poster International conference on Technological Advancement for sustainable Agriculture and Rural Development (TASARD-India, 2017), organized by African Asian Rural Development organization (AARDO) and Society for Plant research (VEGETOS) Titled-“Substrate Specificity of membrane desaturases isolated from *Leucas cephalotes*” held at NASC, IARI, New Delhi, on February 20-22, 2017.
- Verma, P., Kumar, M., Kumar, D., Mishra, G. and Sahoo, D. Algae a Potential Bioresource for Fine. “National Conference on Pharmacognosy: Scope of Phytochemically Unexplored Medicinal Plants 2017” on 12th January 2017, organized by Department Of Botany, Zakir Husain Delhi College, University of Delhi, Delhi, India.
- Verma, P., Mishra, G., and Sahoo, D. Algae a Potential Bioresource for nutraceutical and biofuel production. “INDIA INTERNATIONAL SCIENCE FESTIVAL 2016” on 8-11 December 2016,

during Young Scientists Conclave Held at CSIR- NPL, Delhi, India.	
<ul style="list-style-type: none"> • Kumar, D., Kumar, M., Mishra, G., and Sahoo, D., The potential and sustainable Bioethanol production from red algal species <i>Gracilaria edulis</i>. “INDIA INTERNATIONAL SCIENCE FESTIVAL 2016” on during young scientist enclave held on 8-11 December, 2016 at CSIR-NPL, Delhi. • Poster presented at National conference on Plant Science Research: Looking Beyond 21st Century for Environmental & Agricultural Revolution, organized by Society for Plant research (VEGETOS) Titled-“Isolation and functional Characterization of membrane desaturase from <i>Leucas</i> species” held at Dept. of Botany, University of Delhi, on 5-7 February, 2016 (Best Poster). 	
Research Projects (Major Grants/Research Collaboration)	
<ol style="list-style-type: none"> 1. Understanding plant lipid metabolism and its role in signaling: Using basic science models to enhance oil crops. DBT, 2010-2015. 2. Introduction of very long chain polyunsaturated fatty acids biosynthesis pathway in Indian mustard (<i>Brassica juncea</i>) DBT, 2013-2016. 3. At NDL proteins: molecular mechanism of action in regulation of plant growth and development. DST, 2017-2019. (Co-PI) 4. Development of seaweeds Biorefinery and Pilot demonstration of bioethanol production. DBT, 2013-2016. (Co-PI) 5. Induction of autonomous endosperm development in <i>Pennisetum</i> species by down-regulating a polycomb gene CCEZ1 using RNAi approach. DAE, 2016-2019. (Co-PI) 	
Awards and Distinctions	
2010-2015	Ramalingaswami Fellowship, Department of Biotechnology (DBT), India
2004-06	NSF postdoctoral fellowship from Govt. of U.S.A
2000-04	Hong Kong University studentship for Ph.D.
1995	National Entrance Test / UGC examination cleared
1993-95	Junior Research Fellowship during M.Sc from Indian Council of Agricultural Research for Plant Biotechnology.
1993-95	Merit scholarship, Department of Biotechnology (DBT), India
1987-93	National merit scholarship, India
Association With Professional Bodies	
Delhi University Botanical Society	
Other Activities	

