Curriculum Vitae of Prof. Dr. G. S. Randhawa

Name: **GURSHARN SINGH RANDHAWA**

Present Position: **Professor, Department of Biotechnology, Indian Institute of Technology Roorkee**

Date of Birth: February 6, 1953

Nationality: Indian

Address: **Department of Biotechnology, Indian Institute of Technology, Roorkee-247667, Uttarakhand, INDIA.**

Telephone: 91-1332-285808 (Off), 91-1332-284471 (Lab), 91-1332-286157 (Lab), 91-1332-285024 (Res)

E-mail: SHARNFBS@iitr.ernet.in
GURSHARNRANDHAWA@gmail.com

Fax: 91-1332-273560, 91-1332-286151, 91-1332-285808

Areas of interest: Plant Molecular Biology, Recombinant DNA Technology / Genetic Engineering, Molecular Genetics of *Rhizobium*-legume Symbiosis

Education:

1980	Ph.D. (Genetics). Punjab Agricultural University, Ludhiana, India. OGPA 3.50/4.00.
1976	M.Sc. (Genetics). Punjab Agricultural University, Ludhiana, India; First Division; OGPA 3.50/4.00.
1974	B.Sc. (Biology). Guru Nanak University, Amritsar, India; First Division; 70.0% marks; 6th position in University.
1969	Matriculation. Punjab University, Chandigarh, India; First Division; 68.6% marks.

Employment:

1996 to present	**Professor**, Department of Biotechnology, Indian Institute of Technology (formerly University of Roorkee), Roorkee, India.
2005 (June-July)	**Visiting Scientist**, Department of Plant Sciences, North Dakota State University, Fargo, North Dakota, U.S.A.
2001(Oct.-Dec.)	**Visiting Scientist**, Pioneer Hi-Bred International Inc., Johnston, U.S.A.
1986-1996	**Reader**, Department of Biosciences & Biotechnology, University of Roorkee, Roorkee, India.
1984-1986	**Lecturer**, Department of Biosciences & Biotechnology, University of Roorkee, Roorkee, India.
1982-1984	**Research Associate**, Jawaharlal Nehru University, New Delhi, India.
1980-1982	**I.T.C. Fellow**, Hungarian Academy of Sciences, Hungary.

Research projects completed:

2005-2010	**Biofortification of wheat for micronutrients through conventional and molecular breeding approaches. D.B.T., India funding for Rs. 84, 34, 000.**
2005-2007	**Development of Diploid Wheat Deletion Lines for Reverse Genetics. NSF, USA funding for $ 95,400. Developing Country Collaboration in Plant Genome Research (India &US).**
2005-2007	Isolation and characterization of bacteria from industrial effluents. D.S.T., India funding for Rs.10,50, 000.
1996-1998	Structural and enzymatic protein changes in higher plant cell walls under saline stress. U.P.C.S.T. funding for Rs. 1,69,000.
1990-1993	Isolation of tonoplasts ATPase mRNA from mungbean. U.G.C. funding for Rs. 4,00,000.
1990-1993	Nitrogen fixing genes in *Rhizobium meliloti.* D.S.T. funding for Rs. 9,00,000.
1985-1992	Centre for Bioconversion. M.H.R.D. funding for Rs. 63, 34, 000.

Teaching experience:

1. Total period of teaching: **27 years and two months** (July 1984 to date).
2. Courses taught to Postgraduate students: Cellular and Molecular Biology, Microbial Genetics, Genetic Engineering, Advanced Techniques in Biochemistry and Molecular Biology, Fermentation Processes, Applied Microbiology, Genetics, Recombinant DNA Technology, Cell and Tissue Culture Technology, Gene Regulation, General Biology, Biosciences Laboratory Course & Biotechnology Laboratory Course.
3. Courses taught to Undergraduate students: Principles of Biotechnology; Fundamentals of Biotechnology; Genetics; Genetic Engineering; Genetics & Molecular Biology.

Research Experience : 37 Years

Ph.D. theses supervised : Completed : 23; In progress : 8

1. Bioconversion of lignocellulosic waste materials. **Dr. Ashwani Kumar Lakhani** (1990).
2. Effect of water quality parameters on biota. **Dr. Dinesh Kumar Garg** (1991).
3. Characterization of genes involved in the biosynthesis of amino acids in *Rhizobium meliloti.* **Dr. Manju Rani Agarwal** (1995).
4. Some immunological and chemotherapeutic studies on *in vitro* exoerythrocytic stages of rodent malaria. **Dr. Aditya Bhushan Pant** (1996).
5. Isolation and characterization of stress tolerant strains of *Rhizobium*. **Dr. Umesh Kumar** (1997).
6. Studies on estuarine oil spill management. **Dr. Suneel Chhatre** (1999).
7. Genetic and biochemical studies on biosynthesis of amino acids, nucleotide bases and vitamins in *Rhizobium.* **Dr. K. E. Vineetha** (1999).
8. Genetic and biochemical studies on biosynthesis of some amino acids in *Rhizobium.* **Dr. C. Krishna Prasad** (1999).
9. Genetic and biochemical studies on stress tolerance in *Rhizobium.* **Dr. Ihsan Arfan Hussein Ali** (2000).
10. Studies on the role of pyrimidine biosynthetic pathway of *Rhizobium meliloti* in symbiosis. **Dr. Neeraj Vij** (2000).
11. Studies on isoleucine, valine and leucine auxotrophs of *Sinorhizobium meliloti.* **Dr. Raad Hassani Sultan** (2001).
12. Studies on auxotrophic mutants of sulfur-containing amino acids of *Sinorhizobium meliloti.* **Dr. Basil Abdul-Zahrah Abbas** (2001).
13. Role of arginine biosynthetic pathway of *Sinorhizobium meliloti* in symbiosis. **Dr. Anvita Kumar** (2003).
14. Studies on the symbiotic role of arginine biosynthetic pathway of two genera of rhizobia. **Dr. Nand Kumar Singh** (2007).
15. Molecular mapping and cloning of polyembrony (*OsPE*)insertional mutant in basmati rice. **Dr. Anju Bhalla** (2008).
16. Mapping and molecular characterization of dwarf (*OsGAI/Sd*) insertional mutant in basmati. **Dr. Mankesh Kumar** (2008).
17. Introgression and molecular mapping of high grain Fe and Zn content from *Aegilops* into wheat. **Dr. Vijay Kumar Tiwari** (2009).
18. Molecular analysis of wheat-*Ae. kotschyi* derivatives with high grain iron and zinc content. **Dr. Nidhi Rawat** (2009).
19. Isolation and characterization of antifungal compounds from *Diospyros kaki.* **Sunity** (2010).
20. Studies on arsenic resistance properties in *Rhizobium*-legume symbiosis. **Mr. Durga Prasad Panigrahi** (2010).
21. In vitro model of cerebral stroke : Therapeutic potential and metabolism of trans-resveratrol, a natural antioxidant from grapes. **Dr. Megha Agrawal** (2010).

22. Isolation and molecular characterization of alien addition lines in wheat for micronutrient. **Ms. Nancy Girdharwal** (Submitted).
23. Molecular genetic and biochemical studies on galactomannan production in guar (*Cyamopsis tetragonoloba*). **Ms. Pranita Bhatele** (Submitted).
24. Morphological, biochemical and molecular characterization of guar (*Cyamopsis tetragonoloba*) accessions. **Mr. Nagesh K. A.** (In progress).
25. Genetic transformation of cluster bean (*Cyamopsis tetragonoloba*). **Ms. Swati Verma** (In progress).
26. Molecular marker development and its application in *Cyamopsis tetragonoloba*. **Ms. Manisha Choudhary** (In progress).
27. Biochemical and molecular characterization of alpha-galactosidase from different parts of guar seed. **Ms. Shilpi Kumari** (In progress).
28. Formulation and evaluation of guar gum based drug delivery system. **Mr. Umesh Kumar Tanwar** (In progress).
29. Physiological, biochemical and molecular studies on salt stress in cluster bean. **Ms. Shalini Pareek** (In progress).
30. Galactomannan. **Ms. Pallavi Gehlot** (In progress).
31. Galactomannan. **Ms. Navneet Kaur** (In progress).

