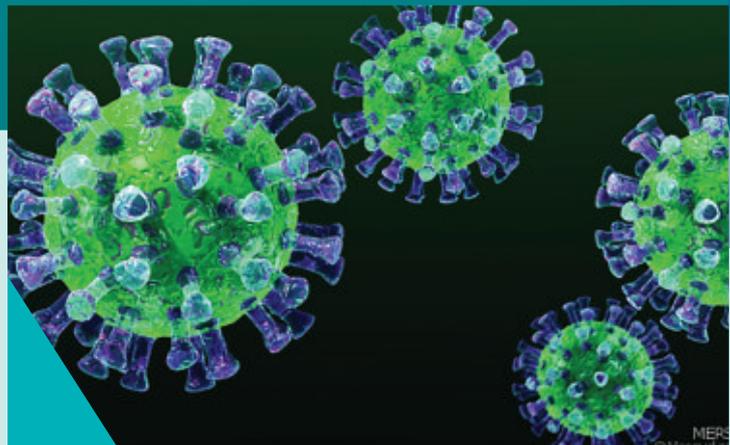


PROSPECTUS 2021



Institute of Science, Nirma University

OUR VISION

Shaping a better future for mankind by developing effective and socially responsible individuals and organizations

OUR MISSION

Nirma University emphasizes the all-round development of its students. It aims at producing not only good professionals, but also good and worthy citizens of a great country, aiding in its overall progress and development.

It endeavours to treat every student as an individual, to recognize their potential and to ensure that they receive the best preparation and training for achieving their career ambitions and life goals.

QUALITY STATEMENT

To develop high quality professionals who reflect and demonstrate values that the university stands for, through innovation and continuous improvement in facilitation of learning, research and extension activities

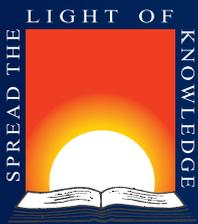


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Nirma Education & Research Foundation



Dr Karsanbhai K. Patel, the founder Chairman of the Nirma group, is a legendary business personality who inspires aspiring entrepreneurs all over the country. Dr Karsanbhai Patel crystallized his long-cherished dream of providing world-class facilities for professional education in the state of Gujarat through the establishment of Nirma Education and Research Foundation (NERF) in 1994. He believed that an institute of professional courses imparting world-class education facilities to the youth, was the need of the hour for the state of Gujarat. His dream was also to inculcate the spirit of social relevance through education among the young students of the country.

NERF established Nirma Institute of Technology in 1995, Nirma Institute of Management in 1996. These institutions made their mark by achieving very high standards and as a natural consequence of the outstanding performance in their respective areas, the Government of Gujarat in 2003 approved the proposal of NERF to grant the status of a University under a special act passed by the Gujarat State Legislative Assembly. Subsequently the University established five more institutes, the Institute of Pharmacy in 2003, the Institute of Science in 2004, the Institute of Law in 2007, Institute of Architecture and planning in 2014 and Institute of Commerce in 2016. All the Institutes under Nirma University are providing value-based quality professional education and are widely respected for their contribution to the society.



Board of Trustees

Dr Karsanbhai K. Patel

Chairman, Nirma Limited,
Chairman, Nirma Education and Research
Foundation,
President, Nirma University

Shri Ambubhai M. Patel

Managing Trustee

Shri R. D. Shah

Eminent Chartered Accountant

Shri Hirenbhai K. Patel

Managing Director, Nirma Limited

Shri Rakeshbhai K. Patel

Vice Chairman, Nirma Limited

Shri K. K. Patel

Joint Managing Trustee,
Vice President, Nirma University

Nirma University

Nirma University, Ahmedabad, was established as a statutory university in the year 2003 under Gujarat State Act by the initiative of the Nirma Education and Research Foundation (NERF). The University is also recognized by the University Grants Commission (UGC) under section 2(f) of the UGC Act. The University has received 'A' grade by National Assessment and Accreditation Council (NAAC), making it the first private university of Gujarat to achieve such honour. The University is a member of Association of Indian Universities (AIU) and Association of Commonwealth Universities (ACU). Since 2014 the University is recognized as SIRO (Scientific and Industrial Research Organization) by the the DSIR (Dept. of Scientific and Industrial Research), Ministry of Science and Technology, Government of India. Dr. Karsanbhai K. Patel, Chairman, Nirma Group of Companies and Chairman, NERF is the President of the University.

Nirma University consists of Faculty of Technology, Faculty of Management, Faculty of Pharmacy, Faculty of Science, Faculty of Law, Faculty of Architecture and planning, Department of Design, Faculty of Commerce and Faculty of Doctoral Studies and Research. The graduate, post graduate and doctoral programmes offered by these faculties are rated highly by accreditation agencies, industries, business magazines and students.

Innovation, excellence, and quality are the key driving forces on the campus and this has translated the vision of the University institutions into a reality. Today the campus vibrates with world class curricular activities and with myriad co-curricular and extra-curricular activities like international conventions, symposiums, conferences, student competitions, conclaves, short-term industry relevant programmes, cultural activities and sports.

Board of Governors

Chairman

Dr Karsanbhai K. Patel

Chairman, Nirma Limited,
Chairman, Nirma Education and Research Foundation,
President, Nirma University

Shri K. K. Patel

Vice President, Nirma University

Shri Rakeshbhai Patel

Vice Chairman, Nirma Limited

Shri Hirenbhai K. Patel

Managing Director, Nirma Limited

Shri J. P. Joshipara

Academician

Dr P. N. Bhagwati

Industrialist and Educationist,
Chairman, Bhagwati Sphero Cast Limited

Dr Pankajbhai Patel

Chairman and Managing Director
Zydus Cadila Health Care, Ahmedabad

Dr. Alka Mahajan

Dean, Faculty of Technology and Engineering, Nirma University

G. Ramachandran Nair

Executive Registrar (Secretary)

Dr Anup K. Singh

Director General, Nirma University

Ms Anju Sharma, IAS

Principal Secretary, Higher and Technical Education,
Education Department,
Government of Gujarat, Gandhinagar

Shri R. D. Shah

Chartered Accountant, Trustee
Nirma Education and Research Foundation

Prof. N. R. Madhava Menon

Hon. Director, Bar Council of Kerala
M.K.Nambyar Academy for Continuing Legal Education

Shri Kamalbhai Trivedi

Advocate General
Gujarat High Court, Ahmedabad

Shri Vipinbhai S. Parikh

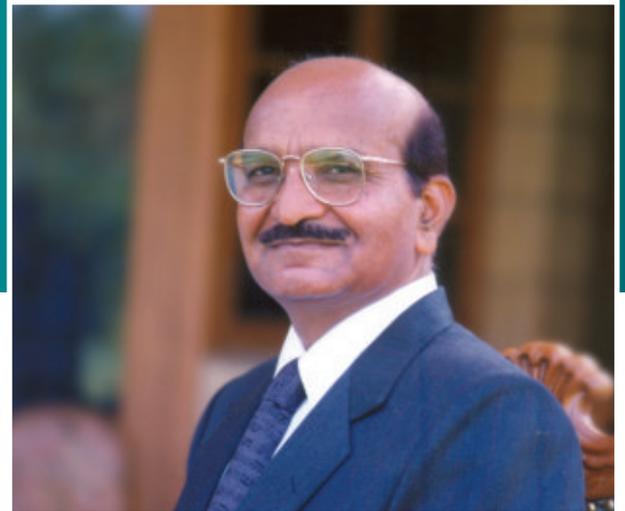
Advocate

Dr. Manjunath Ghate

Dean, Faculty of Pharmacy, Nirma University



President



Dr. Karsanbhai K. Patel
Chairman, NERF
President, Nirma University

Like the other constituent institutes of Nirma University, the Institute of Science draws much of its inspiration and strength from its founder, Dr. Karsanbhai K. Patel, Chairman, Nirma Limited. Dr. Patel is renowned for his contribution to industrial development in the country. In the last one decade, he has turned his attention to the growing challenges in the education. Among many social projects that he has initiated, Nirma Education and Research Foundation (NERF) is monumental of his commitment to society.

Dr. Patel has been conferred with "Padma Shri Award for the year 2010". He is also recipient of the "Udyog Ratna Award – 1990", "Gujarat Businessman Award -1998", "Ernst & Young Lifetime Achievement Award – 2006," "Sardar Vallabhbhai Patel Vishwa Pratibha Award-2009", "The Baroda Sun Lifetime Achievement Award 2009" and "Chemtech Award of Hall of Fame". Dr. Patel is awarded Honorary Doctorate of Humane Letters by Florida Atlantic University, USA for Business and Marketing acumen and philanthropy. He was also awarded Honorary D. Lit by Devi Ahilya Vishwavidyalaya, Indore.

Dr. Patel firmly believes that to withstand global competition and to satisfy the growing need of quality professionals, an academic institution must constantly grow, innovate, build strength and strive to become self-reliant.





Director General

Dr. Anup Singh

Director General
Nirma University



Dear Prospective Student,

India is known for its research acumen from the time immemorial. However, it is fast transforming as a vibrant knowledge economy. The country is successful in providing one of the best health care facilities and is one of the leading countries in the field of science and technology. The backbone of this achievement is scientific knowledge base, including basic biology, which is necessary to produce eminent scientists and academicians in the future.

