



## Faculty Details proforma for DU Web-site

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cc: [director@ducc.du.ac.in](mailto:director@ducc.du.ac.in))

Title	Dr.	First Name	Arun	Last Name	Jagannath	Photograph
Designation		Professor				
Address		Department of Botany University of Delhi Delhi – 110007.				
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Web-Page						
<b>Educational Qualifications</b>						
Degree		Institution			Year	
Ph.D. - Genetics		Department of Genetics, University of Delhi (South Campus)			1999	
M.Sc. - Biotechnology		Department of Biotechnology, Madurai Kamaraj University			1994	
B.Sc. (Hons) – Botany		Hansraj College, University of Delhi			1992	
Others		Certificate Program in Bioinformatics and Computational Biology (Jun - Dec 2004) from IIT, Delhi (Supercomputing Facility for Bioinformatics and Computational Biology) and NIIT.			2004	
<b>Career Profile</b>						
<b><u>Organization/Institution</u></b>		<b><u>Designation</u></b>		<b><u>Duration</u></b>		<b><u>Role</u></b>
Department of Botany University of Delhi		Professor		Mar 2014 - till date		Teaching and Research
Department of Botany University of Delhi		Associate Professor		Dec 2010 – Mar 2014		Teaching and Research
Department of Botany University of Delhi		Reader		Dec 2007 – Dec 2010		Teaching and Research
Centre for Genetic Manipulation of Crop Plants (CGMCP), Delhi University South Campus		Senior Research Scientist		Mar 2007 – Dec 2007		Research
-do-		Research Scientist		Oct 2000 – Mar 2007		Research
Department of Genetics, Delhi University South Campus		Research Scientist		Mar 2000 – Sep 2000		Research
Department of Genetics, Delhi University South Campus		Research Associate		Aug 1999 – Feb 2000		Research

## Administrative Assignments

### (A) University of Delhi

1. Member, Editorial Board, 96<sup>th</sup> Annual Report (2018 – 19), University of Delhi
2. Member, Technical Advisory Committee, Delhi University Computer Centre (DUCC) (April 12, 2019 onwards)
3. Member (University Representative), Governing Body, Amar Jyoti Institute of Physiotherapy, University of Delhi (25.02.2019 – 24.02.2020)
4. Member, ECA Admissions Committee, University of Delhi (Feb 18, 2019 onwards)
5. Member, Special Task Force on QS-Global Ranking, University of Delhi (Dec 3, 2018 onwards)
6. Vice Chancellor's nominee, Departmental Research Council, Department of Biophysics, University of Delhi South Campus (Oct 26, 2018 – Oct 25, 2020)
7. Member, Editorial Board, 95<sup>th</sup> Annual Report (2017 – 18), University of Delhi
8. Vice Chancellor's nominee, Executive Committee, Delhi University Sports Council (May 30, 2018 onwards)
9. Member (University Representative), Governing Body, Rajdhani College, University of Delhi (2018-19)
10. Member, Flower Show Committee, 60<sup>th</sup> Annual Flower Show, University of Delhi, 2017.
11. Member, Editorial Board, 94<sup>th</sup> Annual Report (2016 – 17), University of Delhi.
12. Member, Planning Committee, University of Delhi (February 25, 2017 onwards)
13. Member, Flower Show Committee, 59<sup>th</sup> Annual Flower Show, University of Delhi Feb 23, 2017.
14. Member, Garden Committee, University of Delhi (Nov 01, 2016 onwards)
15. Vice Chancellor's nominee, Departmental Research Council of Department of Plant Molecular Biology, University of Delhi South Campus (Oct 26, 2016 – Oct 25, 2018)
16. Member, Computer Centre Management Committee, University of Delhi (2012 - 2014).
17. Member, Governing Body, Delhi University Library System (July 2009).

### (B) Department of Botany

1. Nodal Officer, NAAC team visit (October 2018)
2. Member, Departmental Research Committee (DRC; 01.09.2017 – 31.08.2019)
3. Member, Students' Grievance Redressal Committee (July 2017 onwards)
4. Member, Committee of Courses and Studies for Honours, Post-Graduate and Research Studies in Botany, University of Delhi (2016 –2018)
5. Member, Student Counseling Committee (March 2016 onwards)
6. Special Invitee, Committee of Courses (May 2015) for design and implementation of CBCS in B.Sc. programs in Botany in Delhi University.
7. Member, M. Phil. Committee (06.01.2015 – 05.01.2017)
8. Member, Anti-Smoking Committee (2015 onwards)
9. Member, Swachata Abhiyan Committee (SAC) of the Department of Botany, University of Delhi (2014 onwards).
  - Initiated a program for recycling of paper waste generated in the Department to obtain stationery for regular use in the Department.
10. Member, Moderation Committee for Theory papers of B.Sc. Life Science, B.Sc.(Hons)-Botany, FYUP (Sem I) and M.Sc. Botany programs (2013-2014, 2014-2015).
11. Member, Organizing Committee, International Conference on Plant Signaling and Behavior, March 7 – 10, 2014, Delhi. India.
12. Member, Web Page Committee, Department of Botany, University of Delhi (2011 onwards).
  - Involved with design and development of the website of the Department of Botany along with resource persons from Delhi University Computer Centre.
13. Member, Furniture Committee, Department of Botany, University of Delhi (2010 - 2011).
  - Involved in designing seating plans and modern infrastructure including addition of safety measures in teaching laboratories of the Department.
14. Faculty-in-Charge, M.Sc. Botany program (2010 onwards) for
  - Teaching and Examination Schedule
  - Distribution of Optional Papers and Dissertation Supervisors in Semesters III and IV.
15. Member, Construction, Restoration and Renovation Committee, Department of Botany, University