M. Sc. research projects supervised: 63 (Completed)

Summer projects supervised: 18

B. Tech. project students supervised : 4 (Completed)
2 (In progress)

Awards/Honours:

1988	**Award of Honour** from Young Writers Association, Punjab Agricultural University, Ludhiana.
1982-1984	Research Associate, Indian Council of Agricultural Research.
1980-1982	**I.T.C. Fellowship, Hungarian Academy of Sciences, Hungary.**
1979-1980	Junior Research Fellowship, Department of Atomic Energy, Govt. of India.
1976-1978	Punjab Agricultural University Merit Fellowship (Ph.D.).
1974-1976	Punjab Agricultural University Merit Fellowship (M.Sc.).

International training courses/ workshops attended as a trainee:

1. **E.M.B.O. (European Molecular Biology Organization) Intensive Training Course on Molecular Genetics: Bacterial Genetics, Pavia University Pavia, Italy, Sept. 16-30, 1981.**
2. **International Training Course on Fungal Protoplast Fusion and its Applications, J. Attila University, Szeged, Hungary, July 6-16, 1981 (sponsored by U.N.D.P., U.N.E.P., I.C.R.P.).**
3. **International Training Course on selected topics of Modern Biology, Biological Research Centre, Hungarian Academy of Sciences, Szeged, Hungary. Oct. 1,**

1980-Nov. 30, 1981 (sponsored by U.N.D.P., I.C.R.O. and Hungarian Academy of Sciences).

4. Afro-Asian Writers Workshop, New Delhi, India, Feb. 4-20, 1980 (sponsored by India International Centre and Ministry of Education, Govt. of India).
5. International Training Course on Biofuels, Bioproductivity and Photosynthesis, Madurai Kamaraj University, Madurai, India, Dec. 6-16, 1978 (sponsored by U.N.E.P.).

Administrative assignments at Indian Institute of Technology Roorkee/University of Roorkee :

1. **Member-Secretary, Institute Biosafety Committee, Indian Institute of Technology Roorkee (Jan 1, 2008-till date).**
2. Member-Secretary, Departmental Professorial Committee, Department of Biotechnology, Indian Institute of Technology Roorkee (Jan. 2, 2007-till date).
3. **Head (Chairman), Department of Biotechnology, Indian Institute of Technology, Roorkee (Jan. 1, 2004 – Jan. 1, 2007).**
4. Member, Academic Committee for the M. Tech. (Conservation of Rivers and Lakes) programme of Alternate Hydro Energy Centre, Indian Institute of Technology Roorkee (2004-2007).
5. **Member, Senate, Indian Institute of Technology Roorkee (2002-to date).**
6. **Member, Board of Post Graduate Studies and Research, Indian Institute of Technology Roorkee (2002-03; 2008).**
7. **Member, Board of Academic Research, Indian Institute of Technology Roorkee (2009-till date).**
8. Chairman, Departmental Research Committee, Department of Biotechnology, Indian Institute of Technology Roorkee (2002-03; 2008-to date).
9. Chairman, Postgraduate Academic Programme Committee, Department of Biosciences & Biotechnology, University of Roorkee, Roorkee: 1988 to 2002.
10. **Member, Academic Council, University of Roorkee: 1988-89, 1992-98.**
11. **Member, Senate, University of Roorkee: 1989-96.**

Organizing assignments for Symposia/Seminars/Training courses/Workshops :

1. Member, National Advisory Committee of the **International Conference on Microbial Biotechnology for Sustainable Development**, Punjab University, Chandigarh, India, November 3-6, 2011.
2. Member, International Advisory Committee of the **International Symposium on Recent Advances in Cross-Disciplinary Microbiology : Avenues and Challenges,** Birla Institute of Technology, Mesra, Ranchi, Jharkhand, December 14-17,2010.
3. Member, National Advisory Committee, **National Conference on Leads for Futuristic Biotechnological Inputs : Indian Context**, IAMR, Ghaziabad, March 26-27, 2010.

4. Member, National Advisory Committee, National Conference on Seabuckthorn : Emerging Trends in Production to Consumption, CSK Himachal Pradesh Krishi Vishvavidyalaya, Palampur, India, February 16-18, 2010.
5. Member, Programme Committee, National Conference on DNA-2009 : DNA The Decisive Evidence, Andhra Pradesh Police Academy, Hyderabad, India, August 17-19, 2009.
6. Member, Advisory Committee, National Symposium on Emerging Trends in Biomedical Sciences, S. B. S. Post Graduate Institute of Biomedical Sciences & Research, Dehra Dun, India, February 27-28, 2009.
7. Member, National Advisory Board, Symposium on Biotechnology : Vision 2020, SVBP University of Agriculture & Technology, Meerut, India, December 8-9, 2008.
8. Member, National Advisory Committee, National Conference on Advances in Fermentation Technology, MGNIRSA, Hyderabad, India, November 9-10, 2008.
9. **Member, National Advisory Committee, International Conference on Molecular Biology and Biotechnology, Banasthali University, Rajasthan, India, October 19-21, 2008.**
10. **Convener, Summer School on Advanced Techniques in Biotechnology, Indian Institute of Technology Roorkee, India, August 4-10, 2008.**
11. Member, Organizing Committee of the The Lecture Series on Biotechnology "BIOLOGIC 08" held at O.N.G.C., Dehradun, India on April 15, 2008.
12. Member, Advisory Committee, National Conference on Microbial Biodiversity : Avenues and Applications, S. B. S. Post Graduate Institute of Biomedical Sciences & Research, Dehra Dun, India, March 17-18, 2007.
13. **Chairman, Organizing Committee, National Biotechnology Conference – 2006 : Current Trends & Future Perspectives, Indian Institute of Technology Roorkee, India, September 2-3, 2006.**
14. Member, Advisory Committee, National Symposium on New Horizons in Fermentation and Food Biotechnology-2006, Patiala, India, March 21-22, 2006.
15. **Chairman, Organizing Committee, Symposium on Therapeutic and Diagnostic Products for Reproductive Health : Recent Trends and Future Prospects, I. I. T. Roorkee, India, 14-16 February, 2006.**
16. **Chairman, Organizing Committee, Seminar-cum-Exhibition on the Transfer of Horticulture Production Technology to Needy Farmers and Entrepreneurs, Roorkee, India, January 19-20, 2006.**
17. **Chairman, Organizing Committee, QIP Workshop on Curriculum Development of B.Tech. (Biotechnology) programme, Indian Institute of Technology Roorkee, April 24, 2004.**
18. Member, Organizing Committee, National Seminar on Bioinformatics, Indian Institute of Technology Roorkee, March 21, 2004.
19. Coordinator of the Programme to Commemorate the Golden Jubilee Year of the Discovery of DNA Double Helix, Department of Biotechnology, I.I.T.Roorkee, November 22, 2003.
20. Member, Organizing Committee, National Symposium on Biophysics: 21-23 February 2003 & International Workshop on Education and Capacity Building

in Biophysics: Needs of the Asian African Region, 24-25 February 2003, Department of Biotechnology, I.I.T. Roorkee.

