

## Ishita Ahuja

### ADDRESSES

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[https://www.researchgate.net/profile/Ishita\\_Ahuja](https://www.researchgate.net/profile/Ishita_Ahuja)

<https://wo.cristin.no/as/WebObjects/cristin.woa/wa/fres?sort=ar&pnr=40467&action=sok>

### PERSONAL PROFILE

**Gender:** Woman

**Nationality:** Norwegian

**Academic degree:** PhD

**Present position:** Researcher

**Private Hobbies:** Cooking, Reading, listening to music, and going out for a walk, exploring nature.

**Languages:** English (Fluent), Norwegian (Good skills), Hindi (Fluent).

**Personality skills:** Active, hardworking, enthusiastic, structured, possess an innovative, scientific and strategic attitude, excellent communication skills, timeliness, helping/friendly to colleagues and students, and leadership qualities.

### SCIENTIFIC SKILLS AND RESEARCH INTERESTS

Organic agriculture, Agricultural Crop Production, Plant Breeding and Genetics, Chemical Ecology; Molecular Biology; Functional Genomics and Systems Biology; Plant Physiology and Biochemistry.

Plant-Environment interactions and climate change; Plant defence, Plant-Insect Interactions; Pollination, Plant Functional Diversity and Ecosystem services; Plant functional traits; Biodiversity, Bumblebees and Climate change; Integrated pest management, Sustainable food production.

### APPOINTMENTS

Research Scientist, Norwegian Centre for Organic Agriculture (NORSØK), Norway.

Department of Biology, Norwegian University of Science and Technology (NTNU), Norway.

Researcher, May 2014 until March 2018.

Landbruk Nordvest, Adviser, April 2017 until December 2017.

Department of Terrestrial Ecology, Norwegian Institute for Nature Research (NINA), Trondheim, Norway. Researcher (Training), March 2015-December 2015.

Department of Biology, NTNU, Norway. Senior Engineer, August 2013-May 2014.

Department of Biology, NTNU, Norway. Assistant Professor, August 2012-February 2013.

Department of Biology, NTNU, Norway. Researcher, May 2008-May 2012.

Department of Biology, NTNU, Norway. Postdoc, October 2004-April 2008.

Department of Biology, NTNU, Norway. Guest Researcher through (The Govt. of India and The Research Council of Norway), August 2003-October 2004.

Punjab Agricultural University (PAU), India. Senior Research Associate, January 2003-July 2003.

PAU, India. Senior Research Associate, September 1996-March 1999.

National Research Centre on Plant Biotechnology (NRCPB), Indian Agricultural Research Institute (IARI), India. Post-Doctoral Fellow, September 1996-March 1999.

PAU, India. Senior Research Fellow, July 1996-September 1996.

College for undergraduate studies, India. Lecturer, November 1995-March 1996.

## **EDUCATION**

Punjab Agricultural University (PAU), India. PhD Botany (Plant Sciences)

Punjab Agricultural University (PAU), India. MSc Botany (Plant Sciences)

Government College for Women, Punjab University (PU), India. Bachelors in Biology

College of Education for Women, Punjab University (PU), India. Bachelor of Education

National Institute for Information Technology (NIIT), New Delhi, India. Honours Diploma in Network-Centered Computing

## **TEACHING RELAVANT EXPERIENCE**

- Department of Biology, NTNU, Norway. Internal Examiner for written examination in BI2014, Examiner for master student in Molecular Medicine, Oral Examiner for students taking course BI2014, External Examiner for Anastasia Brativnyk's oral examination in BI2014.
- Department of Biology, NTNU, Norway. Teaching Course BI3013 (Experimental Cell and Molecular Biology) to national and international master students.
- Department of Biology, NTNU, Norway. Teaching Course BI1001/MOL4010 (Cell and Molecular Biology) / (Basic Molecular Biology) to about national and international bachelor students.
- Department of Biology, NTNU, Norway. Teaching Course BI2012 (Cell Biology) (2005) to master students.
- NTNU, Norway, 2011, Three-four days Teacher Training Seminar where I learnt some of the presentation and lecture delivering skills.
- College for undergraduate studies, India, November 1995-March 1996. Taught basic courses of biology to bachelor students. Also acted as an examiner for several undergraduate examinations.

## **STUDENTS MENTORED**

- Department of Biology, NTNU, Norway. Together with Prof. Atle M. Bones, I have been a supervisor of four MScs, and eight bioengineer students from Norway and other European countries (internships).
- Punjab Agricultural University (PAU), India. Together with Profs. S.S. Banga and S.K. Banga, I co-supervised part of the laboratory work of seven master students of the Faculty associated with the Department of Plant Breeding and Genetics.

