Information booklet 2024

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

Nirma Education and 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 R. D. Shah
Eminent Chartered Accountant

Shri Hirenbhai K. Patel
Managing Director, Nirma Limited

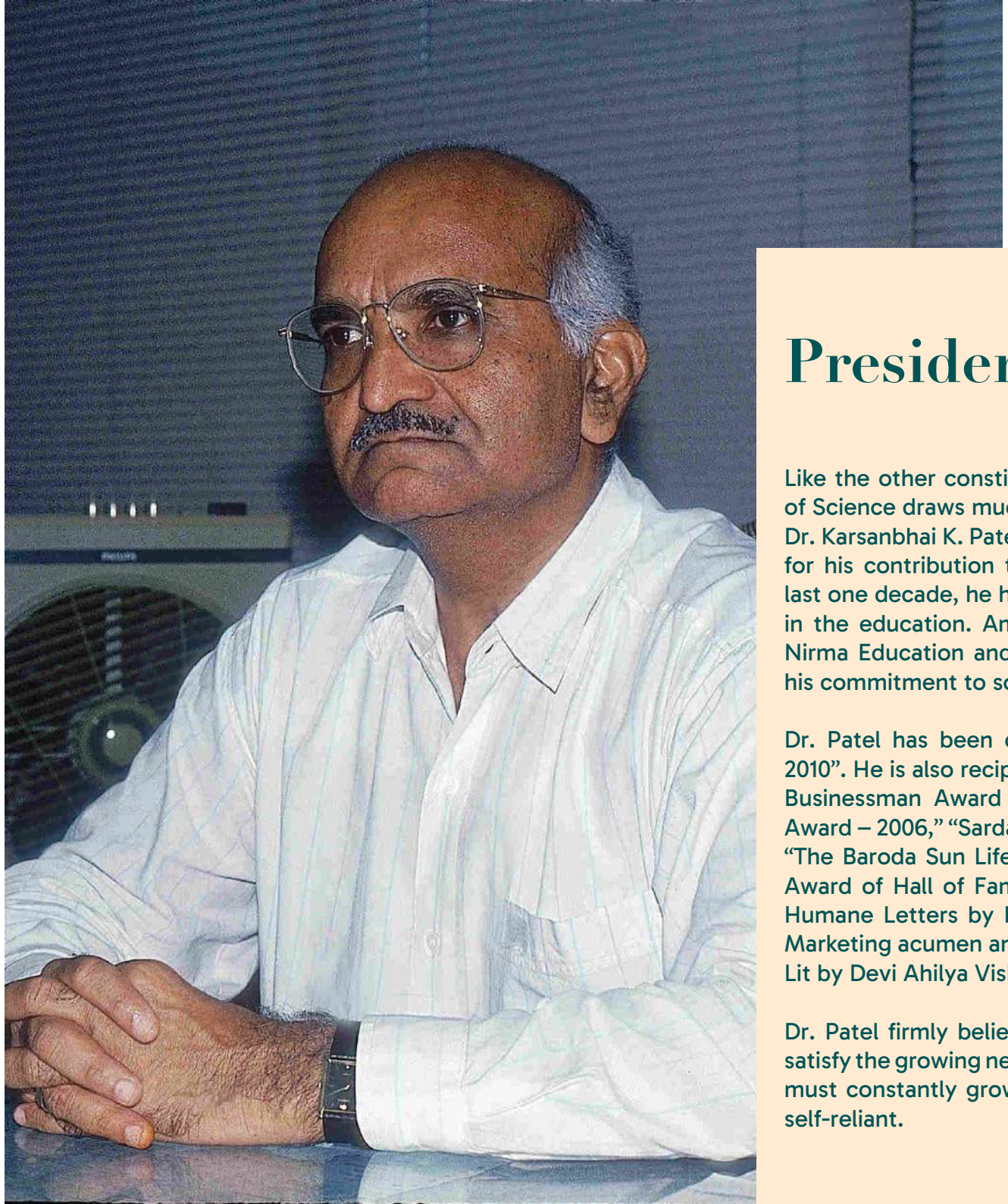
Shri Rakeshbhai K. Patel
Vice Chairman, Nirma Limited

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 duly recognized by the University Grants Commission (UGC) under section 2(f) of the UGC Act. The University has recently been awarded 'A+' grade by National Assessment and Accreditation Council (NAAC), making it the first private university in Gujarat to enter into the elite group. In January 2022, Government of Gujarat recognized Nirma University as an 'Center of Excellence'. The University is a member of Association of Indian Universities (AIU) and Association of Commonwealth Universities (ACU). The University has also received SIRO (Scientific and Industrial Research Organization) recognition from DSIR, Department 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, 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.



President

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 “Padam 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

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.