21. Secretary Resource, National Workshop on Role of Information Technology and Continuing Education in Human Resource Development, Roorkee, India, Oct. 24-25, 1998.
22. Organizing Secretary, National Seminar on Biofertilizers: Prospects and Constraints, University of Roorkee, Roorkee, India, April 15, 1997.
23. Treasurer, International Satellite Symposium on Complex Carbohydrates, University of Roorkee, Roorkee, India, Sept. 15-16, 1994.
24. Course Coordinator, Training course on Techniques in Biotechnology, Continuing Education Department, University of Roorkee, Roorkee, India, Aug 18-Sept. 7, 1988.
25. Course Coordinator, Training course on Techniques in Genetic Engineering, Continuing Education Department, University of Roorkee, Roorkee, India, May 3-21, 1988.

Reviewing and Editorial Assignments :

1. **Member, Editorial Board, Indian Journal of Experimental Biology (A journal published by the Council of Scientific & Industrial Research, Govt. of India, Indexed in PubMed) (2008-2010).**
2. **Editor, Indian Journal of Microbiology (A journal published by Springer Verlag, Germany) (2006-to date).**
3. **Guest Editor, Special Issue (October, 2003) on Bacterium-plant Symbiosis, Indian Journal of Experimental Biology (A journal published by the Council of Scientific & Industrial Research, Govt. of India, Indexed in PubMed).**
4. Referee, **Clinical Transplantation** (John Wiley & Sons, Inc.)**, The Journal of Urology** (American Urological Association, Inc.), **Cancer Biology & Therapy** (Landes Bioscience, Austin, U.S.A.)**, Oncology Research Incorporating Anti-Cancer Drug Design** (Cognizant Communication Corporation, NY, U.S.A.)**, DNA and Cell Biology** (Mary Ann Liebert, Inc., NY, U.S.A.), **SABRAO Journal of Breeding & Genetics** (Manila, Philippines), **Critical Reviews in Biotechnology** (Taylor & Francis), **Cancer Letters** (Elsevier), **Journal of Basic Microbiology** (Wiley-VCH), **Indian Journal of Microbiology** (Springer, Germany), **Indian Journal of Experimental Biology**, **Indian Journal of Biotechnology**, **Current Science** (India) , **Journal of Plant Biochemistry and Biotechnology, Journal of Human Genetics** (NPG & MTS) & **Molecular Biology Reports** (Springer, Netherlands), **PLoS one** (Public Library of Science).
5. Member, Editorial Committee, University Grants Commission, Govt. of India (1999).

Assignments for the selection of faculty members, scientists and technical staff :

1. **Member, Selection Committees for appointing faculty members/ scientists** in Panjab University, Chandigarh (2011), National Environmental Engineering Research Institute, Nagpur (2011), Indira Gandhi National Open University, New Delhi (2011), C. C. S. Haryana Agricultural University, Hisar (2011), Guru Gobind Singh Indraprastha University, Delhi (2010), V. B. S. Purvanchal University, Jaunpur (2010), Delhi Technological University, Delhi (2010), Harcourt Butler Technological Institute, Kanpur (2010), D. D. U. University, Gorakhpur (2009), Guru Nanak Dev University, Amritsar (2009, 2010), Institute of Engineering & Technology, Lucknow (2009), Shobit University, Modipuram (2009), Maharishi Dayanand University, Rohtak (2007), Barkatullah University, Bhopal (2006), G.B.Pant University of Agriculture and Technology, Pantnagar (2006), K. L. D. A. V. College, Roorkee (2005, 2006, 2009, 2010), Rani Durgavati University, Jabalpur (2005, 2007), National Institute of Technology, Jalandhar (2005), Rajeev Gandhi Technological University, Bhopal (2005, 2006, 2007), Sanjay Gandhi Post Graduate Institute of Medical Sciences, Lucknow (2003, 2004), Ambala College of Engineering & Applied Research, Ambala (2003, 2010), Punjabi University, Patiala (2001, 2003), S.B.S. Post Graduate Institute of Biomedical Sciences & Research, Dehradun (2001, 2003, 2007, 2008, 2009, 2010), Indian Council of Forestry Research & Education, Dehra Dun (1998)

2. **Member, Selection Committees for appointing faculty members in the Indira Gandhi National Open University as Visitor's Nominee (H. E. President of India's Nominee) (2008, 2009).**
3. **Member, Selection Committee for appointing the Head, Department of Molecular Biology & Genetic Engneering, G. B. Pant University of Agriculture & Technology, Pantnagar (2009).**
4. Chairman, Assessment Committee for grant of merit promotion/ advance increments to technical personnel of Group- II (Laboratory Technicians) in Cat. III, National Dairy Research Institute, Karnal (2002-03).
5. Chairman, Assessment Committee for Category I Technicians in the field of Stockman/ Field/ Farm, National Bureau of Animal Genetic Resources, Karnal (2002-03).
6. Member, Department Promotion Committee (Scientists), National Bureau of Animal Genetic Resources, Karnal (2002-03 & 2007-08).

Ph. D. Examinations :

Evaluated/ conducted viva voce examination of Ph.D. theses of National Dairy Research Institute, Karnal, Indian Agricultural Research Institute, New Delhi, Punjab Agricultural University, Ludhiana, Punjab University, Chandigarh, Punjabi University, Patiala, Goa University, Goa, S.G. Post Graduate Institute of Medical Sciences, Lucknow, Aligarh Muslim University, Aligarh, M.D.

University, Rohtak, Guru Nanak Dev University, Amritsar, Kurukshetra University, Kurukshetra , G.B.Pant University of Agriculture and Technology, Pantnagar, CCS Haryana Agricultural University, Hisar, CSJM Kanpur University, Kanpur , Devi Ahilya University, Indore , University of Delhi, Guru Jambeshwar University, Hisar, CCS University, Meerut, D.D.U.Gorakhpur University, Gorakhpur , Thapar University, Patiala, Forest Research Institute, Dehradun, Dr. Y. S. Parmar University of Horticulture and Forestry, Nauni, Solan & Tezpur University, Tezpur.

Membership of administrative/scientific committees of other institutions/organizations :

1. Member, Scrutiny Committee, All India Council of Technical Education (AICTE), Govt. of India, for technical institutions of South Central India (2011).
2. Member, Expert Committee for Designing the Syllabi of M. Sc. (Life Sciences) Programme, Indira Gandhi National Open University, New Delhi, India (2010).
3. Member, Post Graduate Board, Deenbandu Chhotu Ram University of Science & Technology (A Govt. of Haryana University), Murthal (2009).
4. Member, Expert Group for Brainstorming Meeting to prepare Action Plan Delineating the Activities of the School of Vocational Education & Training, Indira Gandhi National Open University, New Delhi (the largest Open University in the world) ((2009).
5. Member, Expert Committee of G. B. Pant University of Agriculture & Technology, Pantnagar to study the infrastructure, equipments and other facilities available at the Institute of Biotechnology, Patwadanger and to suggest R & D activities to be taken up by the institute (2008).
6. **DBT (Department of Biotechnology, Govt. of India) representative in the Institute Biosafety Committee, G. B. Pant University of Agriculture & Technology, Pantnagar, India (2008-till date).**
7. Member, Screening Committee, Young Scientist and Best Poster Awards, Uttarakhand State Science & Technology Congress-2008.
8. Expert (Biology), Council of Boards of School Education in India (2008).
9. Member, Research Degree Committee, U. P. Technical University, Lucknow (2008-09).
10. Member, ICAR (Indian Council of Agricultural Research) Course Curricula Committee for M. Sc. & Ph. D. programmes (2008).
11. Member, Board of Studies in Engineering & Technology, Maharishi Dayanand University, Rohtak (2007-08).
12. **Member, National Jury, Agilent Engineering and Technology Awards – 2007 & 2008 (Awards given by Agilent Technologies, U. S. A.).**
13. Member (subject expert), Research Advisory Committee, Dr. B. R. Ambedkar National Institute of Technology, Jalandhar (2007-09).
14. **Academic Advisor of the Environmental Working Group, established by the Ministry of Railways, Govt. of India as a committee overlooking**

environmental aspects of the Feasibility Study for the Development of Dedicated Freight Corridor Project (November, 2006 to October, 2007). Worked with experts of Japan International Cooperation Agency (JICA) of Japan which carried out the Feasibility Study of the first phase of the DFC project. Total cost of the Dedicated Freight Corridor Project : Rs. 60, 000 Crore.

