

**MIRANDA HOUSE, UNIVERSITY OF DELHI
DELHI 110 007**

ANNUAL REPORT 2016-2017

1. Major activities and achievements during the period:

Miranda House is proud to be awarded **NIRF All India Rank One** college in the India Rankings 2017 announced by Shri Prakash Javedkar, Minister of HRD on 3 April 2017. MH was given an **Institutional Grade of A+ with CGPA 3.61** by NAAC. Dr. Monika Tomar was the only college teacher to receive the **Teaching Excellence Award 2016** at the 94th DU Founders Day. MH science departments were granted **Star College Status** by DBT after a review with a sanction of Rs 76 lakh for three years. MH launched its seventieth year celebrations in March 2017 by honouring seven alumnae across decades and conferring the Alumnae Association Excellence and Achievement Awards on former Principals Dr. T.S Rukmani and Dr. Kiran Datar.

Dr. Najma Heptulla, Honourable Governor of Manipur, inaugurated the Miranda House Centre for North East Studies in partnership with Institute of Bioresources and Sustainable Development in February 2017. This year nearly 150 students received the **Inspire** scholarship and 120 applicants from First Year.

2. Honours/ Distinctions:

1. Dr. Pratibha Jolly:

- received the GIREP 50th Anniversary Medal presented at the 50th Anniversary GIREP Seminar, Research-based proposals for improving physics teaching and learning – focus on laboratory work, JU Institute of Physics, Jagiellonian University, Kraków, Poland, 30 August to 3 September 2016. (GIREP: Groupe International de Recherche sur l'Enseignement de la Physique, International Research Group on Physics Teaching)
- was honoured for Life time Contribution to Physics Education in the Country by Indian Association of Physics Teachers (Regional Council - Delhi and Haryana), awarded at the 4th Annual Convention of IAPT Regional Chapter RC1 on 23 July 2016.

2. **Dr. Sharmila Purkaystha** received Fulbright Nehru Postdoctoral fellowships, 2016-2017

3. **Dr. Monika Tomar** received the **Excellence Awards for Teachers in Colleges** on 1 May 2016, the University Foundation Day. It is extremely significant that she was the only teacher from Delhi University to be selected for the award

4. **Ms. Suvasini** received the Chancellor's International Research Scholarship from University of Sussex to do Ph.D in Education.

5. Two DU Innovation Projects, **Climate Change, Water Security and Livelihood Resilience: Role of Traditional Knowledge and Modern Technologies in Rajasthan, India (MH 301)** and **Design of Affordable Water Purification devices using Green and Ecofriendly Bioactive Agents (MH 306)** were awarded **Certificate of Appreciation** and selected as poster presentation on 1 May 2016, the Delhi University Foundation day. These were amongst the top 20 selected from 400 DU Innovation projects.

3. Students with Distinctions (Selected few)

Academics

S. No.	Name	Course and Year	Position
1.	Supriya Bajpai	B.A. (H) Philosophy III	I
2.	Ninadini Sharma	B.Sc. (H) Botany III	I
3.	Priyanka Modi	M. Sc. (Final) Mathematics	I
4.	Divya Dutt	M. A. (Final) Music	I
5.	Smriti Bala	B.A. (H) Sanskrit III	II
6.	Anamika Manna	B. A. (H) Bengali III	II
7.	Anamika Sharma	B. A. (H) Music III	II
8.	Ruchi Bhatt	B.Sc. (H) Botany III	II

4. Sports

In 2016-2017, Miranda House taekwondo team continued their winning spree for the fourth consecutive year by becoming the Winner's in the Delhi University Inter College Taekwondo Championship with 6 Gold medals and 1 Silver medal, the Tennis team and the netball team emerged Winner's in the Delhi University Inter College Tennis and Netball Championship, the Archery team secured II Position in Indian Round in the Delhi University Inter-College Archery Championship, the Yoga team secured III Position in the Delhi University Inter College Yoga Championship, the Athletics team secured IV Position in the 92nd Delhi University Inter College Athletics Meet by winning 2 Gold, 4 Silver and 1 Bronze medal, the Weight Lifting team won 1 Silver and 1 Bronze medal in the Inter College Weight Lifting Championship and the Power Lifting team won 3 Bronze medals in the Inter College Power Lifting Championship