<p>of Delhi (2009 - 2011).</p> <ul style="list-style-type: none"> <li>• Associated with renovation and modernization of existing buildings and designing laboratory infrastructure of the new block.</li> </ul> <p>16. Member, Committee of Courses and Studies for Honours, Post-Graduate and Research Studies in Botany, University of Delhi (August 2009 – August 2011).</p> <p>17. Member, Purchase Committee for up-gradation of teaching infrastructure and instrumentation facilities at the Department of Botany, University of Delhi (2008 – 2011).</p> <ul style="list-style-type: none"> <li>• Involved with establishment of a state-of-art Central Instrumentation Facility at the Department, up-gradation of teaching infrastructure and establishment of a Bioinformatics laboratory in the Department.</li> </ul> <p>18. Staff Advisor, Delhi University Botanical Society (2008 - 2011).</p> <p><b>(C) Others</b></p> <p>1. External Member, Institutional Biosafety Committee (IBSC), Shiv Nadar University, Noida, U.P. (September 2017 onwards).</p> <p>2. Department of Biotechnology - Government of India nominee, Institutional Biosafety Committee (IBSC), The Energy and Resources Institute (TERI), New Delhi (2013 – till date).</p>
<b>Areas of Interest / Specialization</b>
<p><b>Crop Biotechnology, Genetics and Genomics, Bioinformatics</b></p> <p>Our laboratory uses a combination of genetic, genomic and transgenic technologies to study the molecular basis of important agronomic traits in two different oilseed crops, <i>Brassica juncea</i> (Indian mustard) and <i>Carthamus tinctorius</i> (Safflower). In mustard, we work on (i) identification of genes influencing traits of economic value viz., seed size and oil content using a comparative genomics approach and their validation using transgenic technology and expression studies and (ii) transgenic approaches for introducing resistance to mustard aphid (<i>Lipaphis erysimi</i>) using a combination of lectin genes and RNAi strategies. Our research on safflower is in collaboration with two other faculty members of the Department of Botany. Earlier work on safflower in our laboratory focused on analysis of genetic diversity and population structure of the crop, development of core collections and panels for association mapping. Current thrust areas of safflower research in our lab include development of molecular markers, generation of mapping populations, construction of linkage maps, genetic dissection of important traits and genetic transformation for crop improvement. Additionally, our group is also involved with generation of transcriptome resources for the mustard aphid.</p>
<b>Subjects Taught</b>
<p>1. <b>Department of Botany, University of Delhi:</b></p> <ul style="list-style-type: none"> <li>• <b>M.Sc. – Semester system (July 2009 onwards):</b> <ul style="list-style-type: none"> <li>○ Cell and Molecular Biology (2009)</li> <li>○ Recombinant DNA Technology and Proteomics (2009, 2017)</li> <li>○ Plant Biotechnology and Resource Utilization (2009 onwards)</li> <li>○ Bioinformatics, Computational Biology and Biostatistics (2009 onwards)</li> <li>○ Genomics and Proteomics (2009 onwards)</li> </ul> </li> <li>• <b>M.Sc. – Annual system (January 2008 – June 2010):</b> <ul style="list-style-type: none"> <li>○ Plant Biotechnology</li> <li>○ Plant Resource Utilization</li> <li>○ Genetics and Biotechnology of Crop Plants (Special Paper – 2008-09)</li> <li>○ Genomics and Proteomics (Special paper – 2009-10)</li> </ul> </li> <li>• <b>M. Phil. (2011-12):</b> <ul style="list-style-type: none"> <li>○ Basics of Molecular Biology and Genetics</li> </ul> </li> <li>• <b>Ph.D. Course Work:</b> <ul style="list-style-type: none"> <li>○ RM-03 – Research Methodology – Scientific Writing (2017-18 onwards)</li> <li>○ Effective communication, writing and biostatistics (GR1) (2012 - 2017)</li> <li>○ Instrumentation (2012)</li> </ul> </li> </ul> <p>2. <b>Sri Venkateswara College, University of Delhi</b> (2008 onwards) - Guest Faculty for Bioinformatics.</p> <p>3. <b>MMV, Banaras Hindu University (BHU), Varanasi</b> (2008 onwards) - Guest Faculty for Bioinformatics.</p> <p>4. <b>Department of Genetics, Delhi University South Campus</b> (2005 – 2008) - Guest Faculty for Computer Applications in Biology.</p>

Time table of the subjects taught during the current semester

S.No.	Subject	Days	Time	Classroom
1.	BOT 203 – Plant Biotechnology and Resource Utilization	Tue (Extra classes)	10.35 AM – 12.25 PM	Room # 37
		Wed (Theory and Practical)	8.45 AM – 9.40 AM (T)	Room # 37
			10.45 AM – 02.15 PM (P)	Lab # 45
		Fri (Theory and Practical)	8.45 AM – 9.40 AM (T)	Room # 37
			10.45 AM – 02.15 PM (P)	Lab # 45
		Sat (Tutorials)	As per requirement	As per requirement
2.	BOT 306 – Bioinformatics, Computational Biology and Biostatistics	Thurs (Theory and Practical - combined)	08.45 AM – 02.15 PM	Room # 41
3.	BOT 307 – Genomics and Proteomics	Wed (Theory)	10.35 AM – 12.25 PM	Room # 207 (DREAM building)
4.	BOT 409 - Dissertation	Sat / other days based on students' schedules	Based on students' schedules and experiments	Lab # 7
5.	Ph.D. Coursework (a) RM01 #: Research Methodology - Introduction to Scientific Practice (b) RM03 #: Research Methodology - Science Writing #: Mandatory papers for all Ph.D. students	Mon (Theory and Practical)	02.00 PM – 05.00 PM	Committee Room

Research Guidance

- Ph.D. students (awarded) - 4
- Ph.D. students (submitted) - nil
- M. Phil. students (awarded) - 1
- Students currently registered for Ph.D. - 3
- Research Fellows - nil
- M.Sc. dissertation students from other Institutions (TERI University; IBAB, Pune; Amity University, Noida; Pondicherry University). - 5

Additionally, the laboratory hosts 2-3 summer trainees from various Institutions every year.

