

SUNANDAN DIVATIA SCHOOL OF SCIENCE





Message from Chancellor

India has the potential to be in the global league in Sciences, be it in basic or applied sciences. There is tremendous talent, as well as resources to make sure that it is possible. All these factors, to my mind, would contribute significantly to helping India find a place in the world, in this field.

The goal of the Sunandan Divatia School of Science is to be recognized globally as a premier Institution providing quality higher education and research training.

One of the major challenges we are facing today is how to make healthcare affordable and accessible to all sections of Society. Innovation in Science is the most important parameter contributing to the discoveries, development and growth.

Further, the importance of the biotechnology industry and its prospective growth can be identified by the steps taken by the Government of India to provide financial funding and to promote public-private partnerships. As students of the School of Science, there are tremendous opportunities available to you, both in academia and industry.

I wish you success with all your initiatives and trust that you will utilize the enriching learning experience at the University, in the pursuit of excellence.

Shri Amrish Patel Chancellor

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Shri. Amrish Patel

Chancellor

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I/c Pro-Vice Chancellor

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Dean (School of Business Management)

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Dean, MPSTME

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Dean, Emeritus, ISB

Shri Pankaj R. Patel

Chairman & Managing Director, Zydus Cadila

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Sr.Vice President, SVKM

Shri T. N. V. Ayyar

Management Trustee, SVKM

Dr. Meena Galliara

Director – Center For Sustainability Management and

Social Entrepreneurship

Dr. Bala Krishnamoorthy

Associate Dean, SBM

Shri Ashish Apte

Controller of Examinations

Non Member Secretary

Dr. Meena Chintamaneni

Our Vision

NMIMS will define the 21st Century Technological, Management and Organisational Research and educate with a view to impact global developments and building a cadre of employable individuals.

Our Mission

NMIMS' mission is to provide to the nation, good quality trained human resources who are socially sensitive, have inquisitive minds and the persistence to change their own and the organisation's lives, and contribute to making India a knowledge super power and the world a better place to live.

This we seek to achieve through educational excellence, innovative and relevant research, promoting social equity and an outreach program to ensure global access of our learning resources to all students and faculty.

Our Belief

We believe that learning is most fruitful, when knowledge and expertise of individuals from various disciplines and diverse backgrounds are shared. As this provides a cutting edge to professional education, we encourage such diversity, which is reflected in the composition of the student body of the University.

We also believe that innovation is the key to progress in the modern world, so in our pursuit of excellence, we constantly upgrade and add newer areas of education and research to make our programs more relevant to the stakeholders. Most importantly, we believe that openness, participation and fairness are necessary for building a culture conducive to learning and growth.



Message from Vice-Chancellor

NMIMS has evolved as an Institution of higher learning and has achieved significant progress as a multidisciplinary University with a strong foundation of research and innovation. The rapidly changing society that we live in requires skill sets in several fields and this creates unique opportunities in various disciplines. The Sunandan Divatia School of Science was born out of the fervour and foresight of the Management with a view to address greater need for flexibility in scientific thought on an interdisciplinary plane with highly innovative and multifaceted courses.

Science and technological creativity constitute one of the most innovative disciplines today. In the relentless pursuit of excellence, I urge you students to pursue research keeping two critical aspects in mind; firstly to facilitate knowledge-based innovation, and secondly to leverage science and technology to address problems specific to the Indian context. This would in turn, enable our Nation to grow as a progressive and enlightened society and also progress in scientific and technological advancement.

No matter your chosen path, pursue your passions, even though the going may be tough and circuitous. Be aware of the inevitable changes around you and make most of the new avenues and opportunities they create. I am confident that the learning environment at the University will help realize your goals and pull you through rough situations that you may face ahead.

My best wishes to you and wish you success in all your future endeavours.

Dr. Rajan Saxena Vice-Chancellor



Message from Dean

The Sunandan Divatia School of Science aspires to be a Centre of Excellence by creating a conducive student-centric environment that supports teaching, learning, research and application of the research.

I am happy to inform you of some of the developments at the School. We have introduced a new program; 5 Year Integrated Masters program in Biomedical Science. The program is designed to develop a student's scientific, experimental and analytical skills in understanding fundamental human biology and the molecular basis of human disease. The research-intensive and laboratory-based curriculum covers contemporary subjects and is intended to meet the needs of the Biotechnology & Pharmaceutical Industry, Clinical Research Organizations and Research Institutions.

The Department of Physiotherapy, won the "Excellence in Physiotherapy" award by Medscape India 2015. This is the first initiative of its kind to encourage the finest healthcare professionals and healthcare providers in India, aiming to set a new benchmark for the healthcare industry.

We strive to make our courses more industry oriented and keep evolving our syllabus to match changing business demands. Our students of Statistics have secured excellent placements in some of the leading corporations, covering a wide spectrum of industries.

Dear Students, today is an exciting day for you. Now you are about to step out and face diverse challenges. I am sure all of you would do wonderfully well and will successfully leverage the lessons learnt at the School to make an impact. My heartfelt congratulations and best wishes to you on this momentous occasion.

One final thought – I am not going to say "goodbye"; only – "until we meet again". As an alumni, I sincerely hope you will remain connected with us and update us on your activities, both professionally and on the personal front. We will always take great pride in your accomplishments.



Dr. Aparna Khanna Dean



Profile of Chief Guest

Noshin Kagalwalla is the Managing Director of SAS Institute (India) Pvt. Ltd., the Indian subsidiary of SAS Institute Inc – a leader in business analytics and business intelligence software solutions. He is responsible for architecting the long term vision, driving sales and customer strategies and maintaining SAS' leadership position in the Big Data Analytics and Business Intelligence market in India.

Noshin joined SAS in December 2004 as part of the executive leadership team and took on the responsibility of Managing Director in October 2013. Over this period, he has significantly contributed to SAS India's growth and established SAS as a strong brand synonymous with Analytics, commanding over 50% of market share in the advanced analytics market in India.