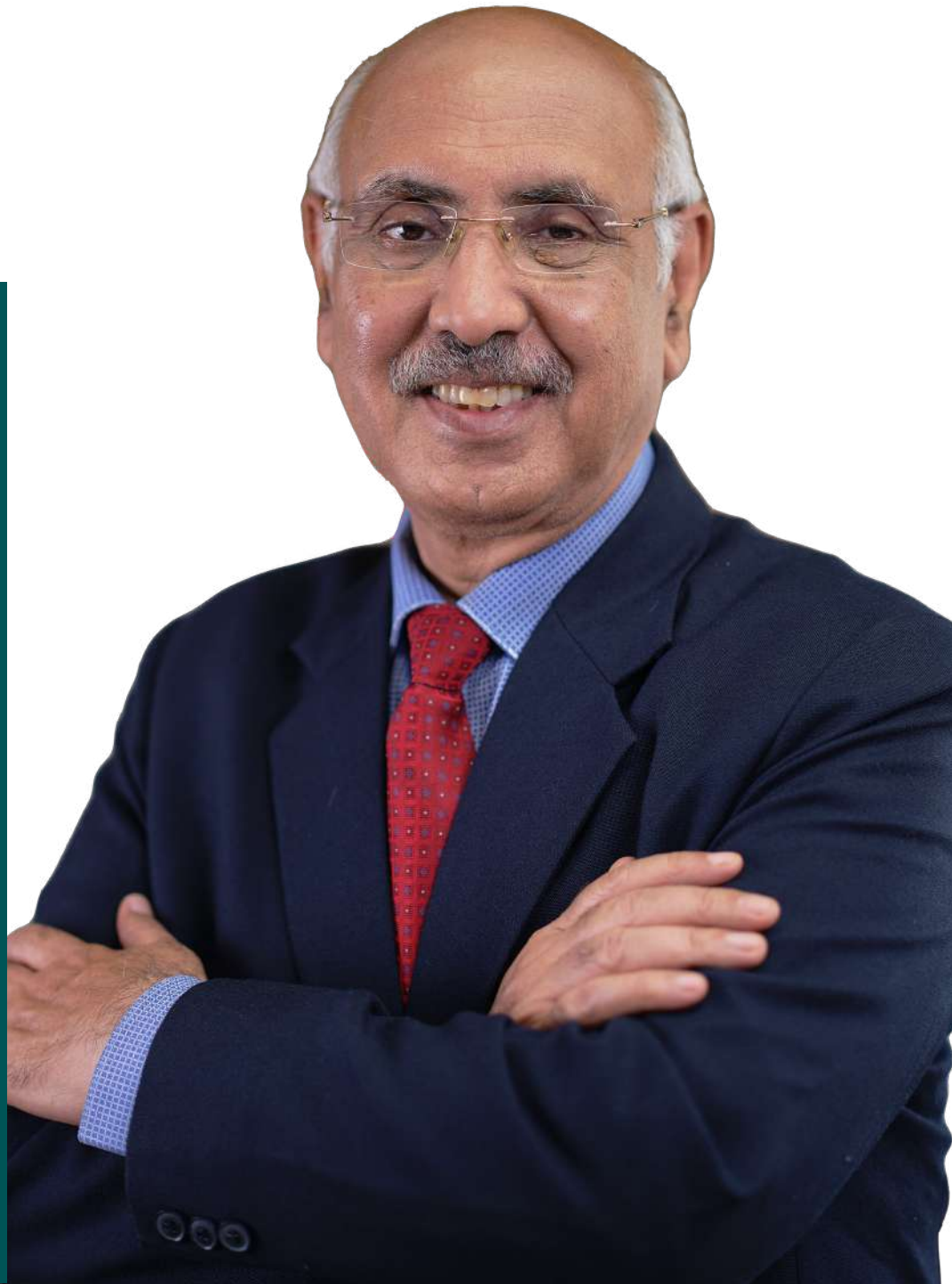
At Nirma University, we provide high quality education in biological sciences in diverse branches of Biotechnology, Biochemistry and Microbiology. Along with the requisite knowledge in the subjects, we focus on the overall development of the students so that they are ready to take up the challenges that 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 state and central 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 center, where students not only meet but also discuss serious academic and social matters. 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



From The Director's Desk

Biology has scaled great heights and become multidisciplinary in nature. The success of human genome sequencing with the emergence of systems biology has 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, analyse 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, relevant practicals in laboratories, 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 the 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


NIRMA
UNIVERSITY

About The Institute of Science

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; Bio- technology, 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, and 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).

RESEARCH ADVISORY COMMITTEE (RAC)

Prof. L. S. Shashidhara
Director,
National Centre for Biological Sciences (Bangalore)

Dr. Bhaswat Chakraborty
Independent Consultant & Ex. Professor Emeritus NIP

Prof. Rakesh Bhatnagar
Vice-Chancellor
Banaras Hindu University

Dr. Sanjeev Kumar
President
ZydusCadila, Ahmedabad

Dr. Jay Shankar Das
Director, Research, Projects & Innovation
(National & International) SOA Deemed University,
Bhubaneswar

Dr. Narottam Sahoo
Advisor and Member Secretary
Gujarat Council On Science and Technology (GUJCOST),
Gandhinagar

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 seminarhalls 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 include Flow cytometer, Fluorescence Microscope, Fermenter, Thermal Cycler, Gradient PCR, Real Time PCR, ELISA Reader, CO2 Incubator, UV-visible Spectrophotometers, Luminometer, Biosafety Cabinet, Gel Documentation System, Ultra Sonicator, BiologTM, Hybridization Chamber, HPLC, Fluorimeter, Denaturing Gradient Gel Electrophoresis, Orbital Shakers, Refrigerated Centrifuges, -20 & -80oC Freezers, Liquid Nitrogen Storage Facility, Lyophilizer, Cryostat microtome, Nanodrop, 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.

Bioinformatics Lab Facility

Bioinformatics lab is developed recently with dedicated databases/ software/pipeline/solution in the areas viz. Genomics, Proteomics, Transcriptomics, Metabolomics, Structural Biology, System Biology, DNA Computing, Biostatistics, Computational Biology and Big Data Analysis.

The institute was also recognized (and funded) as a bioinformatics nodal center by Gujarat State Biotechnology Mission (GSBTM) to promote and develop skilled manpower in the field of bioinformatics.