## **ACADEMIC AWARDS, FELLOWSHIPS, FUNDING BY PARTICIPATION IN WRITING OF PROJECT GRANT APPLICATIONS WITH CMBG GROUP LEADER/TRAVEL GRANT FUNDING AND OTHER PROFESSIONAL MERITS**

- Funding of project "Climate warming: A new and innovative approach for assessing resistance of bumblebees to heat waves (Personal Overseas Fellowship) in 2016.
- Funding of project "Studying plant defence responses in oilseed rape for sustainable pest management" in 2014 from PAK- NOR, under Framework for PAK-NORWAY Institutional Cooperation Program (ICP) Grant, submitted by CMBG group leader, where I dedicatedly participated in writing the project grant application. Together with Prof. Atle Bones (Main Principal Investigator), I am the Co-Principal Investigator of this project.
- Funding for master student project "Studying attractiveness and defense responses of *Brassica napus* transgenic *MINELESS* plants to insects for sustainable pest management" for Lucky fund

scholarship from The Royal Norwegian Society of Science and Letters in 2013, where together with CMBG group leader, I as co-supervisor contributed in writing of the project proposal for our master student.

- FUGE Mid-Norway prize for the article “Plant Molecular Stress Responses Face Climate Change”, published in Trends in Plant Science, December 2010, 2011.
- Travel grant funding from Norwegian Functional Genomics Initiative (FUGE) Mid-Norway, 2009.
- Funding of project “Plant Innate Immunity” in 2008 (my previous Researcher position: May 2008-May 2012), from The Research Council of Norway (RCN), submitted by CMBG group leader, where I dedicatedly participated in writing the project grant application.
- Norwegian Government Scholarship from RCN through Government of India, 2003.
- Senior Research Associate Fellowship (my position at PAU through funding of project proposal) from Council of Scientific and Industrial Research (CSIR), India, 2003.
- Young Scientist award in National Symposia on Progress in Hormonal Research: Plants and Animals, India, 1994.

#### **ADMINISTRATION**

- Coordinator of Department of Biology, NTNU teaching courses: BI3013, BI1001 and MOL4010.
- Wrote/Participated in writing research grant applications to get funding from NTNU, The Research Council of Norway (RCN) (FRIBIO/FRIMEDBIO, INDNOR/JOINTINDNOR, Food Programme, and Climate Programme), The Norwegian Agricultural Agency, PAK-NORWAY Institutional Cooperation Program (ICP) Grant, KLIMAFORSK, INNO INDIGO, Marie Curie Grants, and through EU programmes.
- Coordinated activity at labs belonging to phospholipase (PLA2) group.
- Responsible for arranging seminar/weekly group meetings of CMBG and PLA2 groups, Department of Biology, NTNU.
- Organising committee of hosting national and international conferences in India.
- Participated in reviewing manuscripts from high to medium impact journals.
- Involved with the Norwegian and Indian Scientific premier bodies, RCN through Govt. of India, The Council of Scientific and Industrial Research (CSIR), Indian Council of Agricultural Research (ICAR), Department of Biotechnology (DBT), India to carry out different research projects.
- Committee member for recruitment of PhD and postdocs.

#### **REVIWER FOR MANUSCRIPTS INDEPENDENT/TOGETHER WITH GROUP LEADER**

Chemoecology, AOB Plants, Planta, Plant Cell Reports, Plant Physiology, Phytochemistry, Agronomy for Sustainable Development, PLOS ONE, Acta Physiologiae Plantarum, Journal of Economic Entomology and Plant Molecular Biology.

#### **VISITING POSITIONS DURING ACADEMIC POSITIONS IN NORWAY**

- Laboratory of Zoology, Biosciences Institute, University of Mons, Belgium. (Hosts: **Prof. Pierre Rasmont and Assistant Prof. Denis Michez**).
- Department of Forest health, Norwegian Institute of Bioeconomy Research (NIBIO), Ås,

Norway. (Host: **Res. Prof. Carl Gunnar Fossdal**).