Mr. Noshin Kagalwalla is an MBA from UCLA, an M.S. in Computer Engineering from Wright State University and Bachelors in Engineering from V.J.T.I., Mumbai. He is a veteran in the Analytics industry and has over 22 years of experience across business functions. Prior to SAS, Noshin held executive positions in multinationals such as Microsoft and TCS.

List of Participants

M.Sc. Statistics

Maitreyee Prashant Pathare

Ashna Jain

Adiba Mukhtar Ahmed Kazi Niranjan Deepak Rane Rohan Arun Shinde

Aishwarya Rajan Deshmukh Payal Bhatoa Rucha Ajit Vaishampayan

Akshita Jayant Mamania Prachi Paresh Hamlai Sanjana Lade

Bhairavi Shantishekhar Jha Pranita Natraj Sanjana Shivaji Ghadigaonkar

Harish Chandra Amarnath Mourya Princia Vaz Sapna Shivakant Tiwari

Irfan Panshaheed Mohd Priya Prakash Raikar Sourav Bhiswanath Saha

Java Mirchandani Swati Dharmendra Singh Raveena Gupta Rishikesh Dinesh Kadam

Swati Satish Mishra

Seema Yakesh Bhatia

M.Sc. Biological Sciences

Abhishek Bijoy Singh Chetan Suryakant Patil Pooja Ashwin Shukla Ketaki Subhash Shinde

Bhairavi Naresh Chavan Nivati Hemant Mudliar Shruti Gururaj Gadagakar

Master of Physiotherapy

Ashwini Eknath Kadam Kavya Kshitij Mehta Pooja Madhukar Kamble Mansi Dharmendra Doshi Shivani Prakash Pandey Bhagyashri Ramesh Sheth Forum Rakesh Kacheria Nikita Girish Suvarna Snigdha Sanat Karmokar

Nishita Kirti Rana Jigna Bharat Dagha

Ph.D. Biological Sciences

Nisha Hemant Bellare Ritu Durgaprasad Mishra Mandar Dilip Kulkarni

Nirmaladevi Jeetram Thakur Purva Sethi Rohan Narendra Shringarpure

Sapna Arun Biswas Sonam Vipen Malhotra

Ph.D. Chemistry

Keyur Deepak Panchal Krishna Prakash Deshpande Mayuri Thangaraj Pillai

Scholarships for Doctoral Students

Ms. Priyanka Mokashi, Ph.D. Biological Sciences student received the "Women Graduate Union Centenary scholarship" of Rs. 50000/- from the "Women Graduates Union" for her Ph.D. work. She was awarded the scholarship at a function organized at the Women Graduates Union Building, Colaba on 29th January 2016.

Ms. Swati Sahoo, Ph.D. Biological Sciences student received the "Dinoo Dubash Centenary scholarship" of Rs. 25000/- from the "Women Graduates Union" for her Ph.D. work. She was awarded the scholarship at a function organized at the Women Graduates Union Building, Colaba on 29th January 2016.

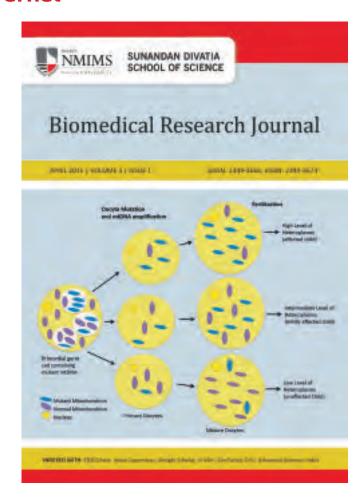
Biomedical Research Journal

A premier peer reviewed open access journal published by SDSOS, NMIMS (deemed-to-be) University, for promoting advancement of ideas in the interdisciplinary realms of Medicine, Science and Technology. The journal is well received by the professional community and the articles are cited by several authors. The journal is cited by EBSCOhost, Index Copernicus, Google Scholar, HINARI, CiteFactor, DRJI and Advanced Sciences Indes.

SDSOS published the 5th and 6th issues of 'Biomedical Research Journal', in the academic year.

The October 2015 issue editorial focused on targeted therapy highlighting treatment with the perspective of right patient, right diagnosis, right treatment. The articles were contributions from reputed scientists from Healis Sekhseria Institute of Public Health, Mumbai, ACTREC, Mumbai, Tata Memorial Hospital, Mumbai, and Benaras Hindu University, Varanasi.

The April 2016 issue highlighted biomedical research with veteran authors at Kokilaben Dhirubhai Ambani Hospital, Mumbai, ACTREC, Mumbai, BARC, Mumbai, National Institute of pathology, New Delhi, The Maharaja Sayajirao University of Baroda, Vadodara, Thermo Fisher Scientific and University of San Diego, USA.



Network / Linkages

MOU signed with Charles Darwin University, Australia and NMIMS was functionally initiated with exchange of faculty between the CDU and SDSOS, and transfer of technology in Bioinformatic Analysis. A collaborative Project was finalized between in indigenous and caucasian oral cancer patients from Australia and India. Under the faculty Exchange Program, Dr. Saranath visited CDU for finalisation of the project and Dr. Rama Jayaraj, CDU spent 15 days at SDSOS, with Dr. Saranath for discussions on the project. The project is for submission to Australian funding Agency—NHMRC.

Dr. Dhananjaya Saranath, Professor, Sunandan Divatia School of Science, Mumbai, and Dr. Rama Jayaraj, Charles Darwin University, Australia, have initiated a collaborative project between to examine the role of genomic variants in oral cancer, a high incidence cancer in both the countries. Dr. Saranath has documented and published data identifying specific SNPs in Indian oral cancer patients. In Australia, ethnically two groups — aboriginal or native Australians and the Caucasian Australians reside. Investigation of the oral cancer associated SNPs will be validated in distinct Australian

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groups, with the aim of identifying the SNPs as 'Predictive Biomarkers' across the oral cancer patients in India and Australia.