15. Member, Board of Studies in Biotechnology, HNB Garhwal University, Srinagar Garhwal, Uttaranchal (2005-07).
16. Member, Task Force for HRD in Biotechnology in Uttaranchal (2006-07).
17. **Member, Court, Banaras Hindu University, Varanasi (2006-08). This nomination was by H. E. President of India.**
18. Member, Purchase Committee (For Biotechnology Equipments)(2004) & Research Degree Committee in Biotechnology (2005-07), Rajiv Gandhi Proudyogiki Vishwavidyalaya, (Technological University of Madhya Pradesh) Bhopal.
19. Member, Expert Committee of All India Council of Technical Education (AICTE) to assess the technical institutions in the South Western Region, Bangalore (2004).
20. External Expert, Board of Studies, Department of Biotechnology, Punjabi University, Patiala (2004-05).
21. Member, Expert Committee of All India Council of Technical Education (AICTE) to assess the M.Tech.(Biotechnology) programme of Rajiv Gandhi Proudyogiki Vishawavidylya, Bhopal (2004).
22. Member, Expert Committees of Department of Science & Technology and Department of Biotechnology, Govt. of India, to review the project proposals submitted for funding.
23. External Expert, Board of Postgraduate Studies in Microbiology, Kurukshetra University, 2002-2004.
24. Member, Board of Studies, S.B.S.M. Post Graduate Institute of Biomedical Sciences and Research, Dehradun, 2002.
25. Member, Board of Studies, B. Tech. Biotechnology Engineering, Kurukshetra University, Kurukshetra (2001-2002).
26. Member, Expert Committee, H.N.B. Garhwal University, Srinagar (Garhwal) for inspection of S.B.S.M.P.G.I.B.S.R., Dehradun (2001).
27. Member, Assessment Committee, J.R.F., Gurukul Kangri Vishwavidyalaya, Hardwar (2001).
28. Member, Executive Committee (1997-1999) and Additional Secretary (1999-2000), Indian Society for Continuing Engineering Education.

Educational films produced for the countrywide classroom programme of University Grants Commission (UGC):

1. Milk Microbiology- Part I (22 min), Subject Experts: **Dr. G.S. Randhawa** & Dr. S.K. Sisodia.
2. Milk Microbiology- Part II (18 min), Subject Experts: **Dr. G.S. Randhawa** & Dr. S.K. Sisodia

3. Water Treatment at the point of use (30 min), Subject Experts: Dr. S.K. Sisodia & **Dr. G.S. Randhawa**.
4. Nitrogen Fixation (13 min), Subject Experts: Prof. H.K. Das, Coordinator: **Dr. G.S. Randhawa**.

Membership of Scientific/ Technical Societies:

1. Life member, Society of Biosciences, India.
2. Life member, Indian Society of Continuing Engineering Education.
3. Life member, Association of Microbiologists of India.
4. Life member, Biomedical and Biotechnical Society of India.

Chairing of Sessions in National & International Conferences & Workshops

1. National Symposium on Advances in Biotechnological Research in Agri-Horticultural Crops for Sustaining Productivity, Quality Improvement and Food Security, S. V. P. University of Agriculture and Technology, Meerut, India, September 14-16, 2011.
2. National Conference on Multidisciplinary Approach in Frontier Areas of Environmental Science and Engineering, G. J. University of Science & Technology, Hisar, India, March 4-5, 2011.
3. **International Symposium on Recent Advances in Cross-disciplinary Microbiology: Avenues and Challenges, Ranchi, India, December 14-17, 2010.**
4. **International Symposium on Role of Genomics in Clinical Practice, S.G. Postgraduate Institute of Medical Sciences, Lucknow, India, March 6-8, 2010.**
5. National Conference on Seabuckthorn : Emerging Trends in Production to Consumption, CSK Himachal Pradesh Krishi Vishvavidyalaya, Palampur, India, February 16-18, 2010.
6. National Conference on DNA-2009 : DNA-The Decisive Evidence, Andhra Pradesh Police Academy, Hyderabad, India, August 17-19, 2009.
7. National Symposium on Biotech-2009-Present and Future Perspectives, Punjabi University, Patiala, India, March 19-20, 2009.
8. National Symposium on Emerging Trends in Biomedical Sciences, S. B. S. Post Graduate Institute of Biomedical Sciences and Research, Balawala, Dehradun, India, February 27-28, 2009.
9. National Symposium on Biotechnology : Vision 2020, Sardar Vallabh Bhai Patel University of Agriculture & Technology, Meerut, India, December 8-9, 2008.
10. **International Symposium on Microbial Biotechnology : Diversity, Genomics and Metagenomics, University of Delhi, Delhi, India, November 18-20, 2008.**
11. Industry Academia Coordination Workshop, G. B. Pant University of Agriculture & Technology, Pantnagar, India, November 15, 2008.
12. **International Conference on Molecular Biology & Biotechnology, Banasthali University, Banasthali, India, October 19-21, 2008.**

Keynote Addresses /Lectures / Presentations in Conferences /Seminars / Workshops / Training Courses / Other Special Programmes:

1. Invited lecture on **"Biotechnological advances in guar for enhancing quantity and quality of guar gum"** in the **National Symposium on Advances in Biotechnological Research in Agri-Horticultural Crops for Sustaining Productivity, Quality Improvement and Food Security,** S. V. P. University of Agriculture and Technology, Meerut, India, September 14-16, 2011.
2. Invited lecture on **"Alleviation of arsenic toxicity in soil by using genetically-engineered rhizobia"** in the **National Conference on Multidisciplinary Approach in Frontier Areas of Environmental Science and Engineering**, G. J. University of Science & Technology, Hisar, India, March 4-5, 2011.
3. Plenary lecture on **"Genetic studies on auxotrophic and stress tolerant strains of rhizobial"** in the **International Symposium on Recent Advances in Cross-disciplinary Microbiology: Avenues and Challenges**, Ranchi, India, December 14-17, 2010.
4. Invited lecture on "**Genetic manipulation of plant cell wall polysaccharides for industrial applications**", Delhi Technological University, Delhi, India, October 29-30, 2010.
5. Invited lecture on "**Studies on arsenic resistance in rhizobial strains and alleviation of arsenic toxicity in alfalfa**", National Institute of Technology, Durgapur, India, October 4-5, 2010.
6. Invited lecture in the **Zonal Seminar on Physiological and Molecular Interventions for yield and quality improvement in crop plants**, SVPUA&T, Meerut, India, September 17-18, 2010.
7. Invited lecture on "**Genetic Engineering : A Tool to Change Life on Earth**", Lecture Series on Biotechnology, Beehive Group of Colleges, Dehradun, April 3, 2010.
8. Invited lecture in the National Conference on **Leads for Futuristic Biotechnological Inputs : Indian Context**, IAMR, Ghaziabad, March 26-27, 2010.
9. Invited lecture in the **U. G. C. National Seminar on Biotechnology : Expanding Horizons**, S. D. College, Barnala, Punjab, India, February 20, 2010.
10. Invited lecture on **Industrial Biotechnology** in the **Workshop on Recent Trends and Future in Biotechnology**, Vardhaman Mahaveer Open University, Kota, March 8-10, 2010.
11. **Keynote address in the National Symposium on Biotechnology : Innovations and Challenges**, **G. G. D. S. D. College, Chandigarh, India, February 6, 2010.**
12. Invited lecture in the **National Symposium on Emerging Trends and Opportunities in Basic and Applied Sciences**, Poddar International College, Jaipur, India, January 30, 2010.
13. **Keynote address in the National Symposium on Emerging Trends in Biotechnology, M. D. University, Rohtak, November 24, 2009.**