At Nirma University, we provide high quality education in diverse branches of biological sciences, Biotechnology, Biochemistry and Microbiology. Along with the requisite knowledge in the subjects, we focus on the overall development of the students so that they are ready to take up the challenges that they will be facing in the future. We facilitate the personality development of students and help them realise their potential.

Nirma University is duly accredited by the National Assessment and Accreditation Council (NAAC). It provides outcome-based education, focused at employability, empowerment and entrepreneurship. The Institute of Science is at the cutting edge of research and innovation. It receives research grants from various central and state government funding agencies and its faculty members are active researchers.

The Institute, besides basic training in the life sciences, aims to nurture in you the employability skills like conception of innovative ideas, creative writing, presentation, communication, and overall execution which will help you take up novel research work in the future. Besides providing high quality training, the Institute of Science hosts a series of events like seminars, conferences and workshops to invite senior scientists, researchers, academicians and corporate professionals who present their work in their respective fields. These give students a good exposure to recent developments in modern biological research and ample scope to interact with them and discuss their ideas. The Institute has a placement cell that provides the students an opportunity to be placed in biotechnology and pharmaceutical companies.

The campus life is quite happening and colourful. The students are actively involved in a variety of co-curricular and extra-curricular activities, such as institute level and university level cultural festivals, sports activities, club activities and extension activities, which will remain with you as sweet memories throughout your lives. The Student Activity Centre is a unique centre, where students not only meet but also discuss serious academic and social issues. The natural ambiance, fascinating culture and sentient atmosphere of the campus is always thought provoking.

I assure you that you will receive high-grade quality learning and growth experience at the Institute of Science, Nirma University.

Anup Kumar Singh, PhD

Research Advisory Committee (RAC)

Prof. L. S. Shashidhara

Professor and Dean (Research), Ashoka University and Professor, Indian Institute of Science Education and Research, Pune (Currently, on Lien at Ashoka University)
Dean of Research and Professor of Biology, Ashoka University

Prof. Rakesh Bhatnagar

Vice-Chancellor
Banaras Hindu University

Prof. Bhushan Patwardhan

UGC Vice chairman
Interdisciplinary School of Health Sciences
University of Pune, Pune

Dr. Jay Shankar Das

Director, Research, Projects & Innovation (National & International) SOA Deemed University, Bhubaneswar

Dr. Sanjeev Kumar

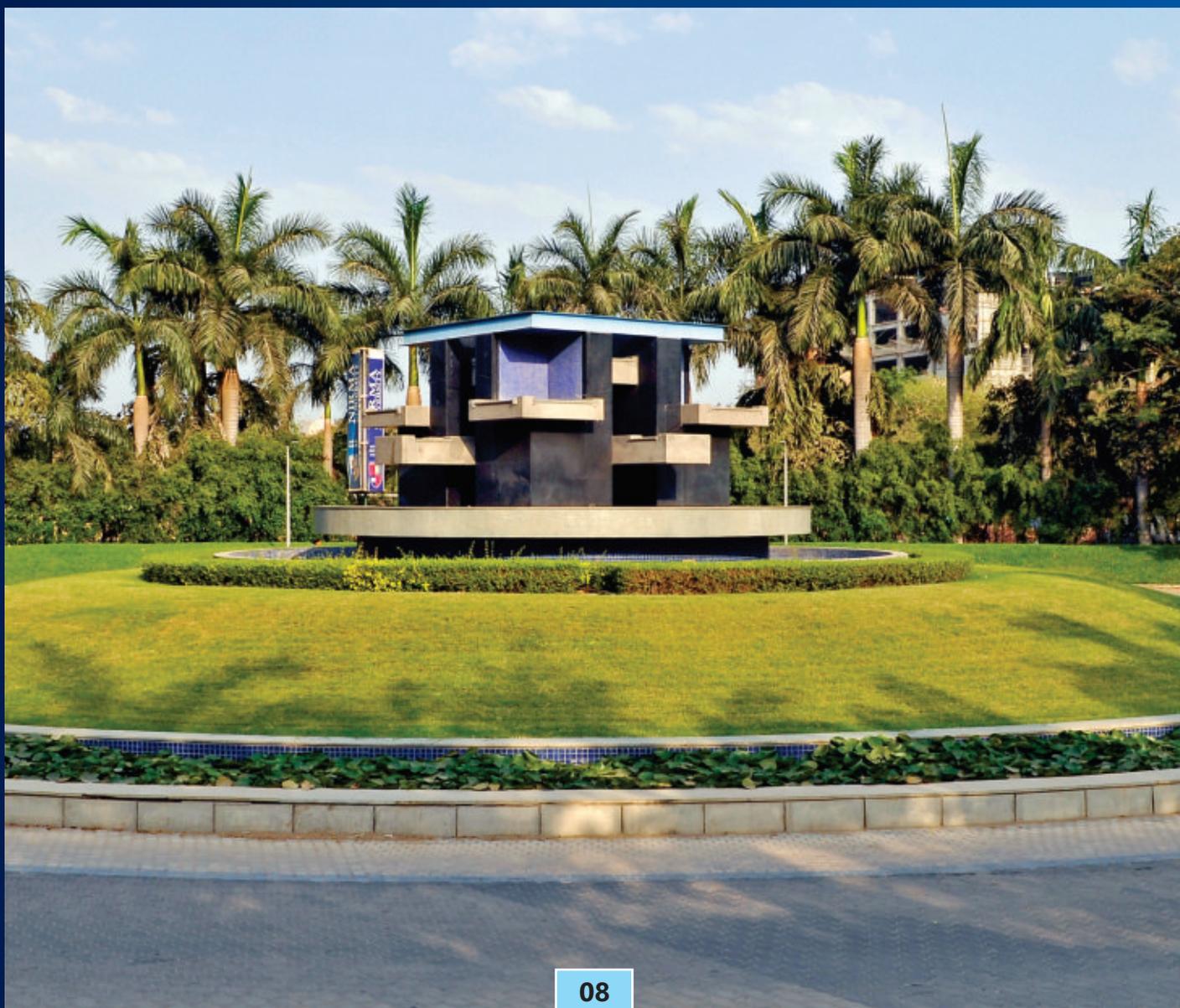
President, Zydus Cadila, Ahmedabad

Dr. Narottam Sahoo

Advisor and Member Secretary
Gujarat Council On Science and Technology (GUJCOST), Gandhinagar

Dr. Bhaswat Chakraborty

Independent Consultant & Ex. Professor
Emeritus NIP





From the Director's Desk

Biology has scaled great heights and become multidisciplinary in nature. With the advent of Genomics and Proteomics and the emergence of systems biology have revolutionized our understanding of the biological phenomena at molecular level. Personalized medicine is being realized as part of our life style in managing human health. The technologies developed during the last two decades not only help us give new dimension to scientific innovations, but also reduce the cost of molecular diagnosis for many diseases.

The Institute of Science at Nirma University introduces the advancements in Modern Biology to the young students, motivates them to take up the challenge and help them to make significant contributions to the knowledge and to develop novel technologies required for addressing the imposing problems of good health, food demand, and clean environment. Degree programmes of Master of Science in Biochemistry, Biotechnology and Microbiology are designed to provide students with a good understanding of the concepts, ability to identify, analyze and address scientific problems. Our multidisciplinary approach of teaching is innovative and emphasizes hands on training of the basic principles and techniques that are critical to understand biological phenomena. The syllabi of M. Sc. programmes have been developed to cater to the needs of academic research and industry.

The students are guided by structured lectures, hands-on laboratory practical training, self-directed and computer-assisted learning, review of literature, oral presentations and expert lectures. The expectation of the course and subject teams is that students will work diligently and effectively towards acquiring the required standard of knowledge, comprehension and technical skills that will make them productive and thus help them achieve their goals. Research training plays an important role at the post graduate level. Therefore, greater emphasis has been given to dissertation project that lasts over a period of two semesters. Active involvement of research scholars in dissertation project and continuous efforts of the faculty members, who are seasoned researchers, in improving the quality and scope of research, provide stimulating and vibrant environment for learning. Financial assistance from DBT, DST, AYUSH Govt. of India, GSBTM and GUJCOST, Govt. of Gujarat in addition to NERF, in form of research grants to the faculty members and infrastructure grant (FIST) to address challenging biological problems, has helped us to modernize our laboratories and improve our infrastructure with high-end instruments. This has, in turn, catapulted our efforts to impart quality training to our students with hands-on experience on these instruments. M. Sc. students graduated from our institute are trained well, and expected to have the knowledge and skills needed to assume roles in various areas of Biology as academic educators, scientists in both academia and industry, members of decision-making bodies, business and management teams in Government and Industries, Bio-entrepreneurs, public and private organizations that deal with social, ethical and legal issues in Biotechnology.

I thank you for choosing our academic programmes and wish you all the success in all your endeavours and for your future career.

Prof. Sarat K. Dalai

Director, Institute of Science & Dean, Faculty of Science

About the Institute

Institute of Science, Nirma University (ISNU) was established in 2004 with the aim of providing quality education to post-graduate students whose career objectives went beyond academics.

The institute offers the Master of Science in three branches of Biological Sciences; Biotechnology, Biochemistry and Microbiology as well as Doctoral programme in Biological Science. Students are provided broad training in biological science encompassing ethical, social, and legal aspects to help them explore wide career opportunities in addition to higher studies in the field of research.