Centre for Advanced Instrumentation Facility

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

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 2606 volumes of books meticulously chose for reading and reference in addition to 104 CDs, 408 Bound Volumes, 413 M.Sc. Dissertations and 82 PhD Theses. The Institute library has subscription of 124 journals comprising print journals (4) and online journals (116) including Science Direct (8), InfoTrac Engineering, Science & Technology Collection (116).

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)

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

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 and non-vegetarian food is not allowed. Further consumption of narcotic drugs and alcoholic beverages is strictly prohibited. The hostel residents are expected to adhere to the hostel rules and regulations.

Bank

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

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.

Medical Facility

There is a non-resident doctor who visits the campus regularly on weekdays.University also has its own Ambulance available on 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 for the students and the staff for all the areas of the city. For this the university has its own buses, which offer services for both pick-up and drop- off.

Master's Degree

The Institute offers Master's Degree Programme in the following disciplines:
1. Biochemistry
2. Biotechnology
3. Microbiology

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

The Curriculum has been designed to provide a balance among the theoretical aswell 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 andupdating are a mixed consortium of academic peers with vast experience, alumni,and faculty members. Modifications and up-gradation of the curriculum areconstantly being undertaken. Suggestions are also invited from peers from scientificacademics, research, and industry.

The curriculum consists of compulsory (core),elective, enrichment, and supplementary courses. The unique feature of thecurriculum is research projects.

The reforms pertaining to the curriculum have been brought upon looking into theguidelines of UGC and the recent development in the international scenario. Institutehas also made special provisions of offering remedial teaching wherever necessary.The Institute has also adopted the Outcome-Based Curriculum to enhance itsTeaching and Learning and Continuous Assessment throughout Semesters.

Master's Degree - Curriculum First Year

	M. Sc. Biochemistry	M.Sc. Biotechnology	M.Sc. Microbiology
Semester I	Cell Biology	Cell Biology	Cell Biology
	Molecular Biology	Molecular Biology	Molecular Biology
	Metabolism	Metabolism	Metabolism
	Basic Immunology	Basic Immunology	Basic Immunology
	Human Physiology	General and Applied Microbiology	General and Applied Microbiology
	Laboratory I	Laboratory I	Laboratory I
	Seminar I	Seminar I	Seminar I
Semester II	Neurobiology	Industrial Microbiology & Fermentation Technology	Industrial Microbiology & Fermentation Technology
	Bioanalytical Techniques	Bioanalytical Techniques	Bioanalytical Techniques
	Genetic Engineering	Genetic Engineering	Genetic Engineering
	Reproductive Physiology	Microbial Genetics	Microbial Genetics
	Elective I	Elective I	Elective I
	Seminar II	Seminar II	Seminar II
	Laboratory II	Laboratory II	Laboratory II

Masters Degree - Curriculum Second Year

	M. Sc. Biochemistry	M.Sc. Biotechnology	M.Sc. Microbiology
Semester III	Biochemical Toxicology	Molecular Microbial Physiology	Molecular Microbial Physiology
	Cancer Biology	Animal Biotechnology	Medical Microbiology & Virology
	Endocrinology	Cancer Biology	Agriculture & Environmental Microbiology
	Animal Biotechnology	Genomics and Proteomics	Microbial Diversity & Sys- tematics
	Elective II	Elective II	Elective II
	Laboratory III	Laboratory III	Laboratory III
	Dissertation Tutorials	Dissertation Tutorials	Dissertation Tutorials
	Research Methods	Research Methods	Research Methods
	Summer Internship	Summer Internship	Summer Internship
Semester IV	Dissertation/ Industry internship	Seminar II	Seminar II
	Dissertation/ Industry internship	Laboratory II	Laboratory II

During summer, supplementary learning activities and / or practical training are planned and students have to compulsorily take up summer internships. 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.

List of elective courses

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

Supplementary Courses

- Basics of Animal Physiology
- Basics of Microbiology
- Professional English
- Professional Development and Resume Writing
- Dissertation tutorial
- Interpersonal and Networking Skills

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 a visit to industries. Continuous evaluation and counseling are important parts of the academic program.

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 counselors 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 a credit-based semester system. It is devised tomotivate 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.

Number of seats

25  Masters in Biochemistry

25  Masters in Microbiology

40  Masters in Biotechnology

Eligibility and Admission Criteria

A student seeking admission to any of the above-mentioned Programme must fulfill 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, Biotechnology, 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 semesters/years.

Candidates who have appeared for the final semester of qualifying examination can also apply. In such cases, 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.

Admission is granted purely based on merits obtained in the common Entrance Test conducted by Nirma University. The candidates will be given provisional admission at the time of counseling, and the same will be confirmed if they secure a minimum aggregate of 50% marks after the declaration of B.Sc. final results.

Application

The interested applicants are required to fill the online application form which is available on our Nirma University website (https://admissions-is.nirmauni.ac.in/student/). The application form fee is Rs. 1250/- (nonrefundable) which is also to be paid online.

Selection Procedure

Admission is granted purely based on merits obtained in the common Entrance Test conducted by Nirma University. The candidates will be given provisional admission at the time of counseling, 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. 200,000/- per annum
- **M. Sc. Microbiology** - Rs. 200,000/- per annum
- **M. Sc. Biotechnology** - Rs. 200,000/- per annum

Other Charges/Deposits Applicable for all programmes Registration PG - Rs. 1000/- (Onetime)
Refundable Security - Rs. 10000/-
University Examination Fees - Rs. 11000/- per annum
(Semester End Exam, Mid Semester Exam, Semester Grade Report)

Hostel (Optional)

Hostel Fees (Non-AC Dormitory) - Rs. 67,500/- per academic year
Laundry Charges - Rs.5,500/- per annum
Mess Advance - Rs. 52,500/- for 10 months [mess advance – as per new circular, months not mentioned] **# Subject to revision**

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

Cancellation of admission and Fee 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:

Sr. No	Percentage of Refund of Aggregate Fees•	Point of time when notice of withdrawal of admission is served by the student to the Institute
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 being formally notified last date of admission.
4.	50%	30 days or less but more than 15 days, after being formally notified last date of admission.
5.	00%	More than 30 days after being formally notified last date of admission

(*Inclusive of course fees and non-tuition fees but exclusive of security deposit)
(# an amount, not more than 5% of aggregate fees, subject to a maximum of Rs. 5000/- shall be deducted as a processing charge from the refundable amount.)
All the disputes are subject to Ahmedabad jurisdiction only.