Publications Profile

(A) Patents

1. *"Regulation of lethal gene expression in plants"*.
  - **European patent** WO 01/92544 A1 2000 Status: Cleared for Novelty & Industrial Applicability
  - **US patent** No. 6,833,494 B1 2004 Status: Granted
  - **Canadian patent** No. 2,449,250 2012 Status: Granted
  - National Phase applications filed in Europe and Australia (2003)
2. *"A method for obtaining improved fertility restorer lines for transgenic male sterile crop plants and a DNA construct for use in said method"*.
  - **European patent** No. 1644506 2009 Status: Granted
  - **US patent** US 7,741,541 B2 2010 Status: Granted
  - **Indian patent** No. 238973 2010 Status: Granted
  - National phase applications filed in Europe, Canada and India.
3. *"An insulator construct for controlling leaky expression of a lethal gene"*.
  - **Indian patent** No. 244022 2010 Status: Granted

(B) Publications

1. Heena Ambreen, Shivendra Kumar, Amar Kumar, Manu Agarwal, **Arun Jagannath\*** and Shailendra Goel\* 2018. Association mapping for important agronomic traits in safflower (*Carthamus tinctorius* L.) core

collection using microsatellite markers. **Frontiers in Plant Science**, <https://doi.org/10.3389/fpls.2018.00402>  
\*Joint corresponding authors

2. Pritam Kaur, Neha Shukla, Gopal Joshi, Cheeni VijayaKumar, **Arun Jagannath**, Manu Agarwal, Shailendra Goel, Amar Kumar. **2017**. Genome-wide identification and characterization of miRNAome from tomato (*Solanum lycopersicum*) roots and root-knot nematode (*Meloidogyne incognita*) during susceptible interaction. **PLoS-ONE** Apr 20. <https://doi.org/10.1371/journal.pone.0175178>.
3. Neha Shukla, Rachita Yadav, Pritam Kaur, Simon Rasmussen, Shailendra Goel, Manu Agarwal, **Arun Jagannath**, Ramneek Gupta and Amar Kumar. **2017**. Transcriptome analysis of root-knot nematode (*Meloidogyne incognita*)-infected tomato (*Solanum lycopersicum*) roots reveals complex gene expression profiles and metabolic networks of both host and nematode during susceptible and resistance responses. **Molecular Plant Pathology**. 21 Feb. DOI: 10.1111/mpp.12547.
4. Rubina Chongtham, Sonia Waikhom, Amar Kumar, Shailendra Goel, Manu Agarwal and **Arun Jagannath**. **2016**. Evaluation of different hosts and laboratory conditions for rearing of the mustard aphid (*Lipaphis erysimi*) and their use for screening of aphid-resistant transgenic plants of the oilseed crop, *Brassica juncea* (Indian mustard). **Vegetos**. doi: [10.5958/2229-4473.2017.00058.1](https://doi.org/10.5958/2229-4473.2017.00058.1)
5. Shivendra Kumar, Heena Ambreen, TV Murali, AR Rao, Manu Agarwal, Amar Kumar, Shailendra Goel\* and **Arun Jagannath\***. **2016**. Utilization of molecular, phenotypic and geographical diversity to develop compact composite core collection in the oilseed crop, Safflower (*Carthamus tinctorius* L.) through maximization strategy. **Frontiers in Plant Science** 7:1554. doi: 10.3389/fpls.2016.01554. \*Joint corresponding authors
6. V. Patial, R. Krishna, G. Arya, V. K. Singh, M. Agarwal, S. Goel, **Arun Jagannath\*** and A. Kumar\*. **2016**. Development of an efficient, genotype independent plant regeneration and transformation protocol using cotyledonary nodes in safflower (*Carthamus tinctorius* L.). **Journal of Plant Biochemistry and Biotechnology** DOI 10.1007/s13562-016-0354-x. \*Joint corresponding authors
7. Somya Sinha, Vivek Kumar Raxwal, Bharat Joshi, **Arun Jagannath**, Surekha Katiyar-Agarwal, Shailendra Goel, Amar Kumar and Manu Agarwal. **2015**. De novo transcriptome profiling of cold-stressed siliques during pod filling stages of Indian mustard (*Brassica juncea* L.). **Frontiers in Plant Science** 6:932. doi: 10.3389/fpls.2015.00932.
8. Heena Ambreen, Shivendra Kumar, T V Murali, Gopal Joshi, Sapinder Bali, Manu Agarwal, Amar Kumar, **Arun Jagannath\*** and Shailendra Goel\*. **2015**. Development of genomic microsatellite markers in *Carthamus tinctorius* L. (safflower) using next generation sequencing and assessment of their cross-species transferability and utility for diversity analysis. **PLoS-ONE** DOI:10.1371/journal.pone.0135443. \*Joint corresponding authors.
9. Ankur R Bhardwaj, Gopal Joshi, Bharti Kukreja, Vidhi Malik, Priyanka Arora, Ritu Pandey, Rohit N Shukla, Kiran G Bankar, Surekha Katiyar-Agarwal, Shailendra Goel, **Arun Jagannath**, Amar Kumar and Manu Agarwal. **2015**. Global insights into high temperature and drought stress regulated genes by RNA-Seq in the economically important oilseed crop, *Brassica juncea*. **BMC Plant Biology**. 15:9; DOI: 10.1186/s12870-014-0405-1.
10. Shivendra Kumar, Heena Ambreen, T. V. Murali, Sapinder Bali, Manu Agarwal, Amar Kumar, Shailendra Goel\* and **Arun Jagannath\***. **2014**. Assessment of genetic diversity and population structure in a global reference collection of 531 accessions of *Carthamus tinctorius* L. (safflower) using AFLP markers. **Plant Molecular Biology Reporter**. DOI: 10.1007/s11105-014-0828-8. \*Joint corresponding authors.
11. Naveen C. Bisht, **Arun Jagannath**, Rehna Augustine, Pradeep K. Burma, Vibha Gupta, Akshay K. Pradhan & Deepak Pental. **2014**. Effective restoration of male-sterile (*barnase*) lines requires overlapping and higher levels of barstar expression: A multi-generation field analysis in *Brassica juncea*. **Journal of Plant Biochemistry and Biotechnology**. DOI: 10.1007/s13562-014-0289-z.
12. AR Bhardwaj, Gopal Joshi, Ritu Pandey, Bharti Kukreja, Shailendra Goel, **Arun Jagannath**, Amar Kumar, Surekha Katiyar-Agarwal, Manu Agarwal. **2014**. A genome-wide perspective of miRNAome in response to high temperature, salinity and drought stresses in *Brassica juncea* (Czern) L. **PLoS-ONE** Published: March 26, 2014; DOI: 10.1371/journal.pone.0092456.
13. Lakhotia N, Joshi G, Bhardwaj AR, Katiyar-Agarwal S, Agarwal M, **Jagannath A**, Goel S & Kumar A. **2014**. Identification and characterization of miRNAome in root, stem, leaf and tuber developmental stages of potato (*Solanum tuberosum* L.) by high-throughput sequencing. **BMC Plant Biology** 14(6): doi:10.1186/1471-2229-14-6.
14. **Jagannath A**, Sodhi YS, Gupta V, Mukhopadhyay A, Arumugam N, Singh I, Rohatgi S, Burma PK, Pradhan