The Institute of Science has dedicated Research Laboratories (for 50 Research Scholars) comprising a Central Instrumentation Facility, Plant Growth Area, Animal Cell Culture Facility, Insectarium, Animal House.

The Institute has Ph.D. faculty members drawn from various areas of Life Sciences. A balanced mix of academicians and professionals, with rich academic and research experience contributes to the Institute's academic excellence. All the faculty members are active researchers guiding Ph.D. students, executing national and state funded research projects of more than Rs.6 crores till date leading into high-quality publications in national and international journals.

This has significantly contributed to DSIR recognition as SIRO and FIST grant from the Department of Science & Technology, Govt. of India.

The M.Sc. students get excellent research training by in house dissertation project during the 4th semester, many of these lead to publication. Institutional Human Ethical Committee, Biosafety, and Animal Ethics Committee are in place for quality research. The quality and progress of the Institute is coordinated and ensured by Research Advisory Committee (RAC) and Internal Quality Assurance Cell (IQAC).







Infrastructure

The Campus

The institute is located on Nirma University campus which is on the Sarkhej-Gandhinagar Highway. A 110-acre sprawling campus in surroundings provides refreshing environment, stimulating intellectual alertness and creativity that is comparable to the top international institutions. The buildings have lecture theatres and class rooms equipped with multi-media and audio-visual aids, spacious seminar halls and auditoriums with varied capacities and hi-tech laboratories with latest equipments. The entire campus is Wi-Fi enabled. The campus provides an ambience that motivates the students to learn and grow.

Classrooms

The Institute has spacious classrooms, well-equipped with modern furniture and audio-visual equipment to facilitate effective learning. The classrooms are designed to promote maximum interaction between the faculty and the students. Each classroom has internet connectivity through wireless local area network.

Research Laboratories

The Institute also houses dedicated research laboratories for research scholars, a central instrumentation facility, plant growth area, animal cell culture facility, insectarium and animal house. There is also a user-friendly institutional library with computers and internet facilities. The laboratories are equipped with modern instruments including Flow cytometer, Fluorescence Microscope, Fermenter, Thermal Cycler, Gradient PCR, Real Time PCR, ELISA Reader, CO₂ Incubator, UV-visible Spectrophotometers, Nanodrop, Luminometer, Biosafety Cabinets, Gel Documentation System, Ultra Sonicator, BiologTM, HPLC, Fluorimeter, DGE (Denaturing Gradient Gel Electrophoresis), Orbital Shakers, Refrigerated Centrifuges, -20 & -80°C Freezers, Liquid Nitrogen Storage Facility, Lyophilizer, Cryostat microtome, Compound, Inverted, and Dissection Microscopes.

Computing Facilities

The central computer facilities consist of 27 servers and more than 1200 systems, which are interconnected by fibre optic cables and 12 mbps, dedicated optic fibre leased line and Wi-Fi hotspots which enable round the clock internet connectivity. The Institute has 10 systems in the library with Internet and Intranet facilities for the students.



Library Resource Centre

The Institute of Science is highly focused on academic, research and development activities. In view of the focused objectives, the library plays a vital role in the collection, development and dissemination of scientific and technical information to meet the present and future academic and research needs of varied users.

The library at Institute of Science houses more than 2543 volumes of books meticulously chose for reading and reference in addition to 104 CDs, 384 Bound Volumes, 360 M.Sc. Dissertations and 60 PhD Theses. The Institute library has subscription of 15 journals comprising print journals (6) and online journals (9) including Science Direct (8), Nature Weekly from Nature Publishing Group (1).

The Library and Resource Centre is fully automated with user-friendly library software KOHA that facilitates automated circulation of the books and location and availability information of the books stocked in the library. Online Public Access Catalogue (OPAC) is also available on the internet for inquiring the status of the resources. Bar-coding system is in use to computerize the bibliographic details of the resources.

The Library Resource Centre offers the following services:

- References
- Circulation
- Computerized Information Search
- Current Awareness Services
 - New Arrival List of Books
 - New Arrival List of Periodicals
- Content and Summary of selective newly arrived books
- Newspaper Clippings

- Web content Alerts through RSS feeds of Subscribed Journals on Website
- Selective Dissemination of Information (SDI)
- Reprography
- Inter-Library Loan (ILL)
- User Education Programmes
- Information Literacy
- Library Orientation

For detailed information please visit <https://pharmscilibrary.nirmauni.ac.in/>

Bioinformatics Lab Facility

Bioinformatics lab is developed recently with dedicated databases/software/ pipeline/solution in the areas of Genomics, Proteomics, Transcriptomics, Metabolomics, Structural Biology, System Biology, DNA Computing, Biostatistics, Computational Biology and Big Data Analysis. The institute was also funded and recognized as bioinformatics nodal centre from Gujarat State Biotechnology Mission (GSBTM) to promote and develop the skill set personals in the field of bioinformatics.

Centre for Advanced Instrumentation Facility

To cater the need of researchers in different areas, the Central for Advance Instrument (CAI) Facility was established at the Nirma University in the year 2020. The sophisticated analytical instruments which are operated and maintained by a dedicated and qualified group of technicians. This facility is open to all the researchers from universities, academic institutes and industries in Gujarat.

Amenities

Hostels

The University has separate hostel for boys and girls. Both the hostels are located on the campus. The hostel rooms are spacious and well-furnished. The hostels have sports and other recreational facilities, such as cable TV, common room for interaction, etc. All the hostel rooms have intranet and internet connectivity round the clock. The hostel mess is outsourced to a professional caterer. Only vegetarian food is served in the mess. The hostel residents are expected to adhere to the hostel rules and regulations.

Canteen

Canteens are located within the university campus and within close proximity of the Institute, which provides hygienic and wholesome food, snacks and beverages, etc.

Bank

A branch of the Kalupur Commercial Co-operative Bank Ltd., a scheduled bank with ATM facility is located on the campus.

Medical Facility

There is a non-resident doctor who visits the campus regularly on week days. University also has its own Ambulance available in the campus.

Playgrounds

The Institute has a volleyball court, a lawn tennis court, a basketball court, a football and cricket ground, a table-tennis room and a well-equipped modern gymnasium.

Transport Facility

The Institute provides transport to the students and staff living in different areas of the city. For this the university has its own buses, which offer services for both pick-up and drop-off.



Academic Programmes

- **Masters Programmes**
- **Doctor of Philosophy (Ph.D.)**

Masters degree

The Institute offers Master's Degree Programme in the following disciplines:

- Biochemistry**
- Biotechnology**
- Microbiology**

The aim of the programmes is to mould future biochemists, biotechnologists and microbiologists, who could contribute to the field of biological sciences through their innovative, scientific and leadership skills.



Curriculum

The Curriculum has been designed to provide a balance among the theoretical as well as practical aspects required for a thorough understanding covering the basic as well as recent advances in the field of biological science.

The members of the academic bodies involved in the curriculum designing and updating is a mixed consortium of academic peers with vast experience, alumni and faculty members. Modifications and upgradation of the curriculum are constantly being undertaken. Suggestions are also invited from peers from scientific from academics, research and industry. The curriculum consists of compulsory (core), elective, enrichment, supplementary courses. The unique feature of the curriculum is research projects.

The reforms pertaining to the curriculum has been brought upon looking into the guidelines of UGC and the recent development at the international scenario. Institute has also made special provision of offering remedial teaching wherever necessary.

The Institute has also adopted the Outcome Based Curriculum to enhance its Teaching and Learning and Continuous Assessment throughout Semesters.

Curriculum

	M. SC. BIOCHEMISTRY	M. SC. BIOTECHNOLOGY	M. SC. MICROBIOLOGY
First Year	Semester I <ul style="list-style-type: none"> Cell Biology Molecular Biology Metabolism Basic Immunology Human Physiology Laboratory I Seminar I 	Semester I <ul style="list-style-type: none"> Cell Biology Molecular Biology Metabolism Basic Immunology General and Applied Microbiology Laboratory I Seminar I 	Semester I <ul style="list-style-type: none"> Cell Biology Molecular Biology Metabolism Basic Immunology General and Applied Microbiology Laboratory I Seminar I
	Semester II <ul style="list-style-type: none"> Neurobiochemistry Bioanalytical Techniques Genetic Engineering Reproductive Physiology Elective I Seminar II Laboratory II 	Semester II <ul style="list-style-type: none"> Industrial Microbiology & Fermentation Technology Bioanalytical Techniques Genetic Engineering Microbial Genetics Elective I Seminar II Laboratory II 	Semester II <ul style="list-style-type: none"> Industrial Microbiology & Fermentation Technology Bioanalytical Techniques Genetic Engineering Microbial Genetics Elective I Seminar II Laboratory II
Second Year	Semester III <ul style="list-style-type: none"> Biochemical Toxicology Cancer Biology Endocrinology Animal Biotechnology Elective II Laboratory III Dissertation Tutorials Research Methods Summer Internship 	Semester III <ul style="list-style-type: none"> Molecular Microbial Physiology Animal Biotechnology Cancer Biology Genomics and Proteomics Elective II Laboratory III Dissertation Tutorials Research Methods Summer Internship 	Semester III <ul style="list-style-type: none"> Molecular Microbial Physiology Medical Microbiology & Virology Agriculture & Environmental Microbiology Microbial Diversity & Systematics Elective II Laboratory III Dissertation Tutorials Research Methods Summer Internship
	Semester IV <ul style="list-style-type: none"> Dissertation Comprehensive Viva voce 	Semester IV <ul style="list-style-type: none"> Dissertation Comprehensive Viva voce 	Semester IV <ul style="list-style-type: none"> Dissertation Comprehensive Viva voce

During summer, supplementary learning activities and / or practical training are planned and students have to compulsorily take up summer internship. Dissertation projects are also undertaken over the last two semesters when students undergo rigorous research training under the guidance of the faculty members and are exposed to modern high-end instruments.