Dr. Saranath has also initiated a project with Dr. Vinutha Murthy of CDU, with expertise in Molecular Dynamics, to design drug-like small molecules for binding and stabilization of specific mutated p53 protein of pathognomic importance and functional activity, by molecular modeling. The aim is to functionally inactivate the p53 mutations through insilico strategies. Her Ph.D. scholar, Ms. Hetal Damania, will be spending a two month internship with Dr. Vinutha Murthy at CDU.

Charles Darwin University (CDU) based in the capital city of Darwin at the heart of Australia's tropical north and is Australia's closest university to Asia. It is an Australian public university with about 22,083 students. It was established in 2003 after the merger of Northern Territory University (NTU) of Darwin, the Menzies School of Health Research and Centralian College of Alice Springs and it was named after Charles Darwin, the celebrated English naturalist.



Dr. Saranath at Alan Walker Cancer Centre with Senior Medical Physicists - Dr. Rakesh Joshi and Dr. Julia Green



Part of CDU Campus

Dr. Sudeshna Chandra, Associate Professor at Sunandan Divatia School of Science, visited University of Regensburg, Germany as an "Experienced Research Scholar" for a period of three months beginning November 1, 2015. Her research stay was sponsored by Alexander von Humboldt Foundation, Germany. The primary objective of the sponsored program is to build network of scientists with cultural diversity. At University of Regensburg, Prof. Chandra was working in collaboration with Prof. Antje Baeumner, a renowned

scientist working in the area of chemo and biosensors at the Institute of Analytical Chemistry. During her short research stay, she focussed on exploring newer dendrimer based nanoparticles to develop biosensors for diagnosis of liver ailments. She used dendrimer-metal complexes to fabricate electrochemiluminescence (ECL) biosensors and assessed their performance using advanced analytical tools. It was an excellent opportunity for her to expand her research domain and build international links for student exchange programs.





Awards & Achievements

After a rigorous selection process, the jury of THE MEDSCAPEINDIA AWARDS 2015, comprising of the leaders in the Healthcare Industry & other top Corporates chose NMIMS University for the award in the category of - "Excellence in Physiotherapy".

THE MEDSCAPEINDIA AWARDS 2015, is the first initiative of its kind to encourage the finest healthcare professionals and healthcare providers in India, aiming to set a new benchmark for the healthcare industry. The dream behind this award is to create unity among medical & paramedical healthcare professionals to achieve greater heights.

Dr. Aparna Khanna, Dean, Sunandan Divatia School of Science received the award on behalf of the University, on Oct 17th, 2015.

The function was attended by Doctors, Presidents of various Medical & Paramedical Branches, Government Officials, Women Professionals, Medical Teachers, celebrities and Industrialists.

Papers / Articles published in National / International Journals during the academic year

- Sapna Biswas, Nancy Pandita, Evaluation of phytochemical constituents and chromatographic screening of alcoholic extract of Bombaxceiba Linn., Pharmanest Journal, 2231-0541, 6/ 2797-28062015, Pharmaceutical Education and Research Society.
- Sapna Biswas, Nancy Pandita, Phytochemical analysis and chromatographic evaluation of alcoholic extract of Dilleniaindica Linn. Leaves, International Journal of Pharmaceutical Sciences and Research, 2320-5148, 6/2799-2812, 2015, Society of Pharmaceutical Sciences & Research.
- Vaibhav Jadhav, Shilpee Sachar, Sudeshna Chandra, Dhirendra Bahadur, Purvi Bhatt, Synthesis and Characterization of Arsenic Trioxide Nanoparticles and Their In Vitro Cytotoxicity Studies on Mouse Fibroblast and Prostate Cancer Cell Lines, Journal of Nanoscience and Nanotechnology, ISSN: 1533-4880 (Print); EISSN: 1533-4899 (Online), Vol. 15/ In Press, 2015, American Scientific Publishers.
- 4. Delina Joseph, Shilpee Sachar, Nand Kishore, Sudeshna Chandra ,Mechanistic insights into the interactions of magnetic nanoparticles with bovine serum albumin in presence of surfactants, Colloids and Surfaces B: Biointerfaces, 0927-7765, In press, 2015, Elsevier.
- Sagar V. Chhabria Mohammad A. Akbarsha, Albert P. Li, Prashant S. Kharkar, Krutika B. Desai, In situ allicin generation using targeted alliinase delivery for inhibition of MIA PaCa-2 cells via epigenetic changes, oxidative stress and cyclin-dependent kinase inhibitor (CDKI) expression, Apoptosis, ISSN: 1360-8185, (print version), ISSN: 1573-675X, (electronic version), Volume 20,Issue 10,page 1388-1409.

- Roshani Y. Vyavaharkar, S. S. Mangaonkar, Determination of antioxidant potential of Buchananialanzan Spreng. (Chironji) seed extracts, Pharmanest – An International Journal of Advances in Pharmaceutical Sciences, 2231-0541, Volume 6 (Issue 4)/ Page No. 2964-2967, July-August 2015, Pharmaceutical Education and Research Society.
- Wendy D'Souza, Dhananjaya Saranath, Clinical implications of epigenetic regulation in oral cancer, Oral Oncology, ISSN-13688375, v. 51/ i. 12/ pp. 1061-1068, 2015, Elsevier Ltd., Elsevier BIOBASE CINAHL Current Clinical Cancer Current Contents/Clinical Medicine MEDLINE® EMBASE Research Alert SCISEARCH Science Citation Index Scopus Global Health.
- Shaleen Multani, Dhananjaya Saranath, Gene polymorphisms and oral cancer risk in tobacco habitués, Tumor Biology, 1010-4283 (print) 1423-0380 (online), In press, 2015, Springer.
- Sagar V., Chhabria, Krutika B. Desai, Purification and Characterisation of alliinase produced by Cupriavidusnecator and its application for generation of cytotoxic agent: Allicin, Saudi Journal of Biological Sciences, 1319-562X, In Press doi:10.1016/j.sjbs.2016.01.003, January 2016, Elsevier.
- 10. Jadhav V, Ray P, Sachdeva G, Bhatt P, Biocompatible arsenic trioxide nanoparticles induce cell cycle arrest by p21WAF1/CIP1 expression via epigenetic remodeling in LNCaP and PC3 cell line, Life Sciences, ISSN: 0024-3205, Volume 148, 1 March 2016, Pages 41–52, (doi:10.1016/j.lfs.2016.02.042 2016, Elsevier, Thomson Reuters Indexed.