Individually the following students excelled in their sports

S. No.	Name	Course and Year	Position and Event
1.	Harshita Chugh	B.Sc. (H) Mathematics III	– Runners Up; Asia Tennis Tour of Sri Lanka, Colombo – Quarter Finalist; Asia Tennis Tour of India, New Delhi – Winner Doubles; AITA 50K Tournament, Yamuna Nagar
2.	Meena	B.Sc. (H) Chemistry II	– VI position; 4 th IKF Asian Korfball Championship, Jaipur
3.	Himani Mor	B. A. Programme II	– I Position; All India Inter Univ Tennis Championship, Jaipur – I Position; All India Inter Univ Tennis Championship, Noida – Winner (Singles); AITA Tournament; Karnal, Yamuna Nagar, Chandigarh and Gurgaon – II Position; 35 th National Senior Taekwondo Championship, Vishakapatnam
4.	Aashna Rojh	B. A. Programme II	– III Position; All India Inter Univ Korfball Championship, TN
5.	Krati Girhotra	B.A. (H) Sociology I	IX Position; National Junior Athletics Championship, Coimbatore

NCC

- Junior Under Officer Surabhi Shukla represented college from Delhi Directorate in the NCC **Republic Day Camp** and was selected in the Guard of Honor to the Prime Minister
- Cadet Simran Kapoor was awarded the **All India Best Master of Ceremonies Gold Medal** for being the main emcee for all the VIP visits and the DG Appreciation award, along with being the All India Cultural Senior for the Central Cultural being performed at the Prime Minister house and the Rashtrapati Bhawan.

5. Publications (Selected few)

1. Sinha Roy S, Mukherjee S, Ballard BR and Das SK. 2016. Protection against Dimethylbenz[a] Anthracene-induced breast cancer in female rats by α -Lactalbumin. International Journal of Cancer and Oncology 3(1): 1-6. ISSN: 2377-0902.
2. Gupta, R., Tomar, M., Rammohan, S., Katiyar, R. S. & Gupta, V. 2016. Multiferroic cantilever for power generation using dual functionality. Applied Physics Letter. 109: 193901
3. Jindal, K., Tomar, M., Katiyar, R. & Gupta, V. 2016. Raman scattering and photoluminescence investigations of N doped ZnO thin films: Local vibrational modes and induced ferromagnetism. J. Applied Physics. 120: 135305. DOI:10.1063/1.4964257 (2.19)
4. Talwar, J., Mohanty, R. K. & Singh, S. 2016. A new algorithm based on spline in tension approximation for 1D quasi-linear parabolic equations on a variable mesh. International Journal of Computer Mathematics. 93(10): 1771-1786

5. Aggarwal S. & Gupta C. 2016. Solving intuitionistic fuzzy solid transportation problem via new ranking method based on signed distance. *International Journal of Uncertainty, Fuzziness and Knowledge-Based Systems*. 24: 483-501
6. Sharma, M., Pathak, M., Ojha, H., Kumari, R., Sharma, N., Roy, B. & Jain, G. 2016. Green synthesis, characterization and antibacterial activity of silver nanoparticles. *Green Chem. & Tech. Lett.* 2(2):103-109
7. Saraav, I., Pandey, K., Sharma, M., Singh, S., Dutta, P., Bhardwaj, A. & Sharma, S. 2016. Predicting promiscuous antigenic T cell epitopes of Mycobacterium tuberculosis mymA operon proteins binding to MHC Class I and Class II molecules. *Infect. Genet. & Evol.* 44: 182–189.
8. Sharma, M. & Sharma S. 2015. Toll Like Receptor-2 Signaling in Mycobacterium Tuberculosis Infection—A Double-Edged Sword. *Forum on Immunopathol. Diseases & Therap.* 6 (3–4): 227–235
9. Pathak, M., Sharma, M., Ojha, H., Kumari, R., Sharma, N., Roy, B., Jain, G. 2016. Green synthesis, characterization and antibacterial activity of silver nanoparticles. *Green Chemistry & Technology Letters*. 2: 108-115.
10. Kaur, B. 2016. Sustainable Development In India: Issues and Challenges. *Ind. J. Economics and Develop*, 12(4):751-758, ISSN 2277-5412
11. Nanda, B. 2016. Women's health and rights: issues and concerns. *Indian Journal of Public Administration*, January-March issue, Indian Institute of Public Administration, ISSN 0019-5561.
12. Rao, G. 2015. Reconstructing signs and Images: A feminist re-interpretation of Mahabharat. *Modern Research Studies* 2(3) ISSN:2349-2147