Elective Courses

- Advanced Immunology
- Cancer Biology
- Genomics and Proteomics
- Human Genetics
- Microbial Diversity and Systemics
- Microbial Ecology
- Microbial Genetics
- Reproductive Physiology
- Structural Biology
- Vaccinology
- Agriculture & Environmental Microbiology

Supplementary Courses

- Basics of Biological Sciences
- Professional English
- Social Extension Activities
- CV writing and Interview Preparation
- Dissertation tutorial

Pedagogy

The Institute makes use of an appropriate mix of pedagogical tools to train the students to handle professional responsibilities. These include lectures by an appropriate mix of in-house and visiting faculty, expert lectures, discussions, seminars, project assignments and visit to industries. Continuous evaluation and counselling are important parts of the academic programme.

The Approach to Learning

Rigorous coaching and continuous evaluation through:

- Outcome Based Education through Outcome Based- Teaching and Learning, Curriculum and Assessment
- Credit based Semester System with weightage of different components of study
- Learning through Classroom Teaching, Practical Work, Industry Visits, Project Work and Dissertation Work
- Academic Rigor and Innovative Pedagogical Tools
- Faculty Guidance and Advisory System with faculty as counsellors to students
- Continuous Enhancement of Communication Skills
- Continuous up-gradation of state-of-the-art knowledge and skills
- Active participation of students in creative co-curricular activities

Course and Assessment

Nirma University has provided for a credit-based semester system. It is devised to motivate students for systematic and continuous study. Term assignments, laboratory and project work are given great importance and are continuously assessed. In addition to continuous evaluation, Semester End Examinations are conducted for theory subjects.



Admission Procedure

Number of Seats:

- **Masters in Biochemistry** = 25
- **Masters in Biotechnology** = 40
- **Masters in Microbiology** = 25

Eligibility and Admission Criteria

A student seeking admission to any of the above Programmes must fulfil the following criteria:

The candidate should have Bachelor's degree under 10+2+3/4/5 pattern of education in Chemistry, Biochemistry, Botany, Zoology, Microbiology, Life Sciences, Environmental Sciences, Bio-technology, Agricultural, Veterinary, Fishery & Dairy Sciences, Pharmacy, Medicine (MBBS), BDS, Bioinformatics, Genetics, Medical Laboratory Technology Sciences, BHMS, BAMS, B. Tech./B.E. Biotechnology, Physiotherapy or Bio-medical Engineering with at least 50% marks as aggregate of all the semester / years.

Candidates who have appeared for the final semester of qualifying examination can also apply. In such case, the candidates are required to submit the results as soon as they are available either by fax or by email (scanned image).

If the applicant has passed the qualifying examination from a University other than Nirma University, he/she will be required to obtain an Eligibility Certificate from Nirma University. The arrangement for obtaining the same will be made on the spot on payment of Rs.1000/- at the time of admission.

Application

The Application Form and Prospectus can be downloaded from our website <https://science.nirmauni.ac.in/>. The duly filled form is to be sent along with a demand draft of Rs. 1250/- (non-refundable) in favour of "INSTITUTE OF SCIENCE, NIRMA UNIVERSITY" payable at Ahmedabad. The applicant should write his/her complete name on the backside of the Demand Draft.

Selection Procedure

Generally, admission is granted purely based on merits obtained in the common Entrance Test conducted by Nirma University. But this year (2020-2021) due to Covid-19 pandemic situation, entrance exam will not be conducted.

Upon receiving the marksheets of applicants, the merit list will be prepared based on the B.Sc. pre-final results of the applicants without ATKT/backlog. The candidates will be given provisional admission at the time of counselling, and the same will be confirmed if they secure a minimum aggregate of 50% marks after the declaration of B.Sc. final results.



Fee Structure

The Tuition Fees for:

M. Sc. Biochemistry	-	Rs. 1,68,500/- per annum
M. Sc. Microbiology	-	Rs. 1,68,500/- per annum
M. Sc. Biotechnology	-	Rs. 1,68,500/- per annum

Other Charges/Deposits Applicable for all programmes

Registration PG	-	Rs. 1000/- (One time)
Refundable Security	-	Rs. 10000/-
University Examination Fees (Semester End Exam, Mid Semester Exam, Semester Grade Report)	-	Rs. 11000/- per annum

Hostel (Optional)#

Hostel Fees (Non-AC Dormitory)	-	Rs. 65,000/- per academic year
Hostel Electricity Advance(Non A/c)	-	Rs.7000/- per academic year
Laundry Charges	-	Rs. 4000/- per annum
Mess Charges	-	Rs. 45,000/- for 10 months

Subject to revision

Alumni Association (ISNUAA) Life Membership Fees (one time) Rs. 1,000/-



Cancellation of Admission and Fees Refund:

The following guidelines are followed in cases of cancellation of admission and refund of fees paid as per UGC notification on "Remittance and Refund of Fees and other Student Centric Issues:

No	Percentage of Refund of Aggregate Fees	*Point of time when notice of withdrawal of admission is served to HOI
1	100%#	15 days or more before the formally-notified last date of admission
2	90%	Less than 15 days before the formally-notified last date of admission
3	80%	15 days or less after formally-notified last date of admission
4	50%	30 days or less, but more than 15 days after formally-notified last date of admission
5	00%	More than 30 days after formally-notified last date of admission

(*Inclusive of course fees and non-tuition fees but exclusive of caution money and security deposit)

#5% of the fees, subject to a maximum of Rs. 5000/- as processing charges from the refundable amount.

International Students

a) CHILDREN OF INDIAN WORKERS IN GULF COUNTRIES AND SOUTH EAST ASIA (CIWGC-SEA)

The candidates whose parents are working at Gulf countries or South East Asia are only eligible under this category.

b) PERSONS OF INDIAN ORIGIN (PIO)

The persons who are citizens of other countries (except Pakistan and Bangladesh) who at any time held an Indian Passport, or who or either of his parents or any of his grandparents was a citizen of India by virtue of the provisions of the Constitution of India or Sec 2 (b) of Citizenship Act, 1955 (Act No. 57 of 1955) are only eligible under this category.

c) FOREIGN NATIONALS (FN)

The citizens of all countries other than India, who are not of Indian origin as defined under PIO are eligible under this category.

15% supernumerary seats are available for admission to PIO (Persons of Indian Origin) & Foreign students. Out of this about one-third i.e. 5% is reserved for Children of Indian Workers in Gulf Countries and South East Asia (CIWGCSEA).

A candidate seeking admission to these seats should also meet the eligibility criteria. All admissions will be on merit basis.

The fee for PIO & Foreign students is US\$ 5000 or equivalent Indian Rupees per year. The fee for Children of Indian Workers in Gulf countries and South East Asia (CIWGCSEA) and South Asian Association for Regional Co-operation (SAARC) is US\$ 5500 or equivalent Indian Rupees per year.

A one-time processing fee of Rs. 30000/- (non- refundable) is to be paid by PIO / Foreign students, Children of Indian workers in Gulf Countries and South East Asia (CIWGCSEA) and South Asian Association for Regional Co-operation (SAARC).

For further details, please contact the Assistant Registrar (Academic), Nirma University through email: asst-registrar@nirmauni.ac.in.





Doctor of Philosophy (Ph.D.)

In its quest to promote excellence in the field of Science, the Institute offers full time and external Doctoral programme in Science with an emphasis to unravel the problems related to health, agriculture and environment and to train highly skilled manpower for research and teaching. The programme is offered in the field of Biochemistry, Biotechnology and Microbiology. The current thrust areas for full time Ph. D. programme are Immunological Memory, Mucosal Immunology, Cancer immunology, membrane trafficking, Animal Toxicological Studies, Anticancer Therapeutics, Biodegradation, Bioremediation, Microbial Diversity, Multi-Drug Reversal Studies, Plant Growth Promoting Rhizobacteria (PGPR), Catabolic repression of MPS Phenotype, Plant Secondary Metabolites, Probiotics and Urinogenital infections and Microbicides.

Eligibility and Admission Criteria:

The candidates holding Masters Degree or equivalent with 55% or equivalent grade from a recognized university will be considered eligible for registration for the Degree of Doctor of Philosophy in the relevant programme.

If the applicant has passed the qualifying examination from a University other than Nirma University, he/she will be required to obtain a provisional eligibility certificate from Nirma University on payment of Rs. 500/- and the students who are granted admission will have to submit the original of migration certificate within six months from the date of admission.