14. Invited lecture in the National Seminar on Bioengineered Foods : Strategies & Perspective, SLIET, Longowal, Punjab, India, November 20-21, 2009.
15. **Keynote address in the National Workshop on Current Advancements in Biotechnology & Bioinformatics, IASE (D) University, Sardarshahr, India, November 11-15, 2009.**
16. Invited lecture in the **Workshop on How to be Successful**, Yadavindra College of Engineering, Punjabi University Guru Kashi Campus, Talwandi Sabo, India, October 19, 2009.
17. Invited lecture in the **National Conference on DNA-2009 : DNA-The Decisive Evidence**, Andhra Pradesh Police Academy, Hyderabad, India, August 17-19, 2009.
18. Plenary lecture in the **National Symposium on Biotech-2009-Present and Future Perspectives**, Punjabi University, Patiala, India, March 19-20, 2009.
19. Invited lecture in the **National Conference on Modern Developments in Engineering & Sciences**, College of Engineering & Applied Research, Ambala, India, February 27-28, 2009.
20. **Keynote address in the 3rd Annual Biotech Fest 2009, I. T. S. Paramedical College, Muradnagar, Ghaziabad, India, February 27-28, 2009.**
21. Invited lecture in the **International Symposium on Emerging Trends in Biotechnology & Management**, Biyani Institute of Science & Management, Jaipur, India, December 19, 2008.
22. Invited lecture in the **QIP Workshop on Recent Trends and Emerging Technologies in Medicine**, I. I. T. Roorkee, India, November 16, 2008.
23. Invited lecture in the **Industry Academia Coordination Workshop**, G. B. Pant University of Agriculture & Technology, Pantnagar, India, November 15, 2008.
24. Invited lecture in the **International Conference on Molecular Biology & Biotechnology**, Banasthali University, Banasthali, India, October 19-21, 2008.
25. Invited lecture in the **Asia Regional Workshop on 'Role of Youth in Mitigating the Impact of Climate Change for Sustainable Livelihood',** Forest Research Institute, Dehradun, India, October 13-18, 2008.
26. Invited lecture in the **National Seminar on Trends in Modern Biosciences**, Hans Raj Mahila Maha Vidyalaya, Jalandhar, India, September 29-30, 2008.
27. **Presidential address in the National Seminar on Genetic Panorama, D. A. V. College, Jalandhar, India, September 27, 2008.**
28. Invited lecture in the Summer School on **Biotechnology**, Indian Veterinary Research Institute, Mukteshwar, India, September 6, 2008.
29. Invited lecture in the **Summer School on Recent Trends in Biology and Biotechnology**, Forest Research Institute, Dehradun, India, August 18-29, 2008.
30. **Keynote address in the National Science Day Celebrations Programme, S.B.S. Postgraduate Institute of Biomedical Sciences and Research, Balawala, Dehradun, India, February 28, 2008.**
31. **Keynote address in the 10-day Workshops on "Molecular and Applied Microbiology" and "Microbial Fermentation and Inoculant Preparations" Gurukul Kangri University, Hardwar, India, Feb.10-19, 2008.**

32. **Keynote Address on "Milestones in Gene Research" delivered in the "National Conference-Cum-Seminar on Emerging Trends in Biotechnology", IMS Engineering College, Ghaziabad, India, January 18-19, 2008.**
33. Invited Lecture on **"Gehun Paudh Ka Jaiv Sanrakshan"** in the Workshop **"Hindi mein Vigyan Lekhan avam Manak Vegyanic / Takniki Shabdavali Karayshala"** organized by the **Commission for Scientific & Technical Terminology, Ministry of Human Resource Development, Govt. of India** at Bhabha Atomic Research Centre, Mumbai, India, March 21-22, 2007.
34. Invited Lecture on **"Role of Rhizobial Biosynthetic Pathways of Amino Acids and Nucleotide bases in *Rhizobium*–legume Symbiosis"**in the National Conference on **"Microbial Diversity:Avenues and Applications"**, S. B. S. P. G. I. B. S. R., Balawala, Dehra Dun, India, March 17-18, 2007.
35. Invited Lecture on **"Genetic Manipulation of Plant Polysaccharides"** in the III Annual Conference on **"Shaping the Nature with Artificial Hands – An Amalgamation of Information Technology and Biosciences"**, Kanpur, India, January 27-28, 2007.
36. Invited Lecture on **"Fundamental Technologies in Molecular Genetics and Biotechnology"** in the **"Workshop on Biotechniques"**, Mahatma Gandhi Institute of Applied Sciences, Jaipur, India, January 8-11, 2007.
37. Invited Lecture on "**Cloning of genes for quality traits**" in the training programme on "**Biotechnology in Relation to Crop Improvement",** Punjab Agricultural University, Ludhiana, India, December 1-21, 2006.
38. Invited Lecture on "**Molecular genetics of *Rhizobium*-legume symbiosis**" in the **47th Annual Conference of Association of Microbiologists of India,** Barkatullah University, Bhopal, India, December 6-8, 2006.
39. Invited Lecture on "**Manipulation of polysaccharide synthesis in plants : Transgenic approach**", ICAR Sponsored Winter School 2006 on **"Strategies for gene cloning and expression for value addition in crop plants"**, CCS Haryana Agricultural University, Hisar, India, November 15 - December 5, 2006.
40. Plenary Lecture in the National Symposium on Biotechnology in Genomic Era : Industrial Applications, IILM Academy of Higher Learning, Greater Noida, India, April 28, 2006.
41. Plenary Lecture in the National Symposium on Entrepreneurship in Biotechnology, S.U.S. College of Engineering & Technology, Tangori, India, February 27, 2006.
42. National Science Day Lecture at Punjab University, Chandigarh, India, February 27, 2006.
43. Invited Lecture in the Uttaranchal Herbal Expo-2005 at Dehra Dun, December 26, 2005.
44. Plant cell wall polysaccharides biosynthesis – Industrial applications; National Conference on Modern Trends in Chemical Science & Technology, D.A.V.College, Jalandhar; Oct. 15-17, 2005.
45. Molecular genetics of Rhizobium-legume symbiosis; Department of Biotechnology, Punjabi University, Patiala, India; January 25, 2003.
46. **Isolation and characterization of tryptophan auxotrophs of *Sinorhizobium meliloti*; 5th European Nitrogen Fixation Conference, Norwich, U.K.; Sept. 6-10, 2002.**

47. Genetic Engineering; Refresher Course on Industrial Biotechnology, Organized by Department of Biotechnology, Punjabi University, Patiala, India; Oct.11-31, 2000.
48. Nodulation and nitrogen fixation under stress conditions; Refresher Course on Microbes in Integrated Nutrients Management at C.C.S. Haryana Agricultural University, Hisar, India; Sept. 15 to Oct. 12, 2000.
49. Development of stress tolerant transgenic rhizobial strains; Brain Storming Session on Development of transgenic microbial inoculants, Organized by the Department of Biotechnology, Govt. of India at Habitat Centre, New Delhi, India; May 24-25, 2000.
50. *Rhizobium* plasmids; Summer Institute on Unconventional Approaches in Plant Breeding, Punjab Agricultural University, Ludhiana, India, July 1985.