International Students

• CHILDREN OF INDIAN WORKERS IN GULF COUNTRIES AND SOUTH EAST ASIA(CIWGC-SEA)
The candidates whose parents are working in Gulf countries or South East Asia are only eligible under this category.

• 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.

• 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. 10% 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 to 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 Office of International Relations.

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, Animal Toxicological Studies, Anticancer Therapeutics, Biodegradation, Bioremediation, Microbial Diversity, Multi-Drug Reversal Studies, Metabolic disorder, Diet induced diabetes, Gut Microflora, Liver inflammation. Eligibility and Admission Criteria: The candidates holding Masters's 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 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 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 students registered for the doctoral program have to complete coursework that carries a total of 16 credits (15 hours per credit). The coursework comprises five subjects including a compulsory course on research methodology and research ethics. The students registered for their Ph.D. are expected to complete their coursework within one year from the date of registration. The specialized course on Ethical practices in research and publication is conducted at university level. The regulations for Ph.D. programme are available on the website under section “Academic Regulations for Ph.D. (Full-Time & External) students”.

Research at the institute

The Institute is actively involved in research work since the start of its research programme in 2007. Currently, 31 full-time Ph.D. 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 22 papers in international journals and 3 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 Thrust

Sr. No	Thrust Area of Research	Major areas of Research
1.	Non-communicable Diseases	• Genetic Disorders • Tumor Immunology • Cancer Diagnosis and Therapy • Diabetes and Metabolic Disordersadmission
2.	Infectious Diseases	• Antimicrobial Resistance • Malaria
3.	Environmental Bio-technology	• Hydrocarbon Bioremediation • Microbial Fuel Cell and Waste water Treatment

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 6 crores and 5 lakhs.

1. Exploring the colonization of non-rhizobia and understanding the fate of rhizobcteria during rhizobial infection in mung bean. DBT, Govt. of India.

2. Diversity and plant promotion abilities of Actinomycetes in the wheat rhizosphere in Gujarat region. GSBTM, Govt. of Gujarat.

3. Identification of CD8+T cell – specific to liver-stage antigens of Plasmodium berghei to understand anti-malarial protective immunity. GSBTM, Govt. of Gujarat.

4. Understanding the nature of liver-stage specific CD8+T cells generated following infectious sporozoite challenge that ensure long-lived protection against plasmodia infection. DBT, Govt. of India.

5. Molecular basis of succinate mediated (catabolite) repression of mineral phosphate solubilization in nitrogen fixing Klebsiella pneumonia. DST, Govt. of India.

6. Biochemical basis of repression of MPS phenotype in rhizobia. GSBTM, Govt. of Gujarat.

7. Ideopathic mental retardation and dysmorphism: Karyotypic and UPD Analysis. GSBTM, Govt. of Gujarat.

8. Generation of thermostable variants of a mesophilic amylase by directed evolution and their characterization. GSBTM, Govt. of Gujarat.

9. Reconstitution of novel TK/NOG mice with 'Humanized Liver' to study liver stage infection of Plasmodium falciparum. SERB-DST, Govt. of India.

10. Determination of specific absorption coefficient for the dominant macro algal species of Indian coastal water- A step towards developing bio markers and pigments algorithm. DST-SERB, Govt. of India.

11. Infectious nature of Plasmodia modulating the innate response of host in liver stage infection deciding the fate of adaptive immunity. DST, Govt. of India.

12. Development of Chimeric IL-15 to improve its bioavailability and efficacy. DBT, Govt. of India.

13. Regulation of MHC II expression: Immunity to malaria. DST- SERB, Govt. of India.

14. Role of Synatogenic Adhesion Molecules (SAMs) for insulin secretion during Diabetic and Hypoglycemic condition. DST, Govt. of India.

15. Investigation of the regulatory role of miR-712 in inflammation induced skeletal muscle insulin resistance. DBT, Govt. of India.

16. Elucidating the role of short chain fatty acids (SCFAs) and its receptors in high sugar diet-induced type II diabetes. GSBTM, Govt. of Gujarat.

17. Biotechnological applications for Transforming the most abundant bacteria from industrial waste waters of South Gujarat for bioremediation. DBT, Govt. of India.

18. Development of neoadjuvant from medicinally important bamboo plants for radiotherapy in cancer. AYUSH. Govt. of India.

19. Investigating the role of Crc in regulation of PQQ GDH involved in MPS phenotype of Acinetobacter sp. and its repression. DST-SERB, Govt. of India.

20. Understanding the spatiotemporal dynamics and ultrastructure details of ECM degrading device “amoebic invadosomes” and their crosstalk with Rab GTPases an cell surface proteases trafficking machinery in E. histolytica. DST-SERB, Govt. of India.

21. Understanding the functional role of vacuolar ATPases in trogocytosis and tissue invasion mediated by Entamoeba histolytica. DST-SERB, Govt. of India.

22. Investigation of the molecular basis of enhanced EPS production by X. campestris under the influence of audible sound. GUJCOST.