Admission Procedure:

The University will invite applications from the candidates through advertisement in the press or on the website. The Candidates, who intend to register for Ph.D., have to apply in the prescribed proforma. Selection is done through entrance test: written test will be conducted for the eligible candidates and is followed by a presentation by the candidates and a personal interview by a committee. The component weightage of the selection will be as under, while making the selection:

- **Weightage for Entrance Test :** 50%
- **Weightage for Personal Interview:** 50%

Sub component weightage in Personal Interview shall be as under:

- **Literature Survey:** 35%
- **Innovation in Research:** 20%
- **Discussion:** 10%

The candidate who does not meet with 50% of total assessment score will not be considered for admission. The candidate who obtains 50% and above will be considered on merit based on number of vacancies available.

However the candidates who have passed the National Level Test like UGC/CSIR(JRF) examination / NET / SLET / GATE/teacher fellowship holder, M.Phil etc or its equivalent shall be exempted from appearing in the written test and they will be considered deemed to have earned 35% score in the written test.

Coursework:

The programme includes course-work of 16 credits i.e. 15 hours per credit. There are five courses including the research methodology and research & publication ethics of 4 credit each. Full- Time and External students are asked to complete their course work within one year and one and a half year from the date of registration, respectively.

The regulations for Ph.D programme are available on the website under section "Academic Regulations for Ph. D (Full-Time & External) students".

Research in the Institute

The Institute is actively involved in research work since the start of its research programme in 2007. Currently, 10 full-time PhD students presently working at the Institute, in addition to that final semester M.Sc. students also contribute to research during their dissertation project work.

The faculty of the Institute have University Aided Research Projects and also Externally Funded-Projects. During last year 25 papers in international journals and 5 book chapters have been published. The students have published their research work in journals of repute like Journal of Immunology, Journal of Bioscience and Bioengineering, International Journal of Human Genetics, Carbohydrate Polymers, Scientific Reports, BMC Complementary and Alternative Medicine. Ecotoxicology and Environmental Safety, Behavioral Brain Research and Small GTPases.

Research Areas:

- T cell memory vis-a-vie vaccine development
- Molecular Physiology of PGPR
- Genetics of birth defects, cancer risk assessment
- Role and modulation of gut flora in metabolic disorder and Liver inflammation
- Targeting microbial metabolites as Cancer Therapeutics
- Bioactive natural products, Cell-sound interactions
- Bioremediation of Hydrocarbons, Microbial Fuel Cell
- Neurodegenerative disease and Metabolic disorders
- Cancer prognostic biomarkers, 3D cancer cell models
- Cancer Immunology and Immunotherapy
- Small GTPases in Membrane Trafficking





Research Projects

In addition to various distinct features, the Institute of Science also has to its credit various externally funded research projects.

Completed Research Projects

Until now the institute has completed extramural funded projects worth rupees 2 crore and 20 lakhs.

1. "Diversity and Plant Promotion Abilities of Actinomycetes in the Wheat Rhizosphere in Gujarat Region", funded by GSBTM, GoG.
2. "Biotechnological Applications for Transforming the most abundant bacteria from Industrial Waste Waters of South Gujarat for Bioremediation", funded by DBT, Gol. (in collaboration with Navsari Agricultural University)
3. "Identification of Compounds from Ginger, Cinnamon and Gooseberry Extracts having the Potential to prevent Protein Aggregation and Characterization of their Mechanism of Action", funded by DBT, Gol.
4. "Exploring the Colonization of Non-Rhizobia and Understanding the fate of Rhizobacteria during Rhizobial Infection in Mung Bean", funded by DBT, Gol.
5. "Comparative Study of the Nature of Innate Immunity Generated in response to attenuated (yspz) vs. Infectious Sporozoite in Plasmodia Infection", funded by GUJCOST, GoG.
6. "Evaluation of Boric Acid induced Male Reproductive Toxicity and ascertaining Reversals Potential of Hydro-Alcoholic Extracts of Eclipta Alba", funded by GUJCOST, GoG.
7. "Identification of CD8+T Cell – Specific to Liver-Stage Antigens of Plasmodium berghei to understand Anti-Malarial Protective Immunity", funded by GSBTM, GoG.
8. "Biochemical Basis of Repression of MPS Phenotype in Rhizobia" funded by GSBTM, GoG.
9. "Idiopathic Mental Retardation and Dysmorphism: Karyotypic and UPD Analysis" funded by GSBTM, GoG.
10. "Generation of Thermostable Variants of a Mesophilic Amylase by Directed Evolution and their Characterization" funded by GSBTM, GoG.
11. "Investigation of the molecular basis of enhanced EPS production by *X. campestris* under the influence of audible sound", funded by GUJCOST, GoG.
12. "Down's syndrome in Gujarat: Molecular Probing In Origin" funded by Gujarat GUJCOST, GoG.
13. "Validation of the in vitro and in vivo efficacy of 'Herboheal' against wound-infective bacteria, with respect to its possible quorum-modulatory potential, and elucidation of the underlining molecular mechanism" funded by SRISTI-BIRAC.
14. "Molecular Basis of Succinate Mediated (catabolite) Repression of Mineral Phosphate Solubilization in Nitrogen fixing *Klebsiella pneumonia*" funded by DST, Gol
15. "Determination of specific absorption coefficient macro algal species of indian coastal water-A step towards developing biomarkers and pigments alogorithm" funded by SAC-ISRO, Ahmedabad.
16. "Understanding the Nature of Liver-Stage Specific CD8+ T Cells Generated following Infectious Sporozoite Challenge that ensue Long-lived Protection against Plasmodia Infection", funded by DBT, Gol.
17. "Demographic survey of major cities of Gujarat for creation of Diabetic map", funded by GUJCOST, GoG.
18. "Infectious nature of Plasmodia modulating the innate response of host in liver stage infection deciding the fate of adaptive immunity", funded by DST, Gol.
19. "Development of Chimeric IL-15 to improve its bioavailability and efficacy", funded by DBT, Gol.
20. "Reconstitution of novel TK/NOG mice with 'Humanized Liver' to study liver stage infection of *Plasmodium falciparum*", funded by Department of Science & Technology (DST), SERB.
21. "Regulation of MHC II expression: Immunity to Malaria", funded by Department of Science & Technology (DST), SERB.

22. "Role of Cell Adhesion Molecules (CAMs) for insulin secretion during Diabetic and Hypoglycemic condition", funded by Department of Science & Technology (DST), SERB.
23. "Investigation of the regulatory role of miR-712 in inflammation induced skeletal muscle insulin resistance", funded by Department of Biotechnology (DBT).
24. "Elucidating the role of short chain fatty acids (SCFAs) and its receptor in high sugar diet induced type II diabetes", funded by GSBTM.
25. "Investigation on QS modulatory potential of Herboheal", funded by SRISTI-DBT-BIRAC Appreciation award. "Evaluation of Green Clean for potentiality of oil/hydrocarbon degradation", funded by Shukla Ashar Impex Pvt. Ltd. Rajkot.
26. "Development of neoadjuvant from medicinally important bamboo plants for radiotherapy in cancer", funded by AYUSH.

Ongoing Research Projects

Presently there are nine externally funded major research projects running in the Institute of Science worth Rupees 3 crores and 40 lakhs.

1. Interdisciplinary collaborative major research project with Institute of Technology, NU on "Microbial Fuel Cell: An Approach for Wastewater Treatment with Generation of Green Electricity" funded by Nirma University.
2. "Investigating the role of Crc in regulation of PQQ GDH involved in MPS phenotype of Acinetobacter sp. and its repression". funded by DST-SERB, GOI.
3. "Engineered Bioremediation Approaches for Onsite Treatment of Soil Contaminated with Crude Oil" funded by DBT, Govt. of India, New Delhi.
4. Development of integrated wastewater treatment systems using alternative innovative approaches of Microbial Fuel Cells, Magnetic Nanoparticles and Vermicomposting with Water Hyacinth for secondary sludge management" funded by GSBTM, Govt. of Gujarat, Gandhinagar.





5. Understanding the spatiotemporal dynamics and ultrastructure details of ECM degrading device "amoebic invadosomes" and their crosstalk with Rab GTPases and cell surface proteases trafficking machinery in *E. histolytica*. DST-SERB, GOI
6. Understanding the functional role of vacuolar ATPases in trogocytosis and tissue invasion mediated by *Entamoeba histolytica*. DST_SERB, GOI
7. Bone metastatic signature in Indian breast cancer patients: A transcriptome based study. DST_WOS-A_GOI
8. "Studying the Immune Adjuvant Potential of Chimeric IL-15" funded by GSBTM, Govt. of Gujarat, Gandhinagar.
9. "Understanding the Role of B cells in Cross Presentation of Plasmodium Liver-stage Antigen(s) to CD8+ T cells" funded by DBT GOI New Delhi.
1. "Formulation Development and Evaluation of Nano particulate systems for targeted delivery of anticancer agents" funded by NIRMA-NERF.
2. "Development of neoadjuvant from medicinally important bamboo plants for radiotherapy in cancer", funded by AYUSH.
3. "Epidemiology of anaemia in pre-school tribal children of eastern Gujarat with reference to etiology, pathophysiology and nutritional impact", funded by ICMR.
4. Microbial Fuel Cell: An Approach for Wastewater Treatment with Generation of Green Electricity" funded by Nirma University. The project is in collaboration with Institute of Technology, Nirma University.
5. Engineered Bioremediation Approaches for Onsite Treatment of Soil Contaminated with Crude Oil" funded by DBT, Govt. of India, New Delhi. The collaborating institutes/organisations are CSIR-NEERI, Nagpur; Assam University, Silchar, Assam; CSIR-NIO, Goa; CSIR-IITR, Lucknow; IASST, Assam; IIT-Bombay; IIT-Delhi; Institute of Science, NU, Ahmedabad; TERI, New Delhi and ONGC.