- AK and Pental D. **2011**. Eliminating expression of erucic acid-encoding loci allows the identification of “hidden” QTL contributing to oil quality fractions and oil content in *Brassica juncea* (Indian mustard). **Theoretical and Applied Genetics** 122(6): 1091-103.
15. Panjabi P, **Jagannath A**, Bisht NC, Padmaja KL, Sharma S, Gupta V, Pradhan AK and Pental D. **2008**. Comparative mapping of *Brassica juncea* and *Arabidopsis thaliana* using Intron Polymorphism (IP) markers: homeologous relationships, diversification and evolution of the A, B and C Brassica genomes. **BMC Genomics** 9:113.
  16. Arumugam N, Gupta V, **Jagannath A**, Mukhopadhyay A, Pradhan AK, Burma PK and Pental D. **2007**. A passage through *in vitro* culture is essential for efficient production of true marker-free transgenic plants using the *cre-loxP* system. **Transgenic Research** 16:703-712.
  17. Bisht NC, **Jagannath A**, Burma, PK, Pradhan AK and Pental D. **2007**. Retransformation of a male sterile *barnase* line with the *barstar* gene as an efficient alternative method to identify male sterile-restorer combinations for heterosis breeding. **Plant Cell Reports** 26:727-733.
  18. Bisht NC, **Jagannath A**, Gupta V, Burma PK and Pental D. **2004**. A two gene – two promoter system for enhanced expression of a restorer gene (*barstar*) and development of improved fertility restorer lines for hybrid seed production in crop plants. **Molecular Breeding**. 14:129-144.
  19. Krishna Ray, **Jagannath A**, Suveena Arora Gangwani, Burma PK and Pental D. **2004**. Mutant *acetolactate synthase* gene is an efficient *in vitro* selection marker for the genetic transformation of *Brassica juncea* (oilseed mustard). **Journal of Plant Physiology**. 161:1079-1083.
  20. **Jagannath A**, Bandyopadhyay P, Mehra S, Arumugam N, Burma PK and Pental D. **2003**. *Agrobacterium*-mediated genetic transformation of *Brassica juncea*. In *Plant Genetic Engineering Vol. 2: Improvement of Food Crops*, (Eds.) Pawan K. Jaiwal and Rana P. Singh, Sci-Tech. Pub. LLC, Texas, USA. pp 349-360.
  21. **Jagannath A**, Arumugam N, Gupta V, Pradhan AK, Burma PK and Pental D. **2002**. Development of transgenic *barstar* lines and identification of a male sterile (*barnase*)/restorer (*barstar*) combination for heterosis breeding in Indian oilseed mustard (*Brassica juncea*). **Current Science**. 32:46-51.
  22. **Jagannath A**, Bandyopadhyay P, Arumugam N, Gupta V, Burma PK and Pental D. **2001**. The use of a Spacer DNA fragment insulates the tissue-specific expression of a cytotoxic gene (*barnase*) and allows high-frequency generation of transgenic male sterile lines in *Brassica juncea* L. **Molecular Breeding**. 8:11-23.
  23. Pental D, Pradhan AK, Mukhopadhyay A, Gupta V, Arumugam N, Sodhi YS, Burma PK, Verma J, **Jagannath A**, Bandyopadhyay P, Phogat S, Mehra S and Srivastava A. **2000**. Breeding of oilseed *Brassica* species by a combination of conventional breeding and genetic engineering. In *Rapeseed-Mustard : At the doorstep of the new millennium*, (Eds.) A.K. Bhatnagar, R.K. Shukla and H.B. Singh, Mustard Research and Promotion Consortium, New Delhi, India.

### (C) Conference Papers/Posters

1. National Conference on “Challenges and Strategies to Improve Crop Productivity in Changing Environment: An Integrated Approach”. January 12, **2018**. Department of Botany, Zakir Husain Delhi College, University of Delhi, Delhi, India.
  - Ankur R Bhardwaj, Gopal Joshi, Ritu Pandey, Shailendra Goel, **Arun Jagannath**, Amar Kumar, Surekha Katiyar-Agarwal and Manu Agarwal. “Investigation of development related conserved and novel miRNAs in *Brassica juncea* using high throughput small RNA sequencing”.

**Best Poster Award**
2. XXVII Annual Conference of Indian Association for Angiosperm Taxonomy & International Symposium on Plant Systematics: Priorities and Challenges. November 10-12, **2017**, Department of Botany, University of Delhi.
  - Seema Parveen, Heena Ambreen, Suman Kumaria, Manu Agarwal, **Arun Jagannath** and Shailendra Goel. “Exploring Genetic Diversity and the Existence of Genomic Imprinting in *Nymphaea* L.”.
  - Monika, Singh D. Heisnam, Anuja Jain, Priyanka Mohapatra, Gopal Joshi, Annu Aparajita, Manu Agarwal, **Arun Jagannath**, Shailendra Goel “Molecular understanding of Apomixis and role of small RNA based Regulatory pathways in Apomictic addition line of *Pennisetum glaucum* L.”.
3. 20th ADNAT convention and international symposium on “Genome editing technologies and their application in biology, medicine and agriculture”. February 16-18, **2017**. KIIT University.
  - Mohapatra P, Singh DH, Mishra G, Shukla RN, Agarwal M, **Jagannath A**, Kumar A, Ozias-Akins P, Hanna WW, and Goel S. “Understanding developmental aspects of apomixis through small RNA profiling, degradome and cell specific marker in sexual and addition lines in *Pennisetum glaucum*”.
4. 2<sup>nd</sup> International conference on Technological Advancement for Sustainable Agriculture and Rural development (TASARD-India), February 20-22, **2017**. Society for Plant Research (VEGETOS) and African-Asian Rural

Development Organisation (AARDO).