Publications:

a) Research papers in journals:

1. Ischemic insult induced apoptotic changes in PC12 cells : Protection by *trans resveratrol.* M. Agrawal, V. Kumar, M. P. Kashyap, V. K. Khanna, **G. S. Randhawa** & A. B. Pant. European Journal of Pharmacology 666 : 5-11 (2011).
2. Bioavailability of iron from wheat *Aegilops* derivatives selected for high grain iron and protein contents. R. Salunke, K. Neelam, N. Rawat, V. K. Tiwari, **G. S. Randhawa**, H. S. Dhaliwal & P. Roy. Journal of Agricultural and Food Chemistry 59 : 7465-7473 (2011) & **DOI: 10.1021/jf202913e.**
3. Introgression of group 4 and 7 chromosomes of *Ae. peregrina* in wheat enhances grain iron and zinc density. K. Neelam, N. Rawat, V. K. Tiwari, S. Kumar, P. Chhuneja, K. Singh, G. S. Randhawa & H. S. Dhaliwal. **Molecular Breeding** (2010) DOI 10.1007/s11032-010-9514-1
   Citations in journals : 1

4. Random chromosome elimination in synthetic wheat-*Aegilops* amphiploids leads to development of a stable partial amphiploid with high grain micro and macronutrient content and powdery mildew resistance. V. K. Tiwari, N. Rawat, K. Neelam, S. Kumar, **G. S. Randhawa** & H. S. Dhaliwal. **Genome** 53 : 1053-1065 (2010).
5. A novel method to alleviate arsenic toxicity in alfalfa plants using a deletion mutant strain of *Sinorhizobium meliloti.* D. P. Panigrahi & **G. S. Randhawa**. **Plant Soil** 336 : 459-467 (2010).
6. Identification of Aegilops species with higher production of phytosiderophore and iron and zinc uptake under micronutrient sufficient and deficient conditions. K. Neelam, V. K. Tiwari, N. Rawat, S. K. Tripathi, **G. S. Randhawa** & H. S. Dhaliwal. **Plant Genetic Resources : Characterization and Utilization** 8 : 132-141(2010).
7. Substitution of 2S and 7U chromosomes Aegilops kotschyi in wheat enhances grain iron and zinc concentration. V. Tiwari, N. Rawat, K. Neelam, S. Kumar, **G. Randhawa** and H. Dhaliwal. **Theoretical and Applied Genetics** 121 : 259-269 (2010).
   Citations in journals : 3
8. A candidate gene *OSAPC6* of anaphase-promoting complex of rice identified through T-DNA insertion. M. Kumar, P. Osmanbasha, A. Bhalla, D. Rajpurohit, T. Jhang, V. Garg, T. R. Sharma, **G. S. Randhawa**, S. Kianian & H. S. Dhaliwal. **Functional and Integrative Genomics** 10 : 349-358 (2010).
   Citations in journals : 1
9. The polyembryo gene (*OsPE*) in rice. A. Puri, P. O. Basha, M. Kumar, D. Rajpurohit, **G. S. Randhawa**, S. F. Kianian, A. Rishi & H. S. Dhaliwal. **Functional and Integrative Genomics** 10 : 359-366 (2010).
   Citations in journals : 1
10. Genetic control of seed dormancy in basmati rice. M. Kumar, D. Rajpurohit, P. O. Basha, A. Bhalla, **G. S. Randhawa** & H. S. Dhaliwal. **Madras Agric. J.** 96 : 305-308 (2009).
11. Linkage mapping of polyembryonic, oligoculm and gibberellic acid insensitive dwarf insertional mutants of Oryza sativa var. Basmati 370. A. Bhalla, P. O. Basha, M. Kumar, K. Singh, D. Rajpurohit, **G. S. Randhawa** & H. S. Dhaliwal. **SABRAO Journal of Breeding & Genetics** 41 : 13-23 (2009).
    Citations in journals : 2
12. Development and characterization of *Triticum aestivum-Aegilops kotschyi* amphiploids with high grain iron and zinc content. N. Rawat, V. K. Tiwari, K. Neelam, **G. S. Randhawa**, P. Chhuneja, K. Singh, & H. S. Dhaliwal. **Plant Genetic Resources : Characterization and Utilization** 7 : 271-280 (2009).
    Citations in journals : 2
13. Molecular mapping of high grain iron and zinc related QTLs in a diploid RIL wheat population. V. K. Tiwari, N. Rawat, P. Chhuneja, K. Neelam,

R. Agarwal, K. Singh, **G. S. Randhawa** & H. S. Dhaliwal. **Journal of Heredity** 100 : 771(2009).

Citations in journals : 6

14. Evaluation and utilization of *Aegilops* and wild *Triticum* species for enhancing iron and zinc content in wheat. N. Rawat, V. K. Tiwari, N. Singh, **G. S. Randhawa**, K. Singh, P. Chhuneja & H. S. Dhaliwal. **Genet. Resour. Crop Evol.** 56 : 53-64 (2009).

    Citations in journals : 9

15. Development of *Triticum turgidum* subsp *durum-Aegilops longissima* amphiploids with high iron and zinc content through unreduced gamete formation in F-1 hybrids. V. K. Tiwari, N. Rawat, K. Neelam, **G. S. Randhawa**, K. Singh, P. Chhuneja & H. S. Dhaliwal. **Genome** 51 : 757-766 (2008).

    Citations in journals : 9

16. Guar Seed ß-Mannan Synthase Is a Member of the Cellulose Synthase Super Gene Family. K. S. Dhugga, R.Barreiro, B. Whitten, K.Stecca, J. Hazebroek, **G. S. Randhawa**, M. Dolan, A. J.Kinney, D.Tomes, S. Nichols, P.Anderson. **Science** 303: 363-366 (2004).

    Citations in journals : 118

17. Isolation and symbiotic characterization of transposons Tn5-induced arginine auxotrophs of *Sinorhizobium meliloti.* A. Kumar, N. Vij and G. S. Randhawa. **Indian J. Exp. Biol.** 41 : 1198-1204 (2003). PMID: 15242285 [PubMed - indexed for MEDLINE].

    Citations in journals : 3

18. Symbiotic characterization of cysteine and methionine auxotrophs of *Sinorhizobium meliloti.* B.A. Abbas, K.E. Vineetha, C.K. Prasad, N. Vij, R. Hassani & **G.S. Randhawa**. **Indian J. Exp. Biol.** 40: 1121-1130 (2002). PMID: 12693691 [PubMed - indexed for MEDLINE].

    Citations in journals : 5

19. Symbiotic characterization of isoleucine+valine and leucine auxotrophs of *Sinorhizobium meliloti.* R. Hassani, C.K. Prasad, Vineetha K.E., N. Vij, P. Singh, S. Yadav, R. Sud & **G.S. Randhawa**. **Indian J. Exp. Biol.** 40: 1110-1120 (2002). PMID: 12693690 [PubMed - indexed for MEDLINE].

    Citations in journals : 4

20. Ultrastructural studies on nodules induced by pyrimidine auxotrophs of *Sinorhizobium meliloti.* Vineetha K.E., N. Vij, C.K. Prasad, R. Hassani & **G.S. Randhawa**. **Indian J. Exp. Biol.** 39: 371-377 (2001). PMID: 11491584 [PubMed - indexed for MEDLINE].

    Citations in journals : 10

21. Isolation and symbiotic characterization of aromatic amino acid auxotrophs of *Sinorhizobium meliloti.* C.K. Prasad, Vineetha K.E., R. Hassani, R. Gupta & **G.S. Randhawa**. **Indian J. Exp. Biol.** 38: 1041-1049 (2000). PMID: 11324158 [PubMed - indexed for MEDLINE].