Interdisciplinary Research Initiative

Discipline-specific research is conventional and core approach in the field of basic science, however; when researchers adopt interdisciplinary approach and work as a team to address a problem, this innovative and collaborative work translates into applied outcomes of societal significance viz., better health management, energy requirement, reduction in pollution, environment friendly agriculture practices etc. Faculty members of Institute of Science are involved in interdisciplinary projects with Institute of Pharmacy, Institute of Technology in key areas.

Collaborative projects

Currently, there are seven collaborative research projects are running in association with IPNU and ITNU worth Rupees 1 crore and 5 lakhs.

6. Development of integrated wastewater treatment systems using alternative innovative approaches of Microbial Fuel Cells, Magnetic Nanoparticles and Vermicomposting with Water Hyacinth for secondary sludge management" funded by GSBTM, Govt. of Gujarat, Gandhinagar. The collaborating institutes are Institute of Science, NU, Ahmedabad; Electrical Engineering Dept. and Electronics and Communication Dept., Institute of Technology, NU; HVHP Institute of Post Graduate Studies and Research, Kadi University; and Department of Biosciences, VNSGU, Surat
7. Identification of small molecule inhibitors of transcriptional activator protein and Nitric Oxide Reductase Atomwise Inc., USA



Linkages and Collaborations

The University, recognizing research as the main drive of success in an academic setting, established a separate Faculty of Doctoral Studies and Research to initiate research programmes independently or in collaboration with national laboratories that have potential in terms of infrastructure and expertise. As a beginning such collaboration exists with institutions like Physical Research Laboratory, Space Application Centre, B.V. Patel Pharmaceutical Education & Research Development Centre, Ahmedabad, Forensic Science Laboratory, Gandhinagar, Cadila Pharmaceuticals Ltd, Ahmedabad and INTAS Biopharmaceuticals Pvt. Ltd, Ahmedabad, Institute of Plasma Research, Bhat, Gandhinagar, CSIR-NEERI, Nagpur; Assam University, Silchar, Assam; CSIR-NIO, Goa; CSIR-IITR, Lucknow; IASST, Assam; IIT-Bombay; IIT-Delhi; TERI, New Delhi, ONGC, Kadi University and SGPGI Lucknow.

Institute of Science, in addition to postgraduate courses, is also involved in various research areas. All the faculty members conduct Projects leading to Ph.D., granted by national and state funding agencies. The research is carried out using in house facilities as well as by linkage, collaboration with various reputed national as well as international universities, research institutes, industries agencies.

National

Gujarat State Biotechnology Mission, GenXplore molecular diagnostic laboratory, M.S. University of Baroda, Ahmedabad University, Zydus Research Center, Charusat University, Central University of Gujarat, Indian Space Research Organization, ISRO Ahmedabad, Central Salt & Marine Chemicals Research Institute, Bhavnagar, Centre for DNA Fingerprinting and Diagnostics, Hyderabad; AGILE lab, New Delhi; Indian Institute of Advanced Research, Gandhinagar; National Institute for Research in Environmental Health, Bhopal; Dr. Reddy's Institute of Life Sciences, University of Hyderabad, Hyderabad; ISTR-Interdisciplinary Science and Technology Research Academy, University of Pune, Pune; National Institute of Immunology, New Delhi; Jawaharlal Nehru University, New Delhi; International Centre for Genetic Engineering and Biotechnology, New Delhi; Indian Institute of Science Education and Research, Pune and Institute of Life Sciences, Bhubaneswar

International

Theragen labs, Korea; National Institute of Health, USA; Johns Hopkins School of Public Health, USA, University of Massachusetts, USA; University of California, Berkley, USA; University of Texas Southwestern Medical Center, USA; Emory Vaccine, USA



 GATE NO.3
NIM

 PHARMACY
ELECTRIC ROOM

 SPORTS GROUND
CANTEEN
BLOCK-B
BLOCK-D



Beyond Classroom

Expert Lectures

The institute is also arranging expert lectures of various subjects to enhance knowledge of the students. The institute is also arranging eminent scientists/ researchers to sensitize students to pursue their career in research. These lecture series are held on various emerging research topics or latest technology

Seminar

The students are motivated to present seminars on latest developments in the field of science. Seminars enable students to develop many skills through internet, e-journals, books and journals on a specific topic. This helps to enhance their library reading, scientific writing and presentation skills.

Industrial Training

Training is the integral part of the study to acquaint them with real world problems. The students have to compulsorily go for internship to any industry during their summer break under supervision and guidance of respective industry personnel. The faculty carries out monitoring and evaluation regularly. The institute also gives importance to projects, industrial visits and training during vacations to support their curricular work.

Important Events hosted

With a view to provide an opportunity to its faculty and students to interact with eminent scientists from India and abroad, the Institute has been organizing National Conference annually. During last three years Institute of science has organized various events.

- Faculty development programmes on Genomics and Proteomics, Systems biology and Advances in Microscopy in February 2015
- National Conference on Malaria Parasite Biology: Drug Designing & Vaccine Development in September 2016
- CCE workshop On "Molecular Biology Techniques: Cloning to Expression" in January, 2017.
- Orientation Programme for the new batch (2017-2019) in July, 2017.
- Foundation day Celebration and Public Lecture in September, 2017.
- National Conference, "IMMUNOCON", on Immune Mechanisms of Infectious Diseases and Beyond in December, 2017.
- CCE workshop on "Wastewater- Characterization to Treatment" in March, 2018.
- CCE Seminar series on CRISPR Cas9 in Genome Editing, March 2019
- Continuing Medical Education (CME) cum workshop on Flow Cytometry in Research and Health Care, under CCE, March 2020





Industry Institute Interaction Cell

Industry Institute Interaction Cell (III Cell) is established to provide close links with industries, contract research organization and other state and national level R & D organizations. The purpose of the cell is to find out the gap between the need of industry and the end products of the institute. The cell is the bridge between the industry and the institute. One of the objectives is also to offer programmes fulfilling the needs of continuing education of the industrial personnel. Industry institute interaction cell provides close links with industries. Placement of students for industry training/projects during summer has been benefiting students to a great extent.

We believe in developing programmes, which provide solution to real world problems with a strong desire of forging innovative alliances with industry to achieve synergy. III Cell imparts benefits to all components like students, faculty, institute and industry by interacting closely with the industries. Students are exposed to the real world and learn the needs of the future career. The III Cell is governed by the advisory committee; headed by the Director as a chairman, Heads of departments as members and Placement-Training Officer as a member secretary. III Cell facilitates students' visits to industries, industrial training, project placements & campus interview.

Placement Cell

Campus interviews are organized by inviting various companies for the placement of the student for jobs. It fulfils dual purpose, one for students securing their future careers, another for the industry securing the best fresh talent available in the region to train and mould them for their long time need of the employees. Various lecture series and workshops are organized by the placement cell for the students to prepare them for the campus interviews.

The Institute of Science has a Placement Committee comprising the Director of the Institute as Chairman, the Placement Officer, The Institute level Placement Coordinator and Faculty and Student Representatives from each stream of Biotechnology, Biochemistry and Microbiology.

Till date students are placed in various reputed organizations like Zydus Research Centre, Sun Pharma, Intas Biopharma, Aakash Institute, Allen Institute, Nivea India, Ishaan Biosciences, Designmate, Amneal Pharma etc. have recruited our students in recent years. To ensure smooth transition from Academics to corporate world, the institute grooms students on Interview etiquette, Resume building, Communication skills, presentation skills etc.



Alumni Association (ISNUAA)

The first ten batches of postgraduate students have graduated from the Institute. All activities necessary to fully integrate the Alumni Association with the development efforts of the Institute are being actively planned. Regular contact with the alumni is maintained and efforts for their full participation in the activities of the Institute are being made. ISNUAA encourages interaction of alumni with the current students which is very useful for them.

PROBODHAN, an event for career guidance involves interaction of ISNU alumni members with the current M.Sc. students. The Ph.D. students at various levels of their research answer queries related to scope for the research and other career options, national competitive exams, rules, schemes for fellowships etc.

MILAN, an annual alumni meet involves get-together over lunch, cultural programme, revival of memories, experience sharing and guidance. The visit to alma-mater is cherished by all.

The Alumni of the Institute are well placed in companies as well as pursuing their career in research institutes like NIPER, Chandigarh; JNCASR, Bangalore; TIFR, Bangalore; CCMB, Hyderabad; IISER, Bhopal; Institute of Science, Hyderabad; Texas A and M University, USA; Griffith University, Australia; Laval University, Quebec, Canada, etc.

The Alumni are well connected thru' Alma Connect, LinkedIn group, and other social media specially developed for them.





Student's Activities

Orientation for Freshers

The Institute organizes a unique orientation programme of one to two weeks for the new entrants. Various lectures on time management, coping with stress, human relations, positive attitude, communication skills etc, are delivered by eminent speakers to the students. This programme enables the students and faculty to interact with each other, understand each other and it also provides smooth transition from undergraduate life to a new environment of post graduate studies.