- German Centre for Integrative Biodiversity Research (iDiv), Germany, August 2015. (Host: **Prof. Nicole M. van Dam**).
- Rothamsted Research, UK. June-July 2014. (Host: **Dr. Samantha Cook**).
- Bioforsk (now part of Norwegian Institute for Bioeconomy Research (NIBIO), As, Norway. August 2013. (Host: **Dr. Richard Meadow**).
- Center for Integrative Genetics (CIGENE), UMB, As, Norway, March 2012. (Host: **Prof. Odd Arne Rognli**).
- Plant Research International (PRI), Wageningen University and Research Centre (WUR), The Netherlands, June 2009-November 2009. (Hosts: **Prof. Robert D. Hall and Dr. Ric de vos**).
- The Netherlands Institute of Ecology (NIOO-KNAW), The Netherlands, Jan.-Feb. 2009. (Host: **Prof. Nicole M. van Dam**).
- Swedish University of Agricultural Sciences (SLU), Uppsala, Sweden, November 2008. (Host: **Prof. Barbara Ekbom**).
- Bielefeld University, Germany, October 2008-November 2008. (Host: **Prof. Caroline Muller**).
- Imperial College, London, August 2007-September 2007 and April 2007-May 2007. (Host: **Dr. John Rossiter**).
- Norwegian University of Life Sciences (NMBU), February 2004-April 2004. (Host: **Dr. Magnor Hansen**)

#### **NATIONAL AND INTERNATIONAL COLLABORATIONS / NETWORKING**

- Profs. Pierre Rasmont and Assistant Prof. Denis Michez, Laboratory of Zoology, Biosciences Institute, University of Mons, Belgium.
- Prof. Nicole M. van Dam, German Centre for Integrative Biodiversity Research (iDiv), Germany.
- Prof. Caroline Muller, Bielefeld University, Bielefeld, Germany, UK.
- Drs. John Rossiter and Glen Powell, Imperial College, London, UK.
- Prof. Robert D. Hall and Dr. Ric de Vos, Plant Research International (PRI), Wageningen University and Research Centre (WUR), Wageningen, The Netherlands.
- Dr. Sam Cook and Lesley Smart, Rothamsted Research, UK.
- Dr. Richard Meadow, Norwegian University of Life Sciences (NMBU), As, Norway, and Norwegian Institute for Bioeconomy Research (NIBIO), Norway.
- Dr. Agnieszka Bartoszek, Department of Food Chemistry, Technology and Biotechnology, Faculty of Chemistry, Gdansk University of Technology (GUT), Gdansk, Poland.
- Dr. Graciela Rusch, Department of Terrestrial Ecology, Norwegian Institute for Nature Research (NINA), Trondheim
- Drs. Jam Nazeer Ahmad and Samina Jam Nazeer Ahmad, University of Agriculture Faisalabad (UAF), Pakistan.

## *Selected list of publications*

Ahuja I, de Vos CH, Rohloff J, Stoopen G, Halle KK, Ahmad SJNA, Hoang L, Hall RD and Bones A (2016) Arabidopsis myrosinases link the glucosinolate-myrosinase system and the cuticle. **Scientific Reports**, 6:38990 | DOI: 10.1038/srep38990.

Ihsan MZ, Ahmad SJNA, Shah ZH, Rehman HM, Aslam A, Ahuja I, Bones AM and Ahmad JNA (2017) Gene mining for proline based signaling proteins in cell wall of *Arabidopsis thaliana*. **Frontiers in Plant Science**, 8: 233 doi: [10.3389/fpls.2017.00233](https://doi.org/10.3389/fpls.2017.00233)

Ahuja I, van Dam NM, Winge P, Tralnes M, Heydarova A, Rohloff J, Langaas M and Bones AM (2015), Plant defence responses in oilseed rape *MINELESS* plants after attack by cabbage moth *Mamestra brassicae*. **Journal of Experimental Botany**, 66: 579-592.

Ahuja I\*, Kissen R\* and Bones AM (2012) Phytoalexins in defense against pathogens, **Trends in Plant Science**, (Feature Review; among the top five most read articles since its publication until June, 2013) 17: 1360-1385. \* contributed equally. (ISI Web of Science) (*Highly cited paper*).

Ahuja I, Borgen BH, Hansen M, Honne BI, Muller C, Rohloff J, Rossiter JT and Bones AM (2011) Oilseed rape seeds with ablated defence cells of the glucosinolate-myrosinase system. Production and characteristics of double haploid *MINELESS* plants of *Brassica napus* L. **Journal of Experimental Botany**, 62: 4975-4993 (Cover story).

Ahuja I, de Vos, RCH, Bones AM and Hall RD (2010) Plant molecular stress responses face climate change, **Trends in Plant Science**, 15: 664-674 (Featured article in December 2010, among the most read articles; awarded FUGE Mid-Norway prize for the year 2011). (ISI Web of Science) (*Highly cited paper*).

Ahuja I, Rohloff J and Bones AM (2010) Defence mechanisms of Brassicaceae: implications for plant-insect interactions and potential for integrated pest management, A review, **Agronomy for Sustainable Development** 30: 311-348.