- 11. Gita G. Singh, Role of FDI in Urban and Rural Development, Urban & Rural Development : Challenges & opportunities, 978-93-83587-26-1, 141-144, September 2015, Ajanta Prakashan.
- Juilee Patwardhan, Purvi Bhatt, Ultraviolet-B protective effect of flavonoids from Eugenia caryophylata on human dermal fibroblast cells, Pharmacognosy Magazine, Print 0973-1296, Online 0976-4062, 11; 44(3): 397-406, 2015, Phcog.Net, Thomson Reuters Indexed.
- Patwardhan J, Bhatt P, Flavonoids derived from Abelmoschusesculentus Attenuates UV-B Induced Cell Damage in Human Dermal Fibroblasts through Nrf2-ARE Pathway, Pharmacognosy Magazine, ISSN: Print -0973-1296, Online - 0976-4062, In Press, Feb 2016, Wolters Kluwer - Medknow Publications, Thomson Reuters Indexed.
- Sagar V. Chhabria, Krutika B. Desai, Purification and Characterisation of alliinase produced by Cupriavidusnecator and its application for generation of cytotoxic agent: Allicin, Saudi Journal of Biological Sciences, 1319-562X, January 2016, Elsevier.
- 15. Jadhav V, Ray P, Sachdeva G, Bhatt P, Biocompatible arsenic trioxide nanoparticles induce cell cycle arrest by p21WAF1/CIP1 expression via epigenetic remodeling in LNCaP and PC3 cell lines, Life Sciences, ISSN: 0024-3205, Volume 148, 1 March 2016, Pages 41–52, 2016, Elsevier.
- 16. Patwardhan J, Bhatt P, Flavonoids derived from Abelmoschusesculentus Attenuates UV-B Induced Cell Damage in Human Dermal Fibroblasts through Nrf2-ARE Pathway, Pharmacognosy Magazine, ISSN: Print -0973-1296, Online - 0976-4062, In Press, Feb 2016, Wolters Kluwer - Medknow Publications.

- 17. Kargutkar S, Brijesh S. , Anti-rheumatic activity of Ananascomosus fruit peel extract in complete Freund's adjuvant rat model, Pharmaceutical Biology, 1744-5116, In Press, 2016, Taylor & Francis.
- Thakkar M, Brijesh S, Combating malaria with nanotechnology-based targeted and combinatorial drug delivery strategies, Drug Delivery and Translational Research, 2190-3948, In Press, 2016, Springer.
- Raut A, Khanna A, Enhanced expression of hepatocyte-specific microRNAs in valproic acid mediated hepatic trans-differentiation of human umbilical cord derived mesenchymal stem cells, Experimental Cell Research, 0014-4827, In Press, 2016, Elsevier.
- Thakkar M, Brijesh S., Opportunities and Challenges for Niosomes as Multiple Drug Delivery Systems for Combination Therapy, Current Drug Delivery, 1875-5704, In Press, 2016, Bentham Science.
- 21. Swati Chitrangi, Prabha Nair, Aparna Khanna, Three Dimensional Polymer Scaffolds for Enhanced Differentiation of Human Mesenchymal Stem Cells to Hepatocyte-like Cells: A Comparative Study, Journal of Tissue Engineering and Regenerative Medicine, 1932-7005, In Press, 2016, Wiley.
- 22. Dani KK, Oswal K, Maudgal S, Saranath D, Perception of young adults toward hookah use in Mumbai, Indian Journal of Cancer, 0019-509X, Volume 52, Issue 4, Pg 694, October-December 2015, Indian Cancer Society and Indian Society of Oncology.

Summer Internship Projects

Name of the Programme: Integrated M.Sc. Ph.D. & M.Sc. Biological Sciences

Name of Students	Organization / Company	Title of Project	Guide
Seema Bhatia	Kokilaben Hospital	Validation and comparison of active B12(holotranscobalamin) and total B12 (cobalamin)	Dr. Barnali Das
Bhairavi Chauhan	Centre for Genetic Healthcare	Technique FISH and Karyotyping	Dr. Hema Purandarey
Shruti Gadagkar	Centre for Genetic Healthcare	Technique FISH and Karyotyping	Dr. Hema Purandarey
Ashna Jain	IPCA Labs	Detection and quantification of ADH in Mycobacterium species	Dr. UmeshLuthra and Nishtha Singh
Niyati Mudliar	BARC	Aggregated induced emission of a molecular rotor and its application in protein sensing	Dr. Prabhat Singh
Ketaki Shinde	BARC	Acetyl choline induced off/on fluorescence switch in p-sulfocalix-4-arene encapsulated acridine dye: photochemical and pKa shift	Dr. Mhejabeen Sayed
Shreya Pathak	IPCA Labs	Isolation and characterization of Tinosporacordifola	Dr. Umesh Luthra and Nishtha Singh
Chetan Patil	Metropolis	Extensively Drug reisitant Tuberculosis	Pratiksha Chedda
Shreya Dhume	Metropolis	Ig Vh mutation analysis for prognosis of chronic lymphocytic leukemia	Pratiksha Chedda
Divya Desai	IIT Bombay	Study of pERK expression under TNF alpha stimulation in mammalian cell lines	Dr. Ganesh Viswanathan & Miss Sonal Manohar
Vrundali Shinde	Galderma India	Perspective and Primer impact assesment and feedback	Dr. Santosh Taur
Abhishek Singh	Barking Deer	Brewery and fermentation	Gregory Kroitzsh
Amruta Parmar	Lifecare Diagnostics	Demographic analysis of haemoglobin and vitamin B12 in the semi urban population of Mumbai city	Praful Mishra and Jaya
Aishwarya Shetty	Lifecare Diagnostics	Demographic analysis of testosterone and Blood sugar in the semi urban population of Mumbai city	Praful Mishra and Jaya
Pooja Shukla	SM foods	Quality Check department	Mrs. Jayashree