Convocation

Nirma University organizes a grand convocation ceremony for awarding degrees and gold medals to the postgraduates and Ph. D. Students of the institute.

Co-curricular and Extra-curricular Activities

Co-curricular & extra-curricular activities play an important role in the all-round development of professional students. They indeed serve as an adjunct to the rigorous course work. The objectives of these activities are: -

1. To promote disciplined corporate, intellectual, civil and cultural life amongst students and the faculty of the institute
2. To foster activities to bring out creativity, promote the study and discussion talents of the students
3. To promote the study and discussion of subjects of national and international importance
4. To create awareness amongst the students about their professional identity and their obligations to the profession and society at large
5. To create a strong spirit of teamwork and cohesiveness by organizing various cultural, literary and professional activities along with the academic routine

Students have participated at various national, international and state level competitions and have also won awards.

Institute of Science organizes an Annual Cultural Festival RENAISSANCE under the auspices of Board for Student's Welfare, Nirma to provide a platform for the students to showcase their talents and be rooted with the culture. Various competitions are held under Theatre, Musical, Dance, Literary and Fine arts events which include Mime, Skit, Debate, Elocution, Collage, Spot Painting, Cartooning, Rangoli, Solo Dance, Group Dance, Folk Dance, Solo song, Duet Song, Group Song. The Fine Arts events cover Collage, Poster Making, Rangoli and on-the-spot painting. Renowned personalities in the fields are invited to judge the events. Winners are awarded with trophies and certificates.

Every year intra-institute and inter-institute sports events are organized for students, wherein they get the opportunity to participate in team games (Cricket, Volleyball, etc.) as well as athletic events (running and throwing events). Participants and winners are awarded certificates and trophies. March Past by the participants at the start of the university level sports festival is also organized. Students are also provided the opportunity to contribute volunteers during these events.

De-Novo magazine

"De Novo" is annual publication of ISNU. Editorial board consists of selected students, a faculty coordinator, and Director. The magazine gives platform to nurture creativity, literary acumen of students who may be budding journalists, writers, poets, and editors. Faculty and staff members also contribute articles of current significance, events of the institute, good reads, etc.

Institute of Science Student Association (INSSA)

Institute of Science, Nirma University formed a student association INSSA in October, 2015. The association consists of nominated student representatives includes both the post graduates and Ph. D. students and faculty members as mentors. INSSA serves as a bridge between the administration, faculty, staff and student. It aims to strengthen communication, common platform, enhance skill and knowledge and to promote a culture of academic excellence and to provide opportunity to expand their horizons, reach their full potential, discover their talents and change the world around them.

Since commencement INSSA has organized events like Scientific Retreat, Secret Santa, Donation Drive, Days celebrations like Twin's Day, Traditional Day, Mis-match Day, Signature Day, Women's Day etc.





Student's Activities

Life at Campus

The years that students spend at the campus are designed to be the most fulfilling years in their life and would serve the best lifelong memory of their life. Life at the campus, is vibrant and exciting, transforming students into all around individuals. Various students' activities like cultural festival, ras-garba, quizzes, elocution, debates, sports, annual day, class picnics etc. are regularly organized by the institute with adequate involvement of faculty members. Besides co-curricular, extra-curricular, social activities, days like Independence day, Republic day are celebrated on the campus. Festivals like Garba, Ganesh chaturthi, Diwali, Durga pooja, Holi, New year Day, Kite flying are celebrated with full spirit and joy by the students on the campus.

Ragging - Zero Tolerance

Ragging is strictly prohibited inside and outside the University campus. The Anti-Raging Committee constituted for this purpose by the Institute is empowered to take immediate action against any untoward action and also to counsel the fresher. Students seeking admission shall have to furnish an undertaking in this regard. To enhance familiarity and to acclimatize the fresher to the academic and social environment of the campus, the Institute organizes an orientation session in the first week of the new academic calendar.

Ragging: Definition

Any disorderly conduct whether by words spoken or written or by an act which has the effect of teasing, or handling with rudeness any other student, in rowdy or undisciplined activities, which causes or is likely to cause annoyance, hardship or psychological harm or to raise fear or apprehension thereof in a fresher or a junior student or asking the students to do any act or perform something which such student will not do in the ordinary course and which has the effect of causing or generating a sense of shame or embarrassment so as to adversely affect the physique or psyche of a fresher or a junior student.

The student will also be required to give an undertaking in the specified proforma provided with the students' handbook as an enclosure. It is to be filled up and signed by the candidate and his parent/guardian to the effect that he/she is aware of the University's approach towards ragging and the punishment to which he/she shall be liable, if found guilty of ragging.

All the students admitted under the institute will have to observe and abide by the discipline rules prescribed by the University / Institute and he / she will submit to the disciplinary jurisdiction of the Head of the Institution / Director General (NU) and other competent officers or authorities or bodies of the University as the case may be and in this respect he / she has to submit the declaration in the Performa at the time of admission.

Women's Development Cell

In pursuance of the directions issued by UGC and MHRD, Govt. of India the Nirma University has set up a Women Development Cell (WDC) and prescribed norms to sensitize the community with regard to gender related issues and create a gender friendly environment at the campus.

DISCIPLINE- The Keyword

The University has earned a name for quality education. This is due to the efforts and devotion of well-qualified faculty of the University. The academic calendar for each year is notified in the beginning of each semester, and is strictly adhered to. Students' attendance is compulsory and any shortfall is notified to the students and parents. It is expected from every student that he/she must conduct himself/herself with discipline, decency and dignity both inside and outside the campus.





Faculty Corner

Through a judicious recruitment policy and enlightened approach, NERF has ensured that the Institute is staffed by a well-qualified and competent faculty to shoulder the responsibilities of maintaining high standards of education in the Institute. In keeping with the aims outlined in the mission statement, the faculty members remain fully conscious of their dual role both as teachers to efficiently impart technical knowledge to the students as well as counsellors to guide them for their overall development.

Faculty Development Programmes

The teachers are encouraged to update their knowledge and skills through various training and learning modes. Constant efforts are being made by the management to achieve this aim. Some of the initiatives taken in this direction are listed below:

- In-service registration to pursue Ph. D. programmes
- Participation in reputed Conferences and Seminars
- Participation in Collaborative Research Projects
- Promotion of Consultancy
- Training in Industries and Specialized Laboratories.
- To Organize and Conduct National/ State Level Training Programmes for Professionals.



Faculty Profile

Dr. Sarat K. Dalai (Professor)

- Ph. D. in Immunology (Jawaharlal Nehru University, New Delhi)
- Experience: Post -Ph.D. Research:- 21 years, Teaching: 10 years.
- Area of Expertise: T cell Immunology
- Email: sarat.dalai@nirmauni.ac.in



Research Interest:

Our laboratory is working on the generation and maintenance of memory T cells. Major focus of our laboratory is directed toward understanding the nature of immune responses generated against Plasmodium liver-stage infection. Protective immunity against malaria parasite can be generated experimentally or by natural infection, but is short-lived. We have developed animal model(s) analogous to the natural infection encountered by people living in endemic area, and found that the protective immunity can be extended longer in immune-host receiving intermittent challenge of infectious sporozoite. We are pursuing the studies to understand how the infectious challenge brings in qualitative changes in memory T cells ensuring long-lived immunity. We are also developing novel immune-modulator to augment the generation of robust effector and memory T cell responses, and maintenance of memory. In parallel, we are also developing alternative vaccination strategies for non-live vaccines to promote the generation of long-lived antigen specific T cells. Our research is supported by DST & DBT, Govt. of India, and GSBTM & GUJCOST, Govt. of Gujarat

Publications :<https://scholar.google.co.in/citations?user=aqljaoAAAAJ&hl=en>

Dr. Shalini Rajkumar (Professor)

- Ph.D. in Microbiology, Indian Agricultural Research Institute, New Delhi
- Experience: Post Ph.D. Research – 16 years, Teaching – 17 years
- Area of expertise: Molecular Physiology of PGPR
- Email: shalini.rjk@nirmauni.ac.in



Research Interest: My lab is working towards understanding the integration of bacterial strains in the plant rhizosphere recognizing mechanisms of their interactions as a key to improving the level and reliability of plant growth stimulation by PGPR. The major focus of our lab is isolation and in-depth physiological and molecular studies of such crop-specific highly efficient PGPR strains from the soil and root nodules. P deficiency is a biophysical constraint to crop production and some N₂ fixing rhizospheric bacteria can solubilize phosphate by secretion of organic acids with most favored carbon source, glucose. Carbon catabolite repression describes the phenomenon whereby the presence of glucose represses catabolism of alternative carbon sources. The mechanism of reverse carbon catabolite repression however can repress MPS phenotype in many nitrogen fixers.

There is a great gap in the in vitro and in vivo performance of PGPR which may be directly attributed to various environmental factors that might affect their growth and proliferation in the plant rhizosphere. In our lab, attempts are made to address these gaps and limitations using modern techniques of high throughput sequencing (HTS) and approaches of creating gene-specific mutants. The long term goal of such studies is to replace or to at least reduce the erratic consumption of chemical fertilizers for improving the crop yield and the soil quality through environment-friendly approaches.