23. Investigation on QS modulatory potential of Herboheal. SRISTI-DBT-BIRAC.

24. Digital image classification in human chromosome analysis: Computer approach to automation. ITNU Idea Lab.

25. Survey and development of strategy for removal of nutrients from stagnant water bodies in and near Ahmedabad region. iCreate.

26. Evaluation of Boric Acid induced male reproductive toxicity and ascertaining reversals poptential of hydro-alcoholic extracts of Eclipta Alba. GUJCOST.

27. Comparative study of the nature of innate immunity generated in response to attenuated (yspz) vs. infectious soporozite in plasmodia infection. GUJCOST.

28. Downs syndrome In Gujarat: Molecular Probing In Origin. GUJCOST.

29. Demographic survey of major cities of Gujarat for creation of Diabetic map. GUJCOST.

30. To investigate the expression of T cell and their subsets (Th1, Th2, Th17 and Treg) cells in melanoma. Nirma University.

31. Understanding the functionalrole of Sar1-like GTPases homologue from Entamoebahistolytica. Nimra University.

32. Identifying small molecule inhibitors of LasR in P. aeruginosa. Atomwise Inc., USA

33. Identifying small molecule inhibitors of NOR in P. aeruginosa. Atomwise Inc., USA

34.Investigation of the regulatory role of miR-712 in inflammation induced skeletal muscle insulin resistance. DST-SERB, Govt. of India.

Ongoing Research Projects

Ongoing Major Research Projects funded by External Agencies:

1. Dr Nasreen Munshi received grant worth Rs. 77.757 Lakhs in DBT Networking Project on "Engineered bioremediation approaches for onsite treatment of soil contaminated with crude oil" (Total Project cost Rs. 8.43 Crores) involving nine National Institutes. Participating Labs: (i) Assam University, Silchar, Assam; (ii) CSIR-NIO, Goa; (iii) CSIR-IITR, Lucknow; (iv) Institute of Advanced Study in Science & Technology (IASST), Assam; (v) IIT-Bombay, Mumbai, (vi) IIT-Delhi, New Delhi; (vii) Institute of Science, Nirma University, Ahmedabad; (viii) The Energy and Resources Institute, New Delhi; (ix) ONGC. Sanction No.: BT/PR30261/BCE/8/1495/2018 dated March 19, 2019. Duration: 3 years. No-cost Extension received till March 2024.

2. Dr. Nasreen Munshi, Prof. Manisha Shah, Prof. Chetna Chauhan. This project is of interdiciplinary nature and combined with Institute of Technology, Nirma University and Veer Narmad South Gujarat University (Rs. 48.96574/-) Project title "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 from Gujarat State Biotechnology Mission (GSBTM). No-cost Extension received till March 2023.

3. Dr. Heena Dave, Assistant Research Scientist received a grant Rs. 7.25.000/- on title "Bone metastatic signature in Indian breast cancer patients: A transcriptome based study" from Department of Science & Technology, GoI, WOS-A Scheme. No-cost Extension received till August 2022.

4. FIST Infrastructure Grant received Rs. 90,00,000/- to Institute of Science, Nirma University from Department of Science and Technology, New Delhi.

5. Prof Sarat Dalai received a grant of Rs. 49.5 lakhs for the Major Research Project titled 'Studying Immune Adjuvant Potential of chimeric IL-15'from GSBTM, Govt. of Gujarat during March 2020.

6. Prof. Sarat Dalai received a sanction of 89.36 lakhs from the Dept. of Biotechnology, Govt. of India for his research project "Understanding the Role of B cells in Cross Presentation of Plasmodium Liver-stage Antigen(s) to CD8+ T cells", June 2020.

7. Dr. Sonal R. Bakshi received grant for the project entitled "Combination of chimeric IL-15 and recombinant IL-12 as immunotherapy for lung and colon cancer" by GSBTM, Govt. of Gujarat in January 2022 with Prof. Sarat Dalai as co-PI, Rs.59,96,856/-

8. Dr. Heena V. Dave received multi-institutional collaborative project entitled "Therapeutic Targeting of Androgen Receptor as a biomarker to improve the clinical outcomes of Triple-Negative Breast Cancer" by GSBTM, Govt. of Gujarat in January 2022 with other two Co-PI, Dr. Jigna Shah, Institute of pharmacy and Dr. Hemangini Vora, The Gujarat Cancer & Research Institute, Rs. 44,14,856.

9. Dr. Heena V. Dave received collaborative multi-institutional project as Co-PI, entitled "Repositioning Doxycycline as Anti-Cancer Therapy and Exploring its synergy with extracellular ATP manipulation in Breast Cancer: Pre-clinical and Early clinical Exploration" by GSBTM, in June 2021 with Dr. Reena Rajput as PI, Institute of Advanced Research and other two Co-PIs, Dr. Jigna Shah, Institute of Pharmacy and Dr. Chirag Desai, Vedanta hospital. The Institute of Science share will be Rs.33,9000.

10. Dr. Ravi Kant received SERB funded SRG grant worth 31,58,160 during December 2022; entitled “Protein multimerization- a strategy to enhance antigen presentation and immune response to vaccine candidate antigens”; Duration: 2 years.

11. Dr. Aarthi Sundararajan received SERB funded SRG grant worth Rs 31,59,170 during November, 2022; entitled “Prospective profiling of circulating dendritic cell subsets for early detection of early onset and late onset pre-eclampsia among pregnant women”; Duration: 2 Years.

Major Research Projects funded by Nirma University

Dr Sonal R. Bakshi with Dr. Swati Manekar, ITNU received a grant on “Study of constitutional geneitc markers infamilial cancer cases” Nirma University under scheme of NU-MAJOR RESEARCH PROJECT for Rs. 30.00 Lakhs.