Name of the Programme: M.Sc. Statistics

Name of Students	Organization / Company	Title of Project	Guide
Princia Vaz	L&T Electrical Automation	Data Analytics & Reduction in Process time of SAP complaint tickets Procurement Spend Data Analysis	Mr. Ashish Malik & Harshal Kumar
Maitreyee Pathare	L&T Electrical Automation	Data Analytics & Redution in process time of SAP complaint tickets Procurement of spend data analysis	Mr. Ashish Malik & Harshal Kumar
Bhairavi Jha	L&T Electrical Automation	Data analysis of IT functionality survey across L&T	Mr. Ashish Malik & Harshal Kumar
Pranita Natraj	L&T Electrical Automation	Improving L&T EAIC profitability by procurement spend optimization Sales trend data analysis for Electrical Standard Products	Mr. Ashish Malik & Harshal Kumar
Rohan Shinde	L&T Electrical Automation	 Improvement of Customer Relationship Management database Quantify the effect of Sales mix on Profitability Procurement Spend Data Analysis 	Mr. Ashish Malik & Harshal Kumar
Hemant Chilap	L&T Electrical Automation	 Building a model for forecasting Sales of Electrical Standard Products in the Agriculture Segment Quantify the effect of rescheduling the Order Board of Electrical Systems & Equipments 	Mr. Ashish Malik & Harshal Kumar
Harish Mourya	L&T Electrical Automation	Building a model for forecasting Sales of Electrical Standard Products in the Agriculture Segment Quantify the effect of rescheduling the Order Board of Electrical Systems & Equipments	Mr. Ashish Malik & Harshal Kumar
Raveena Gupta	Economic Intelligence Unit, Sales tax dept.	RevenueForecasting	Mr. Pramod Dumre
Rishikesh Kadam	Economic Intelligence Unit, Sales tax dept.	Revenue Forecasting	Mr. Pramod Dumre
Rucha Vaishampayan	Economic Intelligence Unit, Sales tax dept.	Prediction of Hawala (non-genuine) dealers in Maharashtra	Mr. Pramod Dumre
Adiba Kazi	Economic Intelligence Unit, Sales tax dept.	Prediction of Hawala (non-genuine) dealers in Maharashtra	Mr. Pramod Dumre
Swati Singh	Economic Intelligence Unit, Sales tax dept.	Segmentation & Classification of Hawala (Non Genuine) & Non Hawala Dealers	Mr. Pramod Dumre

Name of Students	Organization / Company	Title of Project	Guide
Harshada Salunke	Economic Intelligence Unit, Sales tax dept.	Segmentation & Classification of Hawala (Non Genuine) & Non Hawala Dealers	Mr. Pramod Dumre
Payal Bhatoa	Nielsen Data Science	Universe Estimation of E-commerce players in India Relationship between Purchase Behaviour and Store Characteristics	Ms. Simran Roy
Swati Mishra	Culture Machine	Data Science Project (You tube video Analysis)	Mrs. Madhuchhanda Das
Aishwarya Deshmukh	Reserve Bank of India	Effect of Capital Structure on Profitability: An Exploratory Study of Indian Non- Government Non-Banking Public Limited Companies.	Dr. Anil Kumar Sharma
Jaya Mirchandani	Reserve Bank of India	Basel guidelines vis-a-vis Banks in India	Dr. Anil Kumar Sharma
Sanjana Ghadigaonkar	UltramaxInfonet technology pvt. ltd.	SGM sales analysis and forecasting.	Ms. Sheetal Rambade
Sanjana Lade	UltramaxInfonet technology pvt. ltd.	DTE analysis creating Heirarchy, word cloud using Visual Analytics SAS	Ms. Priti Mehta
Irfan Mohd.	Axion Connect	Revenue forecasting	Mr. Tarun Soni
Suman Patel	Axion Connect	Revenue forecasting	Mr. Tarun Soni
Priya Raiker	Galderma India	Galderma aesthetic and corrective business analysis	Mr. Prasad Bhandari
Niranjan Rane	Galderma India	 Field Resource Deployment for the prescription business of the company. A deep analysis on allotment of Market representatives, Sales and Stockists appointed from 2014 	Mr. Prasad Bhandari
Sourav Saha	Minacs Analytics	Employee retention (HR Analytics)	Ms. Madhumita Ghosh
Sapna Tiwari	Minacs Analytics	Employee retention (HR Analytics)	Ms. Madhumita Ghosh
Prachi Hamlai	Future Generali	Determining factors affecting Loss Ratio	Mr. Prashant Chikhal
Akshita Mamania	Future Generali	Determining factors affecting Loss Ratio	Mr. Prashant Chikhal

Institute / Corporate Projects : M.SC. Statistics Part II

Project: M.SC. STATISTICS PART II Participated In	Organization / Company	Name of Student
Portfolio risk management - a case of motor insurance	Future Generali	Prachi Hamlai
Portfolio risk management - a case of motor insurance	Future Generali	Rohan Shinde
Portfolio risk management - a case of motor insurance	Future Generali	Maitreyee Pathare
Fraud Analytics in Health Insurance	tata aig	Jaya Mirchandani
Fraud Analytics in Health Insurance	tata aig	Bhairavi Jha
Network Planning for 4G	IDEA	Payal Bhatoa
Network Planning for 4G	IDEA	Pranita Natraj
Network Planning for 4G	IDEA	Swati Mishra
Prediction of Probable Hawala Dealers	MST	Raveena Gupta
Prediction of Probable Hawala Dealers	MST	Rishikesh Kadam
Prediction of Probable Hawala Dealers	MST	Harshada Salunke
Automobile Industry Analytics	Minacs Analytics	Sourav Saha