Publications: <https://scholar.google.com/citations?user=sjfPhO8AAAAJ>

Dr. Sonal R. Bakshi (Assistant Professor)

- Ph.D. in Life Science (Gujarat University, Ahmedabad),
- Experience: Post Ph.D. Research – 18 years, Teaching – 10.5 years
- Area of expertise: Cancer risk assessment by in vitro genotoxicity, Genetics of birth defects, leukemia cytogenetics
- Email: sonal.bakshi@nirmauni.ac.in



Research Interest: I

Idiopathic mental retardation and its genetic analysis in terms of chromosomal and molecular genetics is one of our research interests to sub-classify the human birth defects. We also study the mechanism of recurrent chromosomal translocations, parental and meiotic origin of constitutional aneuploidy. The radioprotective effect of herbal extract is studied using in vitro cytogenetic end points. The in vitro assessment of genotoxicity for cancer risk assessment involves study of cytogenetic endpoints like chromosomal aberrations, micronucleus, and comet assay following exposure to candidate compounds like plant extracts with anti-cancer activity, nano particles of metal oxides, and cell phone radiation.

Publications:

Publications:http://scholar.google.com/citations?hl=en&user=Eh1jFTgAAAAJ&sortby=pubdate&view_op=list_works&start=20



Dr. Sriram Seshadri (Assistant Professor)

- Ph.D. in Science (Reproductive Physiology) (University of Rajasthan, Jaipur)
- Experience: Post Ph.D. Research – 18 years, Teaching – 20 years
- Area of expertise: Liver Inflammation & Cancer, Understanding and manipulating Gut Microbiota, Metabolic Disorder, Colorectal Cancer
- Email: sriram.seshadri@nirmauni.ac.in



Research Interest:

My research interest includes understanding the mechanism of insulin resistance and role of gut microflora in diet induced diabetes and in liver and colon inflammation and cancer. Currently we are working on colon targeted delivery of microspheres and SCFA supplementation for the modulation of the intestinal microflora and insulin resistance. We have prepared colonic pH specific microspheres loaded with strain specific antibiotics and evaluating its effect on the pathophysiological, immunological conditions in diet induced type II diabetes. We are also trying to understand the role of SCFAs in the gut microflora modulation for the treatment of metabolic diseases, liver inflammation and gut-associated cancers.

Publications: <https://scholar.google.co.in/citations?user=1qpb1isAAAAJ&hl=en>

Dr. Vijay Kothari (Assistant Professor)

- Ph.D. in Science (Plant antimicrobials) (Nirma University, Ahmedabad)
- Experience: Post Ph.D. Research – 12 years, Teaching – 17 years
- Area of Expertise: Bioactive natural products; Traditional Medicine (TM); Antimicrobial Resistance (AMR); Microbial response to sonic stimulation
- Email: vijay.kothari@nirmauni.ac.in



Research interests:

We are investigating various traditional medicine extracts/ formulations for their possible anti-pathogenic activities. For assessing in vivo efficacy of these extracts, we are employing the nematode worm *Caenorhabditis elegans* as a model host. Molecular mechanisms underlining the anti-virulence efficacy of potent formulations are being elucidated by studying their effect on pathogenic bacteria at the whole transcriptome level. Additionally, we are investigating the influence of sonic-stimulation on different eukaryotic and prokaryotic microbes, with an aim to elucidate the molecular basis of microbial response to sound.

Publications: <http://scholar.google.co.in/citations?user=KtRI6p4AAAAJ>

Dr. Nasreen Munshi (Assistant Professor)

- Ph.D. in Microbiology (Gujarat University, Ahmedabad)
- Experience: Post-PhD. Research - 13 years, Teaching - 14 years
- Area of Expertise: Bioremediation, Microbial Fuel Cell
- Email: nasreen.munshi@nirmauni.ac.in



Research Interests: My research interest focuses on bioremediation, wastewater treatment and Microbial Fuel Cell. Common Effluent Treatment Plants (CETP) treating the effluents from thousands of different industries face problems of refractory COD, mostly contributed by hydrocarbons. We have developed a bioprocess for hydrocarbon degradation in CETP wastewater and is being investigated for field applications. Moreover, we are also developing biosensors which can indicate the level of such pollutants present. Another type of pollutant, known as oily sludge which is rich in polycyclic aromatic hydrocarbons is generated during crude oil production and processing. We are developing bioremediation strategy for its onsite treatment. We are also working in the field of Microbial Fuel Cell (MFC) using electrogenic bacteria and wastewater as substrate where we are currently investigating on increasing the voltage output.

Publications: <https://scholar.google.co.in/citations?user=rpldrEMAAAAJ&hl=en>

Dr. Ameer K. Nair (Assistant Professor)

- Ph.D. in Life Sciences (Neurosciences), (Cochin University of Science & Technology, Cochin)
- Experience: Post Ph.D. Research – 12 years, Teaching – 12 years
- Area of Expertise: Neurodegenerative Disease and Metabolic Disorders
- E-mail: ameenair@nirmauni.ac.in



Research Interest:

Proper neuronal structure, morphology, receptor function, connectivity and nutrition are prerequisite for proper functioning of the nervous system. Demyelination due to neuropathy a common debilitating complication of diabetes resulting in pain, decreased motility and amputation. Our research is an attempt to understand the generation and maintenance of myelin sheath and its critical regulation via insulin. Also the cell to cell communication lapse in pancreatic islet can lead to altered functioning. Changes in the growth factors and neurotrophic factors and insulin signaling during diabetes will help to identify novel molecules that could be of therapeutic targets for neuropathy and improve insulin secretion.

Publications: <http://scholar.google.co.in/citations?user=BVwm62EAAAAJ&hl=en>





Dr. Kuldeep Verma (Assistant Professor)

- Ph. D. in Biotechnology, Indian Institute of Soybean Research, Indore
- Experience: Postdoctoral Research - 9 years, Teaching – 3.5 years
- Area of expertise: Membrane Trafficking, and Genetic Manipulation in Plants
- Email: kuldeep.verma@nirmauni.ac.in



Research Interest:

Our laboratory is interested in the cell biology of protozoan parasite *Enatmoeba histolytica*, which causes diarrhea and can also lead to invasive colitis and extraintestinal disease. The current projects focused on the biogenesis on invadosomes and secretion of lysosome-related organelles and their implication in tissue invasion. We are also investigating the function of key molecular players for protein secretion machinery in this parasite. Our long-term goals are understanding of eukaryotic diversity and identify specific features that can be targeted to treat parasite infections.

Publications: <https://pubmed.ncbi.nlm.nih.gov/?term=kuldeep+verma&sort=date>
<https://scholar.google.com/citations?user=sIQ6144AAAAJ&hl=en&authuser=1>

Dr. Heena V. Dave (Assistant Research Scientist)

- Ph. D. in Life Science- Cancer Biology (The Gujarat Cancer & Research Institute, Gujarat University)
- Experience: Pre-PhD Research:- 14years, Post-Ph.D. Research:- 10 years, Teaching: 7 years.
- Area of Expertise: Cancer Prognostic Biomarkers, 3D cell models
- Email: heena.dave@nirmauni.a.cin



Research Interest:

Our laboratory is interested in the identification of prognostic biomarkers for breast cancer. The current projects focused on investigating key reasons for developing metastasis in breast tumors especially for bone metastasis in Triple-Negative Breast Cancers. We are also investigating the reasons for antiestrogen resistance/insensitivity and trying to identify their underlying mechanisms. Our long-term goals are to identify comprehensive biomarkers/cocktail of biomarkers irrespective of the biological subtypes and their implications in selecting treatment strategies. Our research is supported by DST, GOI

Publications: https://scholar.google.co.in/citations?user=_dxRqQ0AAAAJ&hl=en



Pillars of Strength

Mr. Dinesh Patel

(Office superintendent) Administration

Dr. Svetal Shukla

(Assistant Librarian) Library

Mr. Parthiban S. Mudaliyar

(PA cum Stenographer)

Mr. Hasit Trivedi

(Senior Assistant) Administration

Mr. Sachin Prajapati

(Lab Assistant) Laboratory

Dr. Sweta Patel

(Lab Assistant) Laboratory

Mr. Rajendra Patel

(Store Keeper)

Mr. Tushar Patel

(Placement Officer)

Ms. Zankruti Dholakia

(Research Associate)

Contact Us

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INDUSTRY EXPOSURE

Industrial visits, training in industry, experts from industry deliver lectures and seminars

EXPOSURE TO TRENDS AND DEVELOPMENTS

Organizing seminars, symposiums etc on the topic of current interest

GROUP LEARNING

Students are encouraged to learn in groups and group projects are also a part of the academic life at the Institute

COURSE WORK

The main mode of learning at the Institute includes classroom activity, laboratory work and assignments involving extensive use of library

The Learning at Institute of Science

COMMUNICATION SKILLS DEVELOPMENT

One of the regular features at the Institute is class seminars and magazine of the student bodies

SOCIAL RESPONSIBILITY

Contribute to the society at large by participating in activities like blood donation camp, blood grouping in rural areas

EXTRACURRICULAR ACTIVITIES

Participate in cultural events, sports and personality development

CO-CURRICULAR ACTIVITIES

Participate and present posters in technical competitions, seminars. Conferences throughout the country, preparing for UGC-CSIR



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