Minor Research Projects funded by Nirma University

Dr. Ravi Kant received a NU funded minor research grant worth 2,00,000 during May 2022; Title Oligomerization – a strategy to enhance the immunogenicity of protein antigens; Duration: 2 years.}

Presently there are 12 externally funded major research projects running in the Institute of Science worth Rupees 4 crores and 52 lakhs.

1. Microbial Fuel Cell: An Approach for Wastewater Treatment with Generation of Green Electricity. Nirma University.

2. Engineered Bioremediation Approaches for Onsite Treatment of Soil Contaminated with Crude Oil. DBT, Govt. of India.

3. 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. GSBTM, Govt. of Gujarat.

4. Understanding the Role of B cells in Cross Presentation of Plasmodium Liver-stage Antigen(s) to CD8+ T cells. DBT, Govt. of India.

5. Studying the immune adjutant potential of chimeric IL-15. GSBTM, Govt. of Gujarat.

6. Bone metastatic signature in Indian breast cancer patients: A transcriptome based study. WOS-A-DST, Govt. of India.

7. Therapeutic Targeting of Androgen Receptor as a biomarker to improve the clinical outcomes of Triple-Negative Breast Cancer. GSBTM, Govt. of Gujarat.

8. Repositioning Doxycycline as Anti-Cancer Therapy and Exploring its synergy with extracellular ATP manipulation in Breast Cancer: Pre-clinical and Early clinical Exploration. GSBTM, Govt. of Gujarat.

9. Combination of chimeric IL-15 and recombinant IL-12 as immunotherapy for lung and colon cancer. GSBTM, Govt. of Gujarat.

10. Study of constitutional genetic markers in familial cancer cases. Nirma University. Oligomerization- a strategy to enhance the immunogenicity of

protein antigens. Nirma University.

11. Protein multimerization – a strategy to enhance antigen presentation and Immunogenicity of vaccine candidate antigens. SERB, DST, Govt. of India.
12. Prospective profiling of dendritic cell subsets for early diagnosis of early onset and late onset pre-eclampsia in pregnant women. SERB, DST, Govt. of India.

Interdisciplinary Research Initiative

Discipline-specific research is conventional and core approach in the field of basic science, however; when researchers adopt an 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 the Institute of Pharmacy, the Institute of Technology in key areas.

Linkages and Collaborations

The University, recognizing research as the main drivers 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, NIPER, 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, and collaboration with various reputed national as well as international universities, research institutes, and industry 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; ISTRA-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.

Beyond The Classroom

Expert Lectures

The institute is also arranging expert lectures on various subjects to enhance the knowledge of the students. The institute is also arranging eminent scientists/ researchers to sensitize students to pursue their careers in research. These lecture series are held on various emerging research topics or the latest technology Seminar The students are motivated to present seminars on the latest developments in the field of science. Seminars enable students to develop many skills through the 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 an integral part of the study to acquaint them with real-world problems. The students have to compulsorily go for internships in any industry during their summer break under the 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 for its faculty and students to interact with eminent scientists from India and abroad, the Institute has been organizing National Conference annually. During the 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

• Faculty Development Programme on “Current Advances in AI, Systems Biology and 3D Bioprinting in Biomedical Research” from June 27th to 8th July, 2022.

• National Seminar “Cancer Immunotherapy” on 10th March 2023.

Industry Institute Interaction Cell

Industry Institute Interaction Cell (III Cell) is established to provide close links with industries, contract research organizations, and other state and national level R & D organizations. The purpose of the cell is to find out the gap between the need of the 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 industrial personnel. Industry institute interaction cell provides close links with industries. The placement of students for industry training/ projects during summer has been benefiting students to a great extent.

We believe in developing programmes, which provide a 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 their future careers. The III Cell is governed by the advisory committee; headed by the Director as a chairman, Heads of departments as members, and the 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 the student for jobs. It fulfills a 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 mold them for the long-time needs 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. To 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 a smooth transition from Academics to the corporate world, the institute grooms students on Interview etiquette, Resume building, Communication skills, presentation skills, etc.

ALUMNI ASSOCIATION (ISNUAA)

The first eleven 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 the scope of the research and other career options, national competitive exams, rules, schemes for fellowships, etc. MILAN, an annual alumni meet involves a get-together over lunch, a cultural programme, revival of memories, experience sharing, and guidance. The visit to alma-mater is cherished by all.

Online talks by alumni from research, industry, and journalism fields were arranged during the lockdown time, which is going to be done regularly now. 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


NIRMA
UNIVERSITY
INSTITUTE OF SCIENCE
Institute of Science Nirma University

Orientation For Freshers

The Institute organizes a unique orientation programme of one to two weeks for 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, and understand each other and it also provides a 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 & 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 coursework. 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 in 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 the Board for Student's Welfare, Nirma to provide a platform for the students to showcase their talents and be rooted in 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 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 as volunteers during these events. De Novo magazine "De Novo" is an annual publication of ISNU. The Editorial Board consists of selected students, a faculty coordinator, and Director. The magazine gives a 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 has a student association INSSA since October 2015. The association consists of nominated student representatives including both the postgraduates and Ph. D. students and faculty members as mentors. INSSA serves as a bridge between the administration, faculty, staff, and students. It aims to strengthen communication, give common platforms, enhance skill and knowledge and promote a culture of academic excellence, and provide opportunities to expand their horizons, reach their full potential, discover their talents, and change the world around them. Since its commencement INSSA has organized events like Scientific Retreat, Secret Santa, Donation Drive, Days celebrations like Twin's Day, Traditional Day, Mismatch Day, Signature Day, Women's Day, etc.