    Citations in journals : 8

22. Toxicity of pesticides 2,4-D and cypermethrin on *Rhizobium meliloti.* N. Vij, **G.S. Randhawa** and A.K. Chopra. **Chem. Env. Res.** 7: 123-138 (1998).

23. Prevalence and transfer of R-plasmids in *Escherichia coli* isolates from healthy adults. A.B. Pant, R.K. Bedi & **G.S. Randhawa**. **Indian Vet. Med. Jour.** 22: 179-183 (1998).
24. Plasmid elimination from clinical isolates of *Escherichia coli* by ciprofloxacin and other inhibitors of DNA gyrase. A.B. Pant, **G.S. Randhawa**, G.D. Sharma & M.K. Kapil. **Biotechnology Techniques** 8: 209-213 (1994).
    http://www.springerlink.com/content/q4515lh712265212/
25. Introduction of a segment of *Rhizobium meliloti* megaplasmid into *E. coli* slows down its growth in minimal medium. R. Choubey, **G.S. Randhawa**, A. Dixit & C.B. Sharma. **Indian J. Exp. Biol.** 30: 257-259 (1992). PMID: 1459590 [PubMed - indexed for MEDLINE]
26. Construction and characterization of R-prime plasmids carrying symbiotic genes of *Rhizobium meliloti.* Z. Banfalvi, **G.S. Randhawa**, E. Kondorosi, A. Kiss & A. Kondorosi. **Mol. Gen. Genet.** 189: 129-135 (1983).
    Citations in journals : 38
27. Introduction of symbiotic genes of *Rhizobium meliloti* into other rhizobial and *Agrobacterium*. Z. Banfalvi, E. Kondorosi, G. S. Randhawa et al. **Acta Microbiologica Hungarica** 31 : 234 (1984).
28. Localization of symbiotic mutations in *Rhizobium meliloti.* T. Forrai, E. Vincze, Z. Banfalvi, G.B. Kiss, **G.S. Randhawa** & A. Kondorosi. **J. Bacteriol.** 153: 635-643 (1983).
    Citations in journals : 88

b) Other publications in journals:

1. Understanding life : by making and breaking the cell. **G. S. Randhawa**, D. P. Panigrahi & K. A. Nagesh. **Indian J. Microbiol.** 50 : 247-248 (2010).
2. Plant cell wall matrix polysaccharide biosynthesis (Review Article). A. P. S. Sandhu, **G. S. Randhawa** & K. S. Dhugga. **Molecular Plant** 2 : 840-850 (2009).
   Citations in journals : 11
3. Review of the book entitled "Microbial Biotechnology", Editor : Ratul Saikia. **Indian J. Exp. Biol**. 46 : 258 (2008).
4. News Scan : Underground strategies of an invader; MicroRNAs rescued from neglect & Recent report of a novel reporter**. G.S.Randhawa** & Shubha G. **Indian J. Exp. Biol.** 41: 1352-1353 (2003).
5. News Scan: Yeast made somewhat human to produce human proteins. **G.S.Randhawa** & Shubha G. **Indian J. Exp. Biol.** 41: 1352-1353 (2003). PMID: 15332514 [PubMed - indexed for MEDLINE].
6. Recent advances in *Rhizobium*-legume symbiosis. **G.S.Randhawa**, Shubha G.,N.K.Singh, A.Kumar & A.Bhalla. **Indian J. Exp. Biol.** 41: 1184-1197 (2003). PMID: 15242284 [PubMed - indexed for MEDLINE].

7. Milestones in the genetical research on rhizobia. **G.S.Randhawa** & A.Kumar. **Indian J. Exp. Biol.** 41: 1095-1100 (2003). PMID: 15242275 [PubMed - indexed for MEDLINE].
8. Preface to the Special Issue on "Bacterium-plant Symbiosis". **G.S.Randhawa** & G.B.Kiss. **Indian J. Exp. Biol.** 41: 1091-1092 (2003).
9. 5th European Nitrogen Fixation Conference- A Report. **G.S. Randhawa**. **Indian J. Exp. Biol.** 40: 1321 (2002). PMID: 13677639 [PubMed - indexed for MEDLINE].
10. Role of biosynthetic pathways of amino acids, nucleotide bases and vitamins in symbiosis (Review Article). **G.S. Randhawa** & Raad Hassani. **Indian J. Exp. Biol.** 40: 755-764 (2002). PMID: 12597544 [PubMed - indexed for MEDLINE].
    Citatations in journals : 13
11. Antiquity of life. **G.S. Randhawa**. **Everyday Science**. 22: 23-25 (1977).

c) Articles in books:

1. Milestones in Gene and Genome Research. **G. S. Randhawa** & D. P. Panigrahi. In : V. Sharma & B. N. Tripathi (eds.). Molecular Biology and Biotechnology: Selected Contributions of International conference-2008; LAP Lambert Academic Publishing, Saarbruecken, Germany; pp.194-210 (2011).
2. High resolution radiation hybrid mapping in wheat : an essential tool for the construction of the wheat physical maps. M. Michalak, A. Kumar, O. Riera-Lizarazu, Y. Gu, E. Paux, F. Choulet, C. Feuillet, S. Kumar, A. Goyal, V. Tiwari, M. Dogramaci, J. Hegstad, A. Peckrul, I. Kalavacharla, K. Hossain, H. S. Balyan, H. S. Dhaliwal, P. K. Gupta, **G. S. Randhawa**, S. S. Man & S. F.Kianian. In : R. Appels, R. Eastwood, E. Lagudah, P. Langridge, M. Mackay, L. McIntyre & P. Sharp (eds.). Proceedings of the 11th International Wheat Genetics Symposium 24-29 August, 2008, Brisbane, Australia, Vol. 1, Sydney University Press, pp. 64-66 (2008).
3. Evaluation and Utilization of *Aegilops* germplasm for biofortification of wheat for high grain iron and zinc content. V. K. Tiwari, N. Rawat, N. Singh, **G. S. Randhawa**, K. Singh, P. Chhuneja, S. K. Tripathi & H. S. Dhaliwal. In : R. Appels, R. Eastwood, E. Lagudah, P. Langridge, M. Mackay, L. McIntyre & P. Sharp (eds.). Proceedings of the 11th International Wheat Genetics Symposium 24-29 August, 2008, Brisbane, Australia, Vol. 1, Sydney University Press, pp. 306-308 (2008).
4. Biofortification of cereals for enhanced iron and zinc micronutrients and their bioavailability to overcome hidden hunger. H. S. Dhaliwal, V. K. Tiwari, N. Rawat, K. N. Singh and **G. S. Randhawa**. In: P. C. Trivedi (ed.). Plant Biotechnology: Perspectives and Prospects : Festschrift in Honour of Prof. C. P. Malik. Pointer, Jaipur (2006).
5. Plasmid curing by heat treatment from *Azospirillum brasilense* Sp7. **G.S. Randhawa**. Current Status of Biological Nitrogen Fixation Research; Department of Atomic Energy, Govt. of India and HAU Hisar, p: 16 (1986).