6. Research Projects:

1. **Department of Biotechnology (DBT) Star College Scheme** sanctioned Rs. 55 lakh to Departments of Botany, Zoology, Chemistry, Physics and Computer Science. The Project was further extended by two years. An amount of Rs. 10 lakh was released by DBT in the year 2014-2015 and an amount of Rs. 19 lakh has been received from DBT in the year 2015-2016. A review was held in 2016 and Miranda House has been given the star college status with a grant of 76 lakh for equipment and recurring for three years.
2. **University of Delhi Star Innovation projects**
Duration: November 2015-ongoing
Budget: Rs 1.3 Crore
 1. Eureka My Lab! Developing Resources and Hands-on Science Activities and an Adaptation Accessible for Visually Impaired- MH01 (Rs 37.50 lakh)
 2. Therapeutic potential of Medicinal Plants: Culture, Extraction, Physicochemical Characterization and Testing their Cytotoxic or Immunostimulatory Properties- MH02 (Rs 26.67 lakh)
 3. 3R: Reduce, Reuse, Recycle – MH03 (Rs 40.88 lakh)
 4. Core Development of College Infrastructure under Star Innovative Project Scheme (Rs 26 lakh)
3. **DU Innovation Projects**
Duration: August 2015-November 2016
Budget: Rs 53.1 lakh
 1. Climate Change, Water Security and Livelihood Resilience: Role of Traditional Knowledge and Modern Technologies in Rajasthan, India — MH 301 (Rs 4.5 lakh)
 2. Children's Picture Books in India: Rethinking History, storytelling and Pedagogy – MH 302 (Rs. 3.5 lakh)
 3. Continuity and Change in the Youth's perception of National Interest in India's Foreign Policy: A comparative study of Delhi University students with Jadavpur and Madras University students – MH 303 (Rs. 3.5 lakh)
 4. Business Ethics: Business Leadership in Bhagavad Gita – MH 304 (Rs. 3.1 lakh)
 5. Mobile! My Lab: Any time, Any where – MH305 (Rs 6.5 lakh)
 6. Design of Affordable Water Purification devices using Green and Ecofriendly Bioactive Agents – MH306 (Rs 6 lakh)
 7. Synthesis of Heena (*Lawsonia inermis*) based Scaffolds and Comparison of their Colour and Antimicrobial Activity– MH307(Rs 6 lakh)
 8. Reward Network as a new form of experiential marketing – MH308 (Rs 3.5 lakh)
 9. Antimicrobial Finishing of Textiles using Eco-Friendly Bioactive Agents – MH309 (Rs 6.5 lakh)
 10. Sugarcane to Nanoparticles: Green Nanotechnology the future – MH310 (Rs 5 lakh)
 11. Phytoremediation of Heavy Metal Contamination & Extraction of Nanoparticles – MH311(Rs 5

lakh)

4. **Dr. Monika Tomar** Rs 424.38 lakh from DST for *Development of thin film Surface Acoustic Wave device as a platform for the sensing applications* (Nov. 2014 to Nov. 2019), Rs. 429.46 lakh from Deity for *Demonstration of GaN LED by PLD* (February 2014 to August 2016)
5. **Dr. Sadhna Sharma and Dr. Monika Sharma** Rs. 66.48 Lakhs from DBT for *Molecular Cloning and Immunological Validation of Three Hypothetical Proteins of M. Tuberculosis with Strong T-cell Epitopes* from Department of Biotechnology (2013-2016).
6. **Dr. Poonam** Rs. 10 Lakh from UGC for *Detoxification of environmental persistent organic pollutants primarily pesticides using functionalized nanomaterials* (Feb 2017- Feb 2019) and Rs 36.81 Lakh from DST for *Thio-click approach for the synthesis of stable glycomimetics and chiral oxathiacrown ethers* (Nov 2016 – Nov 2019)
7. **Dr. Rakhi Parijat** Rs. 2.5 lakh from JNU Disaster Research program on *Neighbourhood Mapping* (2016)