- Mohapatra P, Singh DH, Sharma M, Agarwal M, **Jagannath A**, Kumar A, Ozias-Akins P, Hanna WW, and Goel S. "Elucidation of developmental aspects of apomixis through cell specific molecular markers in sexual and addition lines of *Pennisetum glaucum*".
5. National Conference on "Plant Science Research: Looking beyond 21<sup>st</sup> century for environmental and agricultural revolution", February 5 – 7, **2016**. Society for Plant research (VEGETOS) and Department of Botany, University of Delhi.
    - Bharti Kukreja, Ankur R BHardwaj, Varsha Garg, Gopal Joshi, Aabha, Somya Sinha, Dinesh Singh, Kiran G. Banker, Kirti Kulkarni, Shailendra Goel, Surekha Katiyar-Agarwal, **Arun Jagannath**, Amar Kumar and Manu Agarwal. "Comparative analysis among salt tolerant and sensitive genotypes of *Brassica juncea*." Abstract: p99.
    - Bharti Kukreja, Rachita Yadav, Ramneek Gupta, Gopal Joshi, Rupam Kapoor, Shailendra Goel, **Arun Jagannath**, Amar Kumar and Manu Agarwal. "Expression changes of miRNAs in Safflower genotypes upon infection of soil borne fungus *Fusarium oxysporum*". Abstract: p21.
  6. EMBO conference on "Signaling in Plant Development", September 20-24, **2015**. Brno, Czech Republic.
    - Somya Sinha, Vivek Kumar Raxwal, **Arun Jagannath**, Surekha Katiyar-Agarwal, Shailendra Goel, Amar Kumar and Manu Agarwal. "Cold stress mediated transcriptional variability during silique development in Indian Mustard (*Brassica juncea* L.)".
  7. National Symposium on "Germplasm to Genes: Harnessing Biotechnology for Food Security and Health", August 9 – 11, **2015**. IARI, New Delhi. India.
    - Bharat Joshi, Manu Agarwal, Amar Kumar, Shailendra Goel and **Arun Jagannath**. Analysis of expression level variations of the Gibberellin signalling gene, *GAS4* in bold-seeded and small-seeded varieties of *Brassica juncea* (Indian Mustard) during seed development. Abstract: p 11.
  8. International Conference on Low Temperature Science and Biotechnological Advances, April 27 – 30, **2015**. NASC Complex, New Delhi, India.
    - Somya Sinha, Vivek Kumar Raxwal, **Arun Jagannath**, Surekha Katiyar-Agarwal, Shailendra Goel, Amar Kumar and Manu Agarwal. De novo transcriptome of cold-stressed siliques reveal distinct gene expression patterns during pod filling stages in Indian mustard (*Brassica juncea* L.). Abstract: p 176. **Won Best Poster Award**.
  9. 2<sup>nd</sup> International Hemipteran-Plant Interactions Symposium, June 22-25, **2014**. University of California, Riverside, CA, USA.
    - Rubina Chongtham, Vidhi Malik, Gopal Joshi, Manu Agarwal, Amar Kumar, Shailendra Goel and **Arun Jagannath**. De novo transcriptome of the mustard aphid, *Lipaphis erysimi*. Abstract: p 57.
  10. International Symposium on Plant Signaling & Behavior, March 7 – 10, **2014**. Department of Botany, University of Delhi, Delhi – 110007.
    - Vivek Kumar Raxwal, Sourav Ghosh, Shailendra Goel, **Arun Jagannath**, Amar Kumar, Vinod Scaria and Manu Agarwal. Landscape of open chromatin during abiotic stress in Arabidopsis. Abstract: p 112.
    - Shukla N, Chauhan R, Kaur P, Joshi G, Katiyar-Agarwal S, Agarwal M, **Arun Jagannath**, Goel S, Shankar R and Kumar A. Transcriptome profiling of roots of susceptible and resistant tomato cultivar at various stages of infection with root knot nematode (*Meloidogyne incognita*). Abstract: p 82.
    - Kaur P, Cheeni V, Joshi G, Heisnam d, Katiyar-Agarwal S, Agarwal M, **Arun Jagannath**, Goel S and Kumar A. Identification and characterization of miRNAome of tomato roots infected with root knot nematode (*Meloidogyne incognita*). Abstract: p 73.
  11. International Conference on Plant Biotechnology, Molecular Medicine and Human Health and 7<sup>th</sup> Annual Convention of ABAP, October 18-20, **2013**. University of Delhi South Campus, New Delhi – 110021.
    - Shivendra Kumar, Heena Ambreen, T. V. Murali, Sapinder Bali, Manu Agarwal, Amar Kumar, Shailendra Goel\* and **Arun Jagannath\***. Analysis of genetic diversity in a representative global collection of *Carthamus tinctorius* L. using AFLP. Abstract: p 255 (\*: Co-Corresponding Authors).
    - Heena Ambreen, Shivendra Kumar, T.V. Murali, Gopal Joshi, Sapinder Bali, Manu Agarwal, Amar Kumar, **Arun Jagannath\*** and Shailendra Goel\*. Isolation and characterization of microsatellites from the oilseed crop, *Carthamus tinctorius* L. using next generation sequencing. Abstract: As Addendum (\*: Co-Corresponding Authors). **Won Best Poster Award**.
    - Sonia Waikhom, Jyotsna Singh, Bharat Joshi, Rubina Chongtham, Manu Agarwal, Shailendra Goel, Amar Kumar, A.K. Singh and **Arun Jagannath**. Development of transgenic plants using lectin genes from onion and garlic for introduction of aphid resistance in the oilseed crop, *Brassica juncea* (Indian mustard). Abstract: p 243.
    - Vandna Patial, T.V. Murali, **Arun Jagannath**, Shailendra Goel, Manu Agarwal and Amar Kumar. Genetic transformation and improvement of oil quality in Safflower (*Carthamus tinctorius*). Abstract: p 175.
    - Ankur R. Bhardwaj, Rohit Nandan Shukla, Kiran Bankar, **Arun Jagannath**, Shailendra Goel, Surekha Katiyar-Agarwal, Amar Kumar and Manu Agarwal. Transcriptome profiling and identification of regulatory genes under high temperature stress in the oilseed crop, *Brassica juncea* (Indian mustard). Abstract: p120.
    - H. Dinesh Singh, Gopal Joshi, Ankur R. Bhardwaj, Manu Agarwal, Surekha Katiyar-Agarwal, **Arun Jagannath**, Amar Kumar, Peggy Ozias-Akins, Wayne W. Hanna and Shailendra Goel. Comparative small RNA analysis at different developmental stages of embryo sac in sexual and apomictic addition lines of *Pennisetum glaucum*. Abstract: p150.
    - Somya Sinha, Vivek Kumar Raxwal, **Arun Jagannath**, Amar Kumar, Shailendra Goel and Manu Agarwal.