Life at Campus

Institute of Science, Nirma University has a student association INSSA since October 2015. The association consists of nominated student representatives including both the postgraduates and Ph. D. students and faculty members as mentors. INSSA serves as a bridge between the administration, faculty, staff, and students. It aims to strengthen communication, give common platforms, enhance skill and knowledge and promote a culture of academic excellence, and provide opportunities to expand their horizons, reach their full potential, discover their talents, and change the world around them. Since its commencement INSSA has organized events like Scientific Retreat, Secret Santa, Donation Drive, Days celebrations like Twin's Day, Traditional Day, Mismatch Day, Signature Day, Women's Day, etc.

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 immedi- ate action against any untoward action and also to counsel the fresher. Students seek- ing 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 stu- dents 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 embar- rassment 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 to 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 the 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 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 counselors to guide them in 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

Dr. Sarat K. Dalai (Professor) Ph. D. in Immunology (Jawaharlal Nehru University, New Delhi)

Experience: Post -Ph.D. Research:- 21 years, Research career in USA at NIH, Johns Hopkins School of Medicine, and Walter Reed Army Institute of Research for US Military Malaria Vaccine Development program, Teaching: 12 years. Area of Expertise: T-cell Immunology Email: sarat.dalai@nirmauni.ac.in

Research Interests: Our laboratory is working on the generation and maintenance of memory T cells. The major focus of our laboratory is directed toward understanding the nature of immune responses generated against Plasmodium liver-stage infection. Protective immunity against the 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 an endemic area and found that the protective immunity can be extended longer in immune-host receiving intermittent challenge of infectious sporozoite. We are pursuing studies to understand how the infectious challenge brings in qualitative changes in memory T cells ensuring long-lived immunity. We are also developing a 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

Publication :
https://scholar.google.co.in/citations?user=aqljaoAAAAAJ&hl=en

Dr. Sriram Seshadri (Associate Professor)
Ph.D. in Science (Reproductive Physiology) (University of Rajasthan, Jaipur)

Experience: Post Ph.D. Research – 19 years, Teaching – 21 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 the 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 intestinal microflora and insulin resistance and bile acid metabolism. 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 bile acid metabolism and its receptors 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. Sanjib Bhattacharyya (Associate Professor) Master of Science in Chemistry from IIT, Kharagpur, Ph.D. in Medicinal Chemistry (University of Missouri Columbia, USA)

Dr. Bhatacharyya did PhD from university of Missouri Columbia, USA in 2009 in Bio-organic Chemistry and in 2002 Experience: Post-PhD. Research - 14 years, Teaching - 5 years Area of Expertise: Biomedical research, Neuro biochemistry and Nano Drug Delivery Email: sanjib.bhattacharyya@nirmauni.ac.in Research Interests: Dr. Sanjib Bhattacharyya laboratory is interested to conduct research on protein misfolding and cytoskeletal disorders related to neurodegenerative disease. He has more than 14 years of academic and research experience in the interdisciplinary research field of bio-organic chemistry, biochemistry, cancer metabolism, nano drug delivery, pharmaceutical science, nanobiotechnology and transport disorders related to Alzheimer disease, and effect of dietary phytochemicals on anxiety associated disorders. He has many peer reviewed research publications in journals of high scientific impact and many prestigious awards such K S Krishnan Fellow (a President of India Fellowship) 2012, AIMR Fusion research grant, CSIR-UGC fellowship (2003), and so on to his credit. He also has attended and presented many scientific papers in many conferences of international repute such as Gordon conference and ACS.

Publications:
https://scholar.google.com.tw/citations?hl=en&user=9gPb9jIAAAAJ

Dr. Sonal R. Bakshi (Assistant Professor)
Ph.D. in Life Science (Gujarat University, Ahmedabad),

Experience: Post Ph.D. Research – 18 years, Teaching – 13 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: In vivo animal models for cancer, Idiopathic mental retardation and its genetic analysis in terms of chromosomal and molecular genetics is one of the research interests to sub-classify human birth defects. The constitutional genetic variants in cases of familial cancer are studied currently using whole-exomesequencing. We have reported a study on the mechanism of recurrent chromosomal translocations, and the parental and meiotic origin of constitutional aneuploidy. The radioprotective effect of herbal extract is studied using in vitro cytogenetic endpoints. The in vitro assessment of genotoxicity for cancer risk assessment involves the study of cytogenetic endpoints like chromosomal aberrations, micronucleus, and comet assay following exposure to candidate compounds like plant extracts with anti-cancer activity, nanoparticles of metal oxides, and cell phone radiation.

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

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=KtRl6p4AAAAJ

Dr. Nasreen Munshi (Assistant Professor)
Ph.D. in Microbiology (Gujarat University, Ahmedabad)
Experience: Post-PhD. Research - 15 years, Teaching - 17 years
Area of Expertise: Bioremediation of hydrocarbon pollutants, Microbial Fuel Cell for
wastewater treatment, Development of hydrocarbon biosensors, PHA based bioplastics
Email: nasreen.munshi@nirmauni.ac.in

Research Interests: My research interest focuses on environmental bioremediation, wastewater treatment, biosensor development and Microbial Fuel Cell (MFC). Common Effluent Treatment Plants (CETP) treating 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 detect 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 a bioremediation strategy for its onsite treatment. Apart from its treatment, we are working on bacteria which can degrade oily sludge and generate polyhydroxyalkanoate (PHA) as a useful bioplastic polymer for bioplastic synthesis. We are also working in the field of MFC using electrogenic bacteria for treatment of wastewater containing organic substrates where we are currently investigating on increasing the voltage output.