7. Patent Filed

Patent filed by Dr. Monika Tomar on *Multi-States Non Volatile Opto-Ferroelectric Memory* (Application no.- 201611001338) filed on 13 January 2017

8. Seminars Organized (Selected few)

1. *Riddle of Ravens* by Dr. Kit Patrick, Department of Philosophy, School of arts, University of Bristol, UK: 23 January 2017
2. *Blind poet seen in Mewar Paintings* Prof. John S. Hawley, International, Columbia University; 23 February 2017
3. *Governing Riverscapes* by Dr. Alexander Follmann, Lecturer and Researcher at Institute of Geography, University of Cologne, Germany, 28 September 2016
4. *Innovation in Science Education* by Ken Silburn, Founder and Coordinator, iSTEM Australia; 3 August 2016
5. *Application of New Generation Sequencing in Cancer Diagnostics* by Dr. Azeet Narayan, Yale University, New Haven, US; 3 March 2016
6. *Eyes on Earth – Exploring Earth from Space* delivered by Dr. Diane L Evans, Director, Earth Science and Technology Directorate, Jet Propulsion Lab, NASA, USA; 17 February 2016

9. Conferences organized (Selected few)

1. Language, Ethics and Governance: Decoding Logic, Argumentation and Rhetoric in Indian Politics from 24 to 25 January 2017.
2. Information Technology and Society on 15 February, 2017.
3. Many meanings of the heritage on 15 February, 2017.
4. Epigraphy and Sanskrit in world literature from 14 to 15 January, 2017.
5. 9th Indo-Dutch Collaborative Programme on Management and Cultural Contexts from 25-29 January 2017
6. International Cosmic Day on 2 November 2016

10. Seminar /Conferences Presentations (Selected few)

1. Dr. Pratibha Jolly presented a Plenary, *Physics Education and Global Challenges* at the Annual Forum of Erasmus Project *Horizons in Physics Education* (HOPE); Life Long Learning Programme of European Union; Constanta, Romania, 7 to 11 September 2016
2. Dr. Pratibha Jolly presented a Lecture *Women in Physics and Physics Education* at the ICPE-GIREP World Conference on Physics Education (WCPE), *Contemporary Science Education and Challenges in the Present Society: Perspectives in Physics Teaching and Learning*, University of São Paulo, São Paulo, Brazil, 11-15 July 2016
3. Dr. Sadhna Sharma presented a paper on *Latency associated antigens Rv2032 and Rv2626c emerge as good vaccine candidates against Mycobacterium tuberculosis*; Singh, S. Pandey, K. Sharma, M. Sharma, S. at 26th ECCMID Congress, the European Congress of Clinical Microbiology and Infectious Diseases, Amsterdam, Netherlands, April 9 – 12, 2016.
4. Dr. Sadhna Sharma presented a paper on *Rv2626c and Rv2032 produce a TH1 response in Tuberculosis patients and their healthy contacts*, at the Keystone Symposia S1 Translational Vaccinology for Global Health, London, United Kingdom on Oct 25 - Oct 29, 2016