- Synthetic microRNA mediated silencing of negative regulators to enhance frost tolerance in *Brassica juncea*. Abstract: p256.
- Vivek Kumar Raxwal, Sourav Ghosh, Somya Sinha, Rajsekhar R. Reddy, Surekha Katiyar-Agarwal, Shailendra Goel, **Arun Jagannath**, Amar Kumar, Vinod Scaria and Manu Agarwal. Ultra high resolution mapping of HSF A5 binding reveals new insights into HSR regulation. Abstract: p267.
- International Plant and Animal Genome Conference XX January 14-18, **2012**. San Diego, CA, USA
    - Heisnam D. Singh, Gopal Joshi, Ankur R. Bhardwaj, Surekha Katiyar-Agarwal, Manu Agarwal, **Arun Jagannath**, Peggy Ozias-Akins, Wayne W. Hanna, Shailendra Goel. Profiling of smRNAs unique to apomictic addition lines in *Pennisetum glaucum*.
  - National Symposium on Plant Biotechnology: New Frontiers, November 18-20, **2005**; Central Institute of Medicinal and Aromatic Plants (CIMAP), Lucknow.
    - Arumugam N, Gupta V, **Jagannath A**, Mukhopadhyay A and Pental D. Removal of marker gene in *Brassica juncea* using lox/Cre site-specific recombination. Abstract: p23.
    - Bisht NC, **Jagannath A**, Burma PK, Gupta V, Pradhan AK and Pental D. Retransformation of *barnase* lines with constructs containing *barstar* gene(s) in various combinations as a method for developing restorer lines. Abstract: p175.
  - 10<sup>th</sup> FAOBMB Congress, December 7-11, **2003**. Indian Institute of Science, Bangalore.
    - Bisht NC, **Jagannath A**, Burma PK and Pental D. Modifications of *barnase* and *barstar* gene expression systems for the development of efficient male sterile and restorer lines for hybrid seed production in crop plants. Abstract: p67.
  - 24<sup>th</sup> Annual Meeting of Plant Tissue Culture Association (India), October 12–14, **2001**; University of Delhi South Campus, New Delhi.
    - Jagannath A**, Arumugam N, Gupta V, Pradhan AK, Burma PK and Pental D. Development of a male sterility/restorer system for heterosis breeding in *Brassica juncea* (L.) Czern and Coss. National Symposium on Plant Biotechnology and Molecular Biology and the Abstract: p72.
  - XXIV All India Cell Biology Conference, November 24–26, **2000**; Jawaharlal Nehru University, New Delhi.
    - Jagannath A**, Bandyopadhyay P, Arumugam N, Gupta V, Burma PK and Pental D. The use of an insulator DNA fragment to protect tissue-specific expression of a cytotoxic gene (*barnase*) allows high frequency generation of transgenic male sterile lines in *Brassica juncea* L. Abstract (Poster): p139.
  - 70<sup>th</sup> Annual Session of The National Academy of Sciences, India. November 3 – 6, **2000**; Allahabad.
    - Jagannath A**, Arumugam N, Gupta V, Burma PK and Pental D. Tissue-specific expression of a lethal gene (*barnase*) by the use of an Insulator DNA allows high frequency generation of transgenic male sterile lines in *Brassica juncea* L. Abstract: p6.
  - 65<sup>th</sup> Annual Meeting of the Society of Biological Chemists (India), November 20–23, **1996**; Indian Institute of Science, Bangalore.
    - Jagannath A**, Chakravarthy S, Burma PK and Pental D. Strategies for avoiding homology-based transgene silencing. Abstract: p55.

#### Publications in the last one year

- Heena Ambreen, Shivendra Kumar, Amar Kumar, Manu Agarwal, **Arun Jagannath\*** and Shailendra Goel\* and **2018**. Association mapping for important agronomic traits in safflower (*Carthamus tinctorius* L.) core collection using microsatellite markers. **Frontiers in Plant Science**, <https://doi.org/10.3389/fpls.2018.00402>  
\*Joint corresponding authors

#### Conference Organization/ Presentations (in the last three years)

- National Conference on “Challenges and Strategies to Improve Crop Productivity in Changing Environment: An Integrated Approach”. January 12, **2018**. Department of Botany, Zakir Husain Delhi College, University of Delhi, Delhi, India. **Best Poster Award**.
  - Ankur R Bhardwaj, Gopal Joshi, Ritu Pandey, Shailendra Goel, **Arun Jagannath**, Amar Kumar, Surekha Katiyar-Agarwal and Manu Agarwal. “Investigation of development related conserved and novel miRNAs in *Brassica juncea* using high throughput small RNA sequencing”.
- XXVII Annual Conference of Indian Association for Angiosperm Taxonomy & International Symposium on Plant Systematics: Priorities and Challenges. November 10-12, **2017**, Department of Botany, University of Delhi.
  - Seema Parveen, Heena Ambreen, Suman Kumaria, Manu Agarwal, **Arun Jagannath** and Shailendra Goel. “Exploring Genetic Diversity and the Existence of Genomic Imprinting in *Nymphaea* L.”.
  - Monika, Singh D. Heisnam, Anuja Jain, Priyanka Mohapatra, Gopal Joshi, Annu Aparajita, Manu Agarwal, **Arun Jagannath**, Shailendra Goel. “Molecular understanding of Apomixis and role of small RNA based Regulatory pathways in Apomictic addition line of *Pennisetum glaucum* L.”.
- 20th ADNAT convention and international symposium on “Genome editing technologies and their application in biology, medicine and agriculture”. February 16-18, **2017**. KIIT University.