6. Role of *Rhizobium* plasmids in nitrogen fixation. **GS Randhawa**. In: R. Singh, H.S. Nainawatee & S.K. Sawhney (eds). Current Status of Biological Nitrogen Fixation Research; Department of Atomic Energy, Govt. of India and HAU Hisar. pp: 4-8 (1986).
7. Genetic studies of biological nitrogen fixation in peas (*Pisum sativum* L.). S. Singh, B.S. Ghai & **GS Randhawa**. In: BS Ghai (ed). Symbiotic nitrogen fixation (I); USG Publishers, Ludhiana. pp: 69-77 (1984).
8. Analysis of symbiotic nitrogen fixation genes carried by *Rhizobium meliloti* megaplasmid. A. Kondorosi, E. Kondorosi, Z. Banfalvi, W.J. Broughton, C. Pankhurst, **G.S. Randhawa**, C.H. Wong & J. Schell. In: A Pühler (ed). Molecular Genetics of the Bacteria-plant Interaction; Springer Verlag, Berlin, Heidelberg, New York. pp: 53-63 (1983).
9. Localization and molecular genetic analysis of symbiotic nitrogen fixation genes in *Rhizobium meliloti.* A. Kondorosi, Z. Banfalvi, W.J. Broughton, G.B. Kiss, E. Kondorosi, C. Pankhurst, **G.S. Randhawa** &. Z. Svab & E. Vincze. In: O. Ciferri and L. Dure (eds). Structure and function of plant genomes; Plenum Pub. Corp., pp: 247-252 (1983).
10. Genetical strategies for improving symbiotic nitrogen fixation by *Rhizobium*. B.S. Ghai & **G.S. Randhawa**. Proceedings of the Symposium on Genetics Applied to Human Needs; BARC, Mumbai. pp: 223-232. Jan 10-11 (1977).

d) Abstracts in conferences/ symposia (International level):

1. Genetic studies on auxotrophic and stress tolerant strains of rhizobial. **G. S. Randhawa** & D. P. Panigrahi. International Symposium on Recent Advances in Cross-disciplinary Microbiology: Avenues and Challenges, Ranchi, India, December 14-17, 2010, p. 7.
2. Genetic Engineering : A Tool to Change Life on Earth. **G. S. Randhawa**. International Symposium on Emerging Trends in Biotechnology & Management. Jaipur, India, December 19, 2008.
3. Genetic Engineering: Past, Present and Future. **G. S. Randhawa** & Durga P Panigrahi. International Conference on Molecular Biology and Biotechnology, Banasthali, India, October 19-21, 2008.
4. Increased symbiotic efficiency of *Sinorhizobium meliloti* smk956 under arsenic stress. D. P. Panigrahi, A. Sagar & **G. S. Randhawa**. International Conference on Molecular Biology and Biotechnology, Banasthali, India, October 19-21, 2008.
5. Toxic effects of arsenic on *Rhizobium*-legume symbiosis. A. Sagar, D. Panigrahi & **G. S. Randhawa**. International Conference on Molecular Biology and Biotechnology, Banasthali, India, October 19-21, 2008.
6. Bioremediation of phenol from industrial effluent by *Corynaebacterium efficiens* and use of the treated effluent as a fertilizer. S. Dalal, D. P. Panigrahi, R. C. Dubey & **G. S. Randhawa**. International Conference on Molecular Biology and Biotechnology, Banasthali, India, October 19-21, 2008.

7. Standardization of factors associated with ischemic cerebral stroke in cultured rat pheochromocytoma cells. M. Agrawal, **G. S. Randhawa** & A. B. Pant. International Symposium on Monitoring and Modulating Global Resources of Environmental and Food Contaminants, Ludhiana, India, October 16-18, 2008.
8. Evaluation and utilization of *Aegilops* germplasm for biofortification of wheat for high grain iron and zinc content. V. K. Tiwari, N. Rawat, N. Singh, **G. S. Randhawa**, K. Singh, P. Chhuneja & H. S. Dhaliwal. 11th International Wheat Genetics Symposium, Brisbane, Australia, August 24-29, 2008.
9. High-resolution radiation hybrid mapping in wheat : an essential tool for the construction of wheat physical maps. M. Michalak, A. Kumar, O. Riera-Lizarazu, Y. Gu, E. Paux, F. Choulet, C. Feuillet, S. Kumar, A. Goyal, V. Tiwari, M. Dogramaci, J. Hegstad, A. Peckrul, V. Kalavacharla, K. Hossain, H.S. Balyan, H.S. Dhaliwal, P. K. Gupta, **G.S. Randhawa**, S. S. Maan & S.F. Kianian. 11th International Wheat Genetics Symposium, Brisbane, Australia, August 24-29, 2008.
10. Pyramiding genes for bacterial blight resistance and dwarfness in Dehraduni basmati using marker assisted selection. D. R. Purohit, P. O. Basha, M. Kumar, A. Bhalla, **G. S. Randhawa** & H. S. Dhaliwal. International Rice Congress 2006, New Delhi, India, October 9-13, 2006, p. 276 (Abstract ID 950).
11. Molecular characterization of OsPE mutant (polyembronic mutant) in basmati 370. A. Bhalla, P. O. Basha, M. Kumar, D. R. Purohit, **G. S. Randhawa** & H. S. Dhaliwal. International Rice Congress 2006, New Delhi, India, October 9-13, 2006, pp. 154-155 (Abstract ID 983).
12. Characterization of Ds insertional oligo culm (Osoc) mutant in basmati 370. H. S. Dhaliwal, P. O. Basha, D. R. Purohit, A. Bhalla, M. Kumar & **G. S. Randhawa**. International Rice Congress 2006, New Delhi, India, October 9-13, 2006, p. 154 (Abstract ID 952).
13. A novel gibberellic acid insensitive *Ds* transposon insertional dwarf mutant (OsGAI/Sd) of basmati 370. M. Kumar, D. R. Purohit, P. O. Basha, A. Bhalla, **G. S. Randhawa** & H. S. Dhaliwal. International Rice Congress 2006, New Delhi, India, October 9-13, 2006, p. 154 (Abstract ID 951).
14. Genetic variability for nutrient status in Rice. N. Singh, S. B. Mishra, A. P. Singh, V. K. Tiwari, N. Rawat and **G. S. Randhawa**. International conference on Biotechnology Approaches for alleviating malnutrition and human health, G.K.V.K., Bangalore, India, January 9 – 11, 2006, p.96.
15. *Aegilops* and wild *Triticum* species, a good reservoir of useful variability for higher iron and zinc content. N. Rawat , V. K. Tiwari, N. Singh, **G. S. Randhawa**, K. Singh, P. Chhuneja, H. S. Dhaliwal. International Conference on Biotechnology Approaches for alleviating malnutrition and human health. G.K.V.K.Bangalore, India, January 9 – 11, 2006, p. 100.
16. Partial germination of wheat grain reduces their phytic Acid content without affecting grain quality. V. K. Tiwari, N. Rawat, N. Singh, **G. S. Randhawa**, A. M. Singh, H. S. Dhaliwal. International Conference on Biotechnology Approaches for alleviating malnutrition and human health, G.K.V.K.Bangalore, India, January 9 – 11, 2006, p. 189.

17. Phytic acid analysis in wheat germplasm and effect of processing on phytate content in wheat. **N.** Rawat, N. Singh, V. K. Tiwari, M. Kumar, **G. S. Randhawa** and H. S.Dhaliwal. International conference on plant genomics and biotechnology: challenges and opportunities, I.G.A.U. Raipur, p. 291, October 26 – 28, 2005.
18. Screening and utilization of germplasm of related *Aegilops* species for enhancing iron and zinc content in wheat. V. K. Tiwari, N. Rawat, N. Singh, **G. S. Randhawa** and H. S. Dhaliwal. International conference on plant genomics and biotechnology: challenges and opportunities, I.G.A.U. Raipur, p.53, October 26 – 28, 2005.
19. Genetic and biochemical studies on stress tolerance in *Rhizobium leguminosarum*. Ali, I. A. H., **G.S.Randhawa** & A. Bhalla. Abstracts, Third International Nitrogen Conference, Nanjing, China; October 12-16, 2004; p.74
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