Contest Participated In	Organization / Company	Name of Student
Automobile Industry Analytics	Minacs Analytics	Akshita Mamania
Automobile Industry Analytics	Minacs Analytics	Sapna Tiwari
Axis bank home loans - a new approach for strategy refinement	Axis Bank	Aishwarya Deshmukh
Axis bank home loans - a new approach for strategy refinement	Axis Bank	Sanjana Ghadigaonkar
Axis bank home loans - a new approach for strategy refinement	Axis Bank	Sanjana Lade
Development of Application Scorecard for two wheeler vehicles	HDFC Bank	Priya Raikar
Flow Model Building and Monitoring	HDFC Bank	Princia Vaz
Flow Model Building and Monitoring	HDFC Bank	Swati Singh
Flow Model Building and Monitoring	HDFC Bank	Harish Chandra Mourya
Predicting Customer Churn in Mobile Telecommunication	Reliance Communications	Rucha Vaishampayan
Predicting Customer Churn in Mobile Telecommunication	Reliance Communications	Niranjan Rane
Predicting Customer Churn in Mobile Telecommunication	Reliance Communications	Adiba Kazi

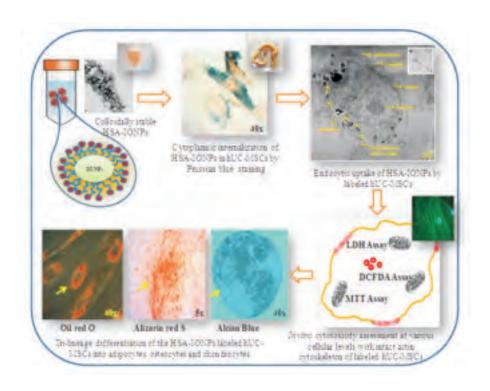
Selected Research Projects

SYNTHESIS AND CHARACTERIZATION OF NOVEL NANOPARTICLES AND STUDIES ON THEIR INTERACTIONS WITH STEM CELLS

Purva Sethi, Dr. Aparna Khanna.

Human umbilical cord derived mesenchymal stem cells (hUC-MSCs) are known for self-renewal and differentiation into cells of various lineages like bone, cartilage and fat. They have been used in biomedical applications to treat degenerative disorders. However, to exploit the therapeutic potential of stem cells, there is a requirement of sensitive non-invasive imaging techniques which will offer the ability to track transplanted cells, bio-distribution, proliferation and differentiation. In this study, we have analyzed the efficacy of human serum albumin coated iron oxide nanoparticles (HSA-IONPs) on the differentiation of hUC-MSCs. The colloidal stability of the HSA-IONPs was tested over a long period of time (20 months) and the optimized concentration of HSA-IONPs for labeling the stem cells was 60µgml-1. Detailed in vitro assays have been performed to ascertain the effect of the nanoparticles (NPs) on stem cells. Lactate dehydrogenase (LDH) assay

showed minimum release of LDH depicting least disruptions in cellular membrane. At the same time, mitochondrial impairment of the cells was also not observed by 3-(4,5-dimethylthiazol-2-yl)-2,5diphenyltetrazolium bromide (MTT) assay. Flow cytometry analysis revealed lesser generation of reactive oxygen species in HSA-IONPs labeled hUC-MSCs in comparison to bare and commercial IONPs. Transmission electron microscopy showed endocytic engulfment of the NPs by the hUC-MSCs. During the process, the gross morphologies of the actin cytoskeleton were found to be intact as shown by immunofiuorescence microscopy. Also, the engulfment of the HSA-IONPs did not show any detrimental effect on the differentiation potential of the stem cells into adipocytes, osteocytes and chondrocytes, thereby confirming that the inherent properties of stem cells were maintained. A pictorial representation of the work is given below:



CHEMICAL SYNTHESIS OF SELENIUM NANOPARTICLES AND THEIR APPLICATION IN RHEUMATOID ARTHRITIS

Sonam Malhotra, Dr. Krutika Desai

Rheumatoid arthritis (RA) is a chronic inflammatory poly arthritis of unknown etiology. It affects 1% of the world population with a higher occurence in women as compared with men. Various studies indicate; involvement of reactive oxygen species and other free radicals as mediators of tissue damage and inflammation of joints via numerous pathways. Increasing evidences for the role played by free radicals suggest that antioxidant therapy may represent an alternative or additional approach along with anti arthritic drugs. Selenium(Se) have long been advocated for the treatment of RA, osteoarthritis and other inflammatory arthritis. Although, Se possesses potential as a micronutrient supplement for the treatment of RA, the dose and chemical form play an important role in bio availability, toxicity, and biological property. Alternatively, Selenium nanoparticles (SeNP) can be studied for its reduced toxicity and can be a potential antioxidant the rapeuticagent in the treatment of RA.

In the present study dextrin stabilized selenium spherical nanoparticles have been successfully synthesized from a simple and a wet chemical approach. A biocompatible reducing agent, ascorbic acid was used for synthesizing selenium nanoparticles (SeNP) from sodium selenite at room temperature. A ratio of 4:1 of ascorbic acid and sodium selenite with stirring at 1000 rpm maintained a particle size of 27nm±2.6nm. These nanoparticles were stabilized by coating with 10% dextrin and size of these nanoparticles was 64nm±0.158nm. The morphology and purity of the synthesized nanoparticles were analysed using various analytical tools such as particle size analyser, UV-Visible spectrophotometer, X-ray diffraction, Raman spectroscopy, SEM and TEM. The colloidal stability of