- Mohapatra P, Singh DH, Mishra G, Shukla RN, Agarwal M, **Jagannath A**, Kumar A, Ozias-Akins P, Hanna WW, and Goel S. "Understanding developmental aspects of apomixis through small RNA profiling, degradome and cell specific marker in sexual and addition lines in *Pennisetum glaucum*".
4. 2<sup>nd</sup> International conference on Technological Advancement for Sustainable Agriculture and Rural development (TASARD-India), February 20-22, **2017**. Society for Plant Research (VEGETOS) and African-Asian Rural Development Organisation (AARDO).
    - Mohapatra P, Singh DH, Sharma M, Agarwal M, **Jagannath A**, Kumar A, Ozias-Akins P, Hanna WW, and Goel S. "Elucidation of developmental aspects of apomixis through cell specific molecular markers in sexual and addition lines of *Pennisetum glaucum*".
  5. National Conference on "Plant Science Research: Looking beyond 21<sup>st</sup> century for environmental and agricultural revolution", February 5 – 7, **2016**. Society for Plant research (VEGETOS) and Department of Botany, University of Delhi.
    - Bharti Kukreja, Ankur R BHardwaj, Varsha Garg, Gopal Joshi, Aabha, Somya Sinha, Dinesh Singh, Kiran G. Banker, Kirti Kulkarni, Shailendra Goel, Surekha Katiyar-Agarwal, **Arun Jagannath**, Amar Kumar and Manu Agarwal. "Comparative analysis among salt tolerant and sensitive genotypes of *Brassica juncea*." Abstract: p99.
    - Bharti Kukreja, Rachita Yadav, Ramneek Gupta, Gopal Joshi, Rupam Kapoor, Shailendra Goel, **Arun Jagannath**, Amar Kumar and Manu Agarwal. "Expression changes of miRNAs in Safflower genotypes upon infection of soil borne fungus *Fusarium oxysporum*". Abstract: p21.

#### Research Projects (Major Grants/Research Collaboration)

1. DBT-Centre of Excellence Grant Phase II: PI in DBT project on "Transgenic approaches for resistance to mustard aphids", Satellite Project under 'Centre of Excellence on Genome Mapping and Molecular Breeding of *Brassicac*s' awarded to University of Delhi South Campus and University of Delhi, Delhi (2015 – 2020).
2. DST-PURSE Grant Phase II: PI in DST-PURSE grant on "Genetic and genomic approaches for improvement of the oilseed crop, *Carthamus tinctorius* (Safflower)." (2014 – 2017).
3. DST-PURSE Grant Phase I: PI in DST-PURSE grant on "Genetic and genomic approaches for improvement of the oilseed crop, *Carthamus tinctorius* (Safflower)." (2010-2013).
4. DBT-Centre of Excellence Grant Phase I: PI in DBT project on "Transgenic approaches for resistance to mustard aphids", Satellite Project under 'Centre of Excellence on Genome Mapping and Molecular Breeding of *Brassicac*s' awarded to University of Delhi South Campus and University of Delhi, Delhi (2009 – 2015).
5. DBT project on "Identification, characterization and validation of candidate genes influencing seed size and seed number in the oilseed crop, *Brassica juncea* (Indian mustard)" (2009 – 2012). Project completed. (Progress rating: "Very Good" by DBT Task Force on Agricultural Biotechnology)

#### Awards and Distinctions

- CSIR (NET) Fellowship by Council of Scientific and Industrial Research, Ministry of Human Resource Development, Government of India (1994-1999).
- Prof. E.R.B. Shanmugasundaram Endowment Medal by Madurai Kamaraj University for securing 1<sup>st</sup> position in the University in M.Sc. Biotechnology (1994).
- K. Ayyamperumal Pillai Endowment Medal by Madurai Kamaraj University for securing 1<sup>st</sup> position in the University in M.Sc. Biotechnology (1994).
- Prof. S. Krishnaswamy Memorial Endowment Prize by Madurai Kamaraj University for securing 1<sup>st</sup> position in the University in M.Sc. Biotechnology (1994).
- Department of Biotechnology Fellowship by Government of India for pursuing studies leading to M.Sc. Biotechnology (1992-1994).
- University of Delhi Merit Award for securing meritorious position in B.Sc. (Hons) – Botany examination (1991).
- Central Board of Secondary Education Merit Scholarship for securing meritorious position in Delhi Secondary School Examination, 1987 (1987-1989).
- Certificate of Merit by Delhi Administration in lieu of scholarship for securing meritorious position in Delhi Secondary School Examination (1987).
- Certificate of Merit by Central Board of Secondary Education for outstanding academic performance and for being among the top 1% of successful candidates of the Delhi Secondary School Examination (1987).
- Parthasarathy Memorial Scholarship and P.V. Chakravarthy Memorial Scholarship by Delhi Tamil Education Association for securing 1<sup>st</sup> position among all successful candidates of DTEA Senior Secondary Schools,

New Delhi in the Delhi Secondary School Examination (1987).

#### Association With Professional Bodies

- Life member, Indian Society of Plant Morphologists, Department of Botany, Delhi University, Delhi.
- Invited Member, Botanical Society of America (2013)
- Life Member, Indian Society of Translational Research, School of Life Sciences, JNU, New Delhi.

#### Other Activities

##### (A) Invited Lectures

Year	Title of lecture	Institution
2018	<i>Transgenic Technology: Opportunities or Risks?</i>	The INSPIRE Internship Program-2018, Department of Science and Technology (DST), Govt. of India at Amity University, Gurugram
2018	<i>Plant Biotechnology: Queries and Answers</i>	Refresher Course in Life Sciences, Centre for Professional Development in Higher Education (CPDHE), University of Delhi
2017	<i>Biological Databases</i>	Bioinformatics Training Program for College Teachers, Sri Venkateswara College, University of Delhi
2017	<i>Transgenic Plants: Innovation of the past or relic of the future?</i>	Bhaskaracharya College of Applied Sciences, University of Delhi
2016	<i>Plant Biotechnology – Basics and Applications</i>	Academic Staff College, Jawaharlal Nehru University (JNU), New Delhi
2016	<i>Plant Biology – Science without Boundaries</i>	Deshbandhu College, University of Delhi
2016	<i>Programming logic - A beginner's guide</i>	Miranda House, University of Delhi
2015	<i>Plant Biology: from Basic Science to Technology Development</i>	Dyal Singh College, University of Delhi
2015	<i>Biological sciences – scientific innovation, technology or information overload?</i>	Vth INSPIRE Internship Program, Department of Science and Technology (DST), Govt. of India at AMITY University Campus, Manesar
2015	<i>Inter-disciplinarity in Plant Biology</i>	“Ciencia – An Educational Science Lecture Series”, Kirori Mal College, University of Delhi
2014	<i>From Basic Science to Technology Development in Plant Systems</i>	Refresher Course in Life Sciences, Departments of Botany and Zoology and Centre for Professional Development in Higher Education (CPDHE), University of Delhi
2014	<i>Bioinformatics in Biology Education and Research</i>	Teachers’ Training Workshop on Genomics and Bioinformatics, Sadhu Vaswani International School for Girls, New Delhi.
2014	<i>Biological Sciences – Pure Science or Technology?</i>	XV International Genetics Congress Trust Lecture, Laxman Public School, New Delhi
2014	<i>Plant Biotechnology – Basics, Applications and Current Paradigms</i>	Academic Staff College, Jawaharlal Nehru University (JNU), New Delhi
2014	<i>Fundamentals of Computer Programming</i>	Miranda House, University of Delhi
2013	<i>Databases in Biology Education and Research</i>	Sri Venkateswara College, University of Delhi
2013	<i>Integrative Plant Biology – Basics and Applications</i>	HansRaj College, University of Delhi