5. Dr. Mallika Verma, presented a paper *INSPIRE Internship Camps: Nurturing Talent of Young Students in Sciences*; Jolly, P. Verma, M. Roy, B. Tomar, M. Sharma, A.; at the International Journal of Arts and Sciences Conference at Toronto, Canada from 31 May – 03 June 2016
6. Dr. Bijayalaxmi Nanda was a panellist on *Ensuring Women's Equal Participation in the Cyber Revolution*, at the panel organised by Centre for Social Research at the 60th Session of the United Nations Commission on the Status of Women (CSW-60) at New York, USA, 14-24 March, 2016
7. Dr. Bijayalaxmi Nanda presented a lecture on *Gender* at the University of Birmingham from 21.05.2016 to 22.05.2016
8. Dr. Bashabi Gupta presented a paper on *Images and livelihood: constructing the Bengali marriage rituals and practices in India*, in the International Conference on Modern Matters: Negotiating the Future in Everyday Life in South Asia, University of Lund, Sweden, 20-22 September 2016
9. Dr. Monika Tomar delivered a lecture on *Prominent Photo-voltaic response in Multiferroic BFO/BTO Heterostructures*; at the Joint IEEE International Symposium on the Applications of Ferroelectrics (ISAF), European Conference on Applications on Polar Dielectrics (ECAPD), and Workshop on Piezoelectric Force Microscopy (PFM), Darmstadt, Germany, 21-25 August 2016
10. Dr. Kalawati Saini, presented a paper *Concentration- dependent electrochemical synthesis of Quantum Dot and nanoparticles of copper and shape- dependent degradation of methul orange* at the Conference American Advance Materials Congress (AAMC-2016), Royal Caribbean Cruise Ship “Navigator of the Seas”, Caribbean Sea from Miami (USA)-Nassau (Bahamas) – Cozumel (Mexico) – Miami (USA) from 4-9 December 2016
11. Dr. Poonam, presented a poster on *Design and Synthesis of Functionalized Organic- Inorganic Hybrid Nanomaterials and its Application in Biomass Conversion Process* at the 2017 MRS Spring Meeting & Exhibition, Phoenix Convention Centre, Phoenix, Arizona, U.S.A. from 17-21 April 2017
12. Dr. A.R Sitalakshmi presented a paper *Promoting students' understanding of Chemical Bonding through an intervention based on constructivist approach* in WorldSTE2016, 5th World Conference of Science and Technological Education organized by International Council of Associations for Science Education at Antalya, Turkey, 01-05 November 2016.
13. Dr. Saswati Sengupta presented a paper at New York University's Medieval Renaissance Centre's Spring Conference from 14– 15 April 2017

11. MoUs Signed

International

1. Utrecht Business School, the Netherlands Indo Dutch Program:
2. Lynchburg College, USA; bilateral exchange of faculty and students
3. George Washington University, Washington DC, USA; academic collaboration
4. Ontario Universities, Canada; students exchange program
5. GIREP: Groupe International de Recherche sur l'Enseignement de la Physique, International Research Group ; To promote physics education and physics education research activities, share information and other collaborative efforts.

National

1. National Institute of Immunology (NII); Science Setu Programme
2. IRIS Publication Pvt. Ltd; training programmes conducted
3. Google Ltd; Use google apps for education
4. IPCA; assistance with safe disposal of plastic waste
5. Tata Solar Power; undertake industry based project work
6. Guiding Star Digital Publisher; develop apps
7. Sonem; for installing and maintaining luminaries

12. Other International Collaborations

1. S.P. Jain School of Global Management
2. University of Chicago, Graham School of Continuing Liberal and Professional Studies, USA
3. University of Chicago Delhi Centre
4. Utrecht Business School, the Netherlands
5. George Washington University, Washington DC, USA
6. Lynchburg College, Virginia, USA
7. Wisconsin University, USA
8. University of Sussex, UK
9. King's College, London, UK

10. University of Sydney, Australia
11. American Embassy
12. Australian High Commission

13. Students under Exchange Program

Outbound

1. SP Jain School of Global Management: Initiative at Miranda House (2 students in December 2016)
2. Utrecht Business School on *Strategic Management and Culture* from June - July 2016 (2 faculty and 12 students)
3. Lynchburg College (one student has been selected for Master's in Science Education).
4. Wisconsin University (2 faculty and 2 students in August 2015)
5. Chicago University (1 student has been offered generous financial assistance to pursue Master of Liberal Arts)
6. University of Sussex (one student to the Sussex University International Summer School has been selected to attend a four week summer school module on Health in a Global Perspective in July-August 2016)

Inbound

1. Utrecht Business School (10 students)

14. Placement Details

- a. Number of students getting successful placements~90 (90% of students who apply get placement)
- b. Number of companies/industries visited for campus recruitment 40 companies visited the college

15. Exchange and outreach activities

A variety of forums in Miranda House engage in extension and outreach

1. Clean Environment: NSS volunteers and MH Vataran members, about 100, participate regularly in DU campus cleanliness drive, Yamuna cleanliness drive, clean India green India, Mega tree plantation drive
2. Education to the underprivileged children. 60 NSS volunteers take turns to teach school going students helping them with their homework 3 teaching centres of the NSS currently: one is in the slums of Kriti Nagar, the other is slums of Malkaganj and the third one in Hudson Lane
3. Helping people with disabilities: NSS and Enabling Society volunteers assist visually challenged students in many ways, by providing academic help by read and recording lessons, etc
4. Awareness Drive for generating awareness on diseases like Alzheimer's at Lodi Garden on 20 September 2016 and Cancer awareness programme

Two well established projects Tarang and Zaffran aims at making women in slums economically independent : Enactus volunteers have undertaken to empower communities in need through social enterprise

16. Library Development

The total sanctioned budget was Rs. 19,74,293 . In the academic year 2016-17, 686 volumes of books were added.