these particles was checked at different pH values of pH 3.0, pH 7.4 and pH 9.0. These particles were found to be most stable at pH 7.4 at 4°C even after 1½ years. Dextrin-SeNP when interacted with NIH-3T3 cells showed 15% cytotoxicityat 100 mg/mL whereas, bulk Se showed 95% at the same concentration Hence, coated nanoparticles were used in all further studies. SeNP at 250 mg/mL showed protective effect on DNA. Interaction of SeNP with BSA showed increase in quenching of BSA fluorescence. SeNP did not show any sub acutetoxicity at concentration as high as 5 mg/kg b.w. in Wistar rats.. Antiarthritic study was carried out for 21 days on 42 male Wistar rats using Freunds Complete Adjuvant model. The animals were divided into 7 groups (6 animals/group) such as Normal Control, Arthritic Control, Pre dnisolone treated (10mg/kg b.w.) & SeNP. Selenium Nanoparticles in a concentration range such as 100, 250, 500, 750µg/kg b.w. were used for study in rat model.. The animals were monitored for various parameters such as increase in paw volume, C-Reactive Protein and Prostaglandin E, from Serum, anti-oxidant enzyme such as Superoxide Dismutase, Catalase, Glutathione Peroxidase from various tissues such as liver, kidney and spleen. SeNP at a concentration of 250 mg/kg b.w. acted as potent antiinflammatory agent and significantly reduced(p<0.05) arthritis induced parameters. The enzymatic antioxidant levels in liver, kidney, and spleen were restored significantly(p<0.05) at 500 mg/kg b.w. while CRP was regained to normal at concentration of 100 mg/kg b.w. concluding SeNPat 500 mg/kg b.w. can be a potential anti arthritic drug supplement. In future, combination studies of the drugs and SeNP at different concentrations can be carried out which will help in reduction of the doses of the steroidal drugs hence reducing their side effects.

SEM & TEM images of dextrin coated nanoparticles





Effect of selenium nanoparticles on chronic inflammatory arthritis







Arthritic control



Prednisolone treated



500μg SeNP



750 μgSeNP

STANDARDIZATION OF EXPRESSION AND PURIFICATION OF ANTIBODY FROM PER IPLASMIC EXTRACT AND SOLUBLE SUPERNATANT IN ESCHERICHIA COLI

Chetan Patil, Dr. Debjani Bhar and Dr. Kafil Ahmed (Glenmark Pharmaceuticals Ltd.)

Production of recombinant proteins in bacterial systems has revolutionized the bio-pharmaceutical industry. There is a need to have a standardized, robust, and reliable method that gives sufficient yield of recombinant proteins when produced in *E. coli*. The expression of the antibody as a recombinant protein in *E. coli* forms the basis of this project.

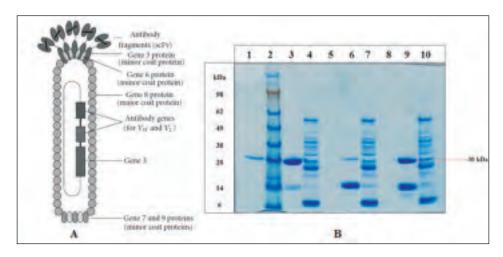
The expression of antibodies using phage display is a novel technique in which the antibodies are displayed as a fusion protein on the coat of filamentous phage. The antibodies displayed on the phage are selected by incubation with a specific antigen followed by infection of TG1 E. coli strain. In this host, the phagemid multiplies and produces the fusion antibody fragment (antibody fused with pIII, phage coat protein). Another host, HB2151 is a non-suppressor strain and releases the antibody in the supernatant and periplasm instead of producing fusion protein.

It is important to have a validated method in place to get efficient concentration of antibody from clones that need to be screened with further downstream assays such as ELISA and FACS. Thus, method for purification and expression of antibody from *E. coli* was validated using

three parameters, viz. effect of culture volume, effect of 0.4 M sucrose and antibody concentration purified from supernatant and per iplasm of HB2151 cells.

Initial screening was done using ELISA to find positive binders in TG1 cells followed by plasmid DNA isolation and sequencing. Post sequencing, plasmid DNA from 6 unique clones was used for transformation of HB2151 cells and the transformed HB2151 cells were used for protein expression studies. The expression of antibody gene was induced using IPTG followed by purification of antibody from the per iplasm and supernatant using protein-A affinity chromatography. The protein fractions with maximum concentrations were analyzed on SDS-PAGE and ELISA. The expression of antibody from all 6 clones was maximum in the per iplasm than compared to the supernatant and culture volume of 100 ml gave maximum expression. There was no effect of 0.4 M sucrose in expression of antibody from per iplasm.

In this way the parameters were standardized so as to get sufficient yield of the antibody in bacterial system and have a standard robust platform for the future clones to be screened more efficiently.



- A: Structure of a filamentous phage displaying antibody fragments (scFv) on its surface.
- **B:** SDS PAGE to compare purified and crude fractions for expression of antibody (~30 kDa) from periplasmicextract of unique clones.

DESIGN AND DEVELOPMENT OF CRISPR TOOLS FOR GENE TARGETING / SILENCING IN BACTERIA

Ketki Shinde, Dr. Chitra Misra (BARC, Mumbai)

CRISPR CAS SYSTEM is an efficient and cost effective tool for genome editing and silencing and is widely used these days. It is also being tested as an anti-microbial agent and is a novel approach to treating diseases. A disease of great relevance to our country is tuberculosis. There are various treatments and vaccines available for treating MT, but a major problem that has surfaced is that of resistance to these drugs due to mutations in the genome. New drug

development endeavors have not been successful and the core of the problem is still rapidly mutating strains. CRISPR based tools offer an effective mechanism to target these mutations such that the pathogen becomes drug sensitive. Such an approach was attempted by developing a tool for targeting *rpoB* mutations, leading to Rifampicin resistance in *M. tuberculosis* in the work reported here.



Figure: Restriction digestion of pST2K and pST-KiT was performed and 20 μl of each was loaded on 1% agarose gel. (Lane1: intact pST2k plasmid, Lane2: restriction digested pST2k plasmid, Lane3: restriction digested pST-KiT plasmid, Lane4: 100 bp ladder, Lane5:1kb ladder)

CORRELATION OF HYPERMOBILITY ON BALANCE IN CHILDREN WITH DOWN SYNDROME

Shivani Pandey, Dr. Poonam Parulekar

Background - In children with Down syndrome due to genetic mutation at chromosome 21 there are chemical changes taking place in protein structure leading to lax ligaments and hence hypermobilty. Ligaments provide stability and proprioceptive feedback, which are essential components to maintain balance, which is essential to carry out activities of daily living.

Aim and Objective - To find out correlation of hypermobility on balance in children with Down syndrome.