2012	<i>Science, Technology and Education</i>	Centre for Professional Development in Higher Education (CPDHE), University of Delhi
2012	<i>Databases-Basics and Applications</i>	DBT-funded Workshop on "Introduction to Bioinformatics", Zakir Hussain College, University of Delhi.
2012	<i>Computational power and biological systems</i>	Maitreyi College, University of Delhi
2012	<i>Integrative Plant Biology – Basics and Applications</i>	DBT Star College Lecture, Banaras Hindu University (BHU), Varanasi
2012	<i>Databases-Basics and Applications</i>	Ramjas College, University of Delhi
2012	<i>Biological sciences – information overload or conceptual reasoning?</i>	Khalsa College, University of Delhi
2011	<i>Integrative Plant Biology – Basics and Applications</i>	UGC-sponsored Teachers' Training Workshop, Department of Zoology, University of Delhi
2011	<i>Genetics and Biotechnology of Crop Plants</i>	National Symposium on "Frontiers and Avenues in Plant Sciences", Shivaji College, University of Delhi
2011	<i>Introduction to Biological Databases</i>	DBT-sponsored Bioinformatics Workshop for Life Sciences Faculty, Bioinformatics Centre, Sri Venkateswara College, University of Delhi.
2011	<i>Introduction to nucleic acid and protein databases and sequence retrieval from databases.</i>	Workshop on Fundamentals of Bioinformatics for faculty members, Ramjas College, University of Delhi
2011	<i>Bioinformatics</i>	UGC-sponsored workshop, Maitreyi College, University of Delhi
2011	<i>Introduction to Bioinformatics</i>	Gargi College, University of Delhi
2011	<i>Integrative Plant Biology – Basics and Applications</i>	Kirori Mal College, University of Delhi
2010	<i>Introduction to Biotechnology</i>	XV International Genetics Congress Trust Lecture, Amity International School, Gurgaon
2009	<i>Emerging areas of Plant Sciences – Model Systems, Bioinformatics &amp; Comparative Genomics</i>	HansRaj College and Ramjas College, University of Delhi.
2006	<i>Improvement of oil quality in mustard</i>	Symposium on "Emerging Trends in Biochemistry", February 9-10; Panjab University, Chandigarh
2005	<i>Biological Databases</i>	National Workshop on Bioinformatics and Computational Biology, Department of Biochemistry, Sri Venkateswara College, University of Delhi.

#### **(B) Development of Teaching Material/Course content**

- Development (Content Writer and Reviewer) of E-content for Undergraduate Course in Botany [in coordination with Institute of Life-Long Learning (ILLL), University of Delhi] under the aegis of Ministry of Human Resource Development, National Mission on Education Information Communication Technology (NME-ICT)
  - Content Writer – (i) Databases – Basics and Applications.  
(ii) Introduction to Bioinformatics
  - Reviewer – (i) Sequence Alignment  
(ii) NCBI – Similarity Searching Tool – BLAST  
(iii) NCBI – Database Introduction  
(iv) NCBI – Data Submission  
(v) Applications of Bioinformatics
- Institute of Life-Long Learning (ILLL), University of Delhi – Subject Expert – Reviewing Committee, B.Sc. – Life Sciences program (2008).

#### **(C) Other academic and extra-curricular activities**

- Reviewed research articles for the following journals:
  - Acta Physiologia Plantarum
  - BMC Evolutionary Biology
  - BMC Genomics
  - Frontiers in Plant Science
  - Journal of Biosciences
  - Journal of Genetics
  - Journal of Plant Biochemistry and Biotechnology
  - Nature Scientific Reports – Nature Publishing Group
  - Plant Cell Reports
  - PLoS-ONE
  - Revista Brasileira de Farmacognosia - Brazilian Journal of Pharmacognosy
- Reviewed research proposals submitted to the Agricultural Biotechnology Task Force of DBT.
- Judge, Crisis Committee simulation, Model United Nations, Amity Youth Fest, 2017
- Quizmaster, “DUBS Annual Quiz competition – 2015” conducted under the aegis of Delhi University Botanical Society (March 24, 2015).
- Faculty participant from the Department of Botany for “Antardhvani – 2015”, Feb 20-22 at Delhi University; Conducted “Botanical Quiz” and “Open Quizzing Rounds” at the Department of Botany stall.
- Invited Member, Panel Discussion on “Bio-terrorism”, February 13, 2015 at Amity University, Noida.
- Jury Member, Indian National Science Education Fair (INSEF) – North Region, December 02, 2014, Amity University, Noida.
- Jury Member, Inter-school Science Festival Competition “Scientia-2013” at Delhi Public School, Mathura Road.
- Faculty Resource person in seven-week training program for visiting Faculty Members of Kabul University, Afghanistan, February 2013
- Member, QUEST team, University of Delhi. 2009 - 2014.
- Quizmaster, “DUBS Annual Quiz competition – 2012” conducted under the aegis of Delhi University Botanical Society.
- Involved as an emcee for SPICMACAY programs and music concerts at Delhi University South Campus.
- Active participant in various extra-curricular activities at school and college levels including debates, elocution, essay writing, quizzes, music, theatre and painting competitions and won several awards and certificates.
- Associated with fund collection campaigns of the NGO, “Help the Aged”, in school.

Signature of Faculty Member

- You are also requested to also give your complete resume as a DOC or PDF file to be attached as a link on your faculty page.