This newly renovated library with unobstructed long corridors; expansive reading halls with flux of natural light and air ventilation has led to increase in the occupancy of the library. The Libsys LSEase Management Software was upgraded to Web centric OPAC, connected to DU LAN, it provides access to DULS and major databases such as N-LIST and INFLIBNET. Orientation programme was organized for faculty and now OPAC is available on Intranet.

Information Literacy Workshop was organized for faculty and students in collaboration with Delhi University Library system to upgrade them on e-resources available on DULS portal. Book Exhibitions are held every year.

17. Faculty Strength

Permanent: 139, Temporary: 02, Ad Hoc: 52

18. Financial Allocation and Utilization

Grant sanction in 2016-2017 : Rs.40,00,89,000

Utilization: Rs. 41,43,84,420

19. Other Significant Information

Students have been selected for internships in the best institutes. As many as 20 science students did summer internship at Vikram Sarabhai Space Centre, ISRO, Chennai Mathematical Institute, NIUS, Tata Institute of Fundamental Research, Physics Research Laboratory, Indian Institute of Science, Inter-University Accelerator Centre, Jawaharlal Nehru Centre for Advanced Scientific Research (JNCASR). More than fifty students worked as summer interns in the DS Kothari Centre for Research and Innovation in Science Education at Miranda House.

Illustrative examples of international engagement of students in academic year 2016-2017 is given below:

- Unnati Akhauri, B.Sc. (H) Physics III Year, Sakura Exchange Programme, University of Osaka, Japan , January 2017
- Tamanna Jain, B.Sc. (H) Physics III Year, Max Planck Institute for Gravitational Physics for internship in Jurgen Ehlers Spring School, 5-18 March 2017
- Vani Bhatia, B.Tech.(Comp Science) did an internship in SOPHOS GMBH, Karlsruhe from 6 th June 2016, 2016 to 31 st August 2016. She worked in the Testing Automation and Framework Development Department.
- Saniya Heba, B. Sc. (H) Physics joined Masters in Physics at RWTH Aachen University, Germany, September 2016
- Saloni, B.Sc.(H) Physics joined Masters in Physics at RWTH Aachen University, Germany, September 2016
- Preeti Kumari, B.A. (Hons.) Political Science; University of Sussex (Summer School on Human Rights; 1 month), UK
- Pragya Chawla, B.Sc (H) Physics, is pursuing M.Sc. Physics from McGill University, Canada with full scholarship
- Jyoti Agarwal B. Sc (H) Chemistry III Year is pursuing Masters in Science Education Program at Lynchburg College from Fall Semester 2016. She has been given generous financial assistance.
- Unnati Akhauri, B. Sc. (H) Physics III for internship at S. N. Bose Scholars Program at Princeton University, New Jersey, USA in Experimental Particle Physics Division, 2 June-13 August 2016.

The following books by faculty were published in 2016-17

1. P. Chakraborty, Prekhhiter Vinnata Vinnatar Prekhhit; Bangla Sahityetihaas Charcha Karigar, Kolkata; 2016
2. Bharati Jagannathan. A meeting in the Street, Pratham Books, Bangalore; 2016
3. Bharati Jagannathan, A Stranger come Calling; Pratham Books, Bangalore; 2016
4. Anindita Sarkar; Structural Changes in Irrigation Systems and Accessibility of Groundwater Resources in Punjab; Manak Publications Pvt Ltd, New Delhi. ISBN – 978-93-7831-426-1.2016
5. Saswati Ganguli; Sanjay Bhattacharya : Ekti Parikrama; Pustak Bipani.27 Beniatola Lane. Kolkata 700004. ISBN 978-93-82663-34-8. 2016
6. Kavita Bhatia; Rajendra Yadav Granthawali, Khand 15; Radhakrishna, ISBN 978-81-8361-673-7. 2016
7. Paramita Chakraborty; Sahityo Itihaaser Binirman: Tatwa O Tathye; Bangiyo Sahityo Samsad, Kolkata; 2016