Björkman, Maria, Ahuja I, Folkedal SA, van Dam NM, Bones AM and Meadow R (2014) Feeding of turnip root fly (*Delia floralis*) and cabbage root fly (*Delia radicum*) larvae on *Brassica napus* L. transgenic *MINELESS* plants - Effects on insect development. **Integrated Protection in Field Vegetables, IOBC-WPRS Bulletin** 107: 191-195.

Borgen BH\*, Ahuja I\*, Thangstad OP, Honne BI, Rohloff J, Rossiter JT and Bones AM (2012) Myrosin cells' not a prerequisite for aphid feeding on oilseed rape (*Brassica napus*); but affect host plant preferences, **Plant Biology**. 14: 894 -902. \* contributed equally.

Ahuja I, Rohloff J and Bones AM (2011) Defence mechanisms of Brassicaceae: implications for plant-insect interactions and potential for integrated pest management. In: **Sustainable Agriculture**: Volume 2, E. Lichtfouse et al. (eds.), Springer Science+Business Media B.V. - EDP Sciences 2011, pp. 623-670.

Borgen BH, Thangstad OP, Ahuja I, Rossiter JT and Bones AM (2010) Removing the mustard oil bomb from seeds: transgenic ablation of myrosin cells in oilseed rape (*Brassica napus*) produces *MINELESS* seeds, **Journal of Experimental Botany** 61: 1683 - 1697.

Gill US, Banga SS, Ahuja I, Chauhan P and Banga SK (2006) *In vitro* regeneration from cotyledonary explants of toria and brown sarson morphotypes of *Brassica rapa* (L), **Journal of Oilseeds Research** 23: 2630.

Ahuja I and Malik CP (2005) Changes in enzymatic activities of dark CO<sub>2</sub> metabolism and sucrose metabolism during fruit development in *Brassica* sp., **Indian Journal of Agricultural Biochemistry** 18:

## Ishita Ahuja's Selected list of publications

9799.

Ahuja I and Malik CP (2005) Changes in endogenous hormones in silique development of *Brassica oxyrrhina* and *Brassica tournefortii*, **MRPC Brassica** 7: 53-58.

Chandra A, Gupta ML, Ahuja I, Kaur G and Banga SS (2004) Intergeneric hybridization between *Erucastrum cardeminioides* and two diploid crop *Brassica* species, **Theoretical and Applied Genetics** 108: 1620-1626.

Ahuja I, Bhaskar PB, Banga SK and Banga SS (2003) Synthesis and cytogenetic characterization of the intergeneric hybrids of *Diplotaxis sifolia* with *Brassica rapa* and *B. juncea*, **Plant Breeding** 122: 447-449.

Banga SS, Bhaskar PB and Ahuja I (2003) Synthesis of intergeneric hybrids and establishment of genomic affinity between *Diplotaxis catholica* and crop *Brassica* species, **Theoretical and Applied Genetics** 106: 1244-1246.

Bhaskar PB, Ahuja I, Janeja HS and Banga SS (2002) Intergeneric hybridization between *Erucastrum canariense* and *Brassica rapa*. Genetic relatedness between EC and A genomes, **Theoretical and Applied Genetics** 105: 754-758.

Ahuja I, Gupta ML and Raheja RK (2002) Biochemical attributes of *Brassica* and *Eruca* cultivars grown in Punjab, **Journal of Oilseeds Research** 19: 220-222.

Prakash S, Ahuja I, Bhatt SR, Kirti PB and Chopra VL (2001) Expression of male sterility in alloplasmic *Brassica juncea* with *Erucastrum canariense* cytoplasm and development of a system for fertility restoration, **Plant Breeding** 120: 479-482.

Banga SS, Banga SK and Ahuja I (2000) Breeding for Quality. In: **Plant Breeding: Theory and Practice** (ed.) Chopra VL pp. 163-190. *Oxford and IBHPublishing Co.*, New Delhi, ISBN 8120413725.

Kakralya BL and Ahuja I (2001) (revised edition 2005), **Transgenic plants: Promise or Danger**, Agrobios (India). (Biotechnology series), **(BOOK)**.

### MEDIA CONTRIBUTIONS

Raps uten naturlig gift forsvarer seg best mot kalorm - <http://gemini.no/2014/03/raps-motstar-kalormangrep-uten-sitt-naturlige-giftforsvar/>.

Genmodifisert raps er toffere mot kalormen, <http://www.forskning.no/artikler/2014/mars/384501>.