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

Dr. Amee K. Nair, (Assistant Professor)
Ph.D. in Life Sciences (Neurosciences), (Cochin University of Science & Technology, Cochin)
Experience: Post Ph.D. Research – 13 years, Teaching – 13 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 is 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 the 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 therapeutic targets for neuropathy, wound healing and improve insulin secretion.

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

Dr. Ravi Kant (Assistant Professor)
Ph. D. in Life Science (Immunology), National Institute of Immunology, New Delhi
Experience: Postdoctoral Research - 7 years (Indian Institute of Science, Bangalore; Scripps Research Institute, San Diego; Technische Universität München, Germany)
Teaching – 2 years
Area of expertise: Autoimmunity; Angiogenesis; Protein therapeutics
Email: ravi.kant@nirmauni.ac.in

Research Interest: Dr. Ravi Kant obtained his Master's degree in Medical-Biotechnology from the All India Institute of Medical Science (New Delhi), Ph.D. from the National Institute of Immunology (New Delhi). As part of his Ph.D. thesis project, he developed novel peptide analogs of myelin basic protein (MBP)85-99, and tested their therapeutic activities in-vitro and in experimental mice with autoimmune encephalomyelitis, a model for Multiple Sclerosis. Since his Ph.D. he has been focusing on various immunological and vascular changes that take place in the central nervous system of mice with autoimmune encephalomyelitis. Fellowships awarded/availed CSIR JRF-NET (2008-13), DBT-JRF (2008 & 09), GATE (2008), DBT-PG fellowship (2006-08), Merit scholarship (2000-02).

Publications: https://scholar.google.com/citations?user=JwK8MdMAAAAJ&hl=en&oi=sra

Dr. Shruti Chatterjee (Assistant Professor)
PhD in Microbiology from Osaka Prefecture University, Japan.
Experience: Postdoctoral Research - 18 years, Teaching – 1.5 years Email: shruti.chatterjee@nirmauni.ac.in

Research Interest: Dr Shruti Chatterjee, is MSc in Marine Biology & Oceanography from CAS Marine Biology. She was working as Pool Scientist at Council of Scientific and Industrial Research-Central Salt and Marine Chemicals Research Institute (CSIR-CSMCRI), at Bhavnagar, Gujarat. She has also served as Scientist fellow at CSIR-National Institute of Oceanography, Goa. I worked as Assistance Professor at CSIR-AcSIR for teaching PhD students. She is involved in the application-oriented research. She works in the development of anti-virulent agents, bioactive formulations from marine and terrestrial resources. She has experience in higher animal handling and polyclonal anti-body development including various work in marine animal models; and also in marine environmental field. She had handled core R&D projects as PI and Co-PI worth around 258 lakhs. She has published 31 research papers international peer reviewed scientific journals, and 5 patents are filed. She has 5 book chapters in international publishers.

Publications:
https://scholar.google.com/citations?hl=en&user=Cx_OL3oAAAAJ

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: 14 years, Teaching: 10 years, Fulbright-Doctoral Research award (DPR-12-13)
Area of Expertise: Cancer biomarkers, drug resistance, 3D cancer cell models
Email: heena.dave@nirmauni.ac.in

Research Interests: 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.

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

Dr. Aarthi Sundararajan (Assistant Professor)
Ph. D. in Microbiology, University of Tennessee, Knoxville, Tennessee, USA.
Experience: Visiting graduate student- 1 Year (David H. Smith Center for Vaccine Biology and Immunology, University of Rochester Medical Center, Rochester, NewYork, USA), Postdoctoral
Research - 6 years (Emory Vaccine Center, Emory University, Atlanta, Georgia, USA) & Indian Institute of Public Health Gandhinagar, Gujarat, India), Teaching – 2 years.
Area of expertise: Reproductive Immunology and Endocrinology, Viral Immunology, Mucosal B cell Immunology.
Email: aarthi.sundararajan@nirmauni.ac.in

Research Interest: Dr. Aarthi Sundararajan's research studies have focused on understanding mucosal B cell response in response to acute and latent infection models. In addition, she has worked in registered human vaccine clinical trials, evaluating vaccine-induced mucosal B cell response. As a DST-sponsored Women scientist and as an Adjunct Faculty at the Indian Institute of Public Health Gandhinagar, she has worked extensively in the area of Maternal and Child Health. Specifically, her research work has focused on identifying immune cells- associated unique biomarkers for early diagnosis of pre-eclampsia among pregnant women. Furthermore, she has developed a novel quartile scoring approach involving prenatal stress hormones for the prediction of poor birth outcomes such as low birth weight and adverse birth outcomes. She has also identified specific prenatal hormone associated parameters for prediction of stillbirth among pregnant women. She has been awarded the Royal Society of Tropical Medicine and Health (RSTMH) Early Career Small Grant, in collaboration with the National Institute Health Research (NIHR), United Kingdom to determine the role of maternal Toxoplasma infection in regulating developmental and behavioral outcome in infants and toddlers.

Publications:
https://scholar.google.com/citations?user=HwKqI58AAAAJ&hl=en&oi=sra

Pillars of Strength
Mr. Ronak Barot
(Jr. Office Superintendent) Administration
Mr. Valji Desai
(Assistant Librarian) Library
Mr. Parthiban S. Mudaliyar
(PA cum Stenographer)
Mr. Sachin Prajapati
(Lab Supervisor) Laboratory
Ms. Arti Verma
(Lab Assistant) Laboratory
Mr. Rajendra Patel
(Store Keeper)
Ms. Mrugani Surati
(Placement Officer)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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.