Procedure - Screening of the patients for inclusion criteria was done and an informed consent was taken from the parents. Children were assessed for hypermobility using Beighton score and balance was assessed using Pediatric balance scale.





BEIGHTON SCORE

Results and conclusion - The data obtained was analyzed using Pearson correlation test in SPSS version 20. The study showed that there is strong inverse correlation of hypermobility on balance in children with Down syndrome which was statistically significant with p value 0.01.

EVALUATION OF GAIT USING EDINBURGH VISUAL GAIT SCALE IN PATIENTS UNDERGOING TOTAL KNEE REPLACEMENT

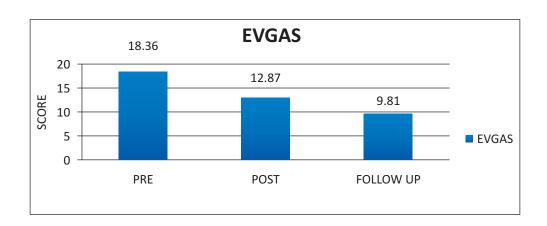
Kavya Mehta, Dr. Mansi Bhartiya

Introduction: Osteoarthritis is a degenerative condition in which patients have pain, static postural instability and gait instability. If gait instability exists, total knee replacement is treatment of choice which will improve pain and gait instability. The kinetic, kinematic and electromyographic quantitative analysis is considered by literature the gold standard of the gait assessment but observational gait analysis is more feasible in the clinical setup. In order to standardize, quantify and systemize gait analysis Read et al.developed a scale for observational gait analysis, the Edinburgh Visual Gait Scale (EVGS) for use in cerebral palsy.

Objective: The objective of this study is to assess if EVGS can be used for gait assessment in patients who have undergone knee replacement surgery.

Method: 34 patients diagnosed to have osteoarthritis were recruited. The patients were evaluated preoperatively, post operatively and at one month follow up using EVGS and Knee Society Score (KSS) and pre and at one month follow up for KOOS. The obtained data was analysed statistically using paired t—test for KOOS and three-way ANOVA for EVGS and KSS with level of significance <0.05

Results: The study showed statistical significance for EVGS and KSS at pre op, post op and one month follow up (p=0.000). Also a statistical significance was seen in all the sub-domains of KOOS.



Conclusion: KOOS and KSS being reliable and valid scales for OA and TKR showed statistical significance so did EVGS. Hence it can be concluded that EVGS can be used as a tool for gait analysis in patients with OA and TKR.

SOCIAL MEDIA ANALYTICS: BRAND POSITIONING FOR AUTOMOBILE INDUSTRY

Sapna Tiwari, Sourav Saha, Akshita Mamania, Internal Mentor: Dr. Sunita Mall

In present scenario, everyone is aware of the stiff competition among the automobile industries which are focusing attention in capturing the market. And it is also evident that the advents of the real-time information networking sites like Twitter & Facebook have spawned the creation of an unequalled public collection of opinions about every global entity that is of interest. So from automobile industry point of view, to be a successful marketer it becomes essential to study the area of Automobile Consumer Behaviour for which this project was undertaken.

The purpose of this project was to apply data mining and text analytics to social media to identify key themes in the data for which the business objectives were listed as:

- To study the perceptions and problems of the prospective buyers and track the drivers of those perceptions.
- To benchmark and find the pattern among those drivers with respect to the customer reviews .
- To determine the actions required to meet the customer's need after better understanding of customer's perception.

To achieve the above mentioned objectives, customer reviews were extracted from social media platforms like Facebook and Twitter and techniques like Natural Language Processing, Sentiment Analysis, Word Clouds, Association Rule Mining and Perceptual Mapping were employed to analyze the extracted reviews using R programming language and Python.

Then based upon the findings and results certain strategies were recommended to the companies to meet the customer's need so as to make their position strong in automobile industry.

From this project, one can infer that the determination of sentiment is a crucial step towards converting unstructured content to structured content so that the companies can spot trends and patterns within the content. It paves the way for brand monitoring, brand marketing, studying customer preferences and brand positioning. Thus, the project explained and investigated the importance of sentiment analysis for the growth of a brand on the social media platform. It also discussed about how a brand can make an optimum use of sentiment analysis and perceptual mapping for reviving or enervating its market.



Honda Positive Sentiments Word Cloud

Paper Presentations at International / National Conferences

Name of the author(s)	Presenting author	Title of the paper	Name of the conference	Organising body	Date/Year	Venue of the conference
Sagar Chhabria & Dr. Krutika Desai	Sagar Chhabria (awarded best poster)	Inhibition of pancreatic cancer cell line (MIA PaCa-2) by a novel approach: InsituAllicin generation using targeted Allinase delivery	Society of Biological Chemists (India) Mumbai Chapter Meeting	National Institute for Research in Reproductive Health	August 22, 2015	NIRRH
Vaibhav Jadhav & Purvi Bhatt	Vaibhav Jadhav (poster)	Arsenic trioxide nanoparticle induces p53 dependent apoptosis in PC-3 cells via epigenetic remodelling and p21Waf1/Cip1 expression	Society of Biological Chemists (India) Mumbai Chapter Meeting	National Institute for Research in Reproductive Health	August 22, 2015	NIRRH
Delina Joseph, Nand Kishore, Sudeshna Chandra	Delina Joseph (poster)	Probing Magnetic Nanoparticles Core/Shell Interactions: Spectroscopic Insights	Nanospectros copy for Two dimensial materials	COST (European Cooperation in Science and Technology)	September 08- 10, 2015	TU Chemnitz, Germany
Shaleen Multani, Dhananjaya Saranath	Shaleen Multani (poster)	Single nucleotide polymorphism as predictive biomarker in oral cancer	Global Cancer Summit	Indian Institute of Science (IISC)	November 18- 20, 2015	IISC, Bangalore
Wendy D'Souza and Dhananjaya Saranath	Wendy D'Souza	Single Nucleotide Polymorphisms in ANKRD17, SAMD4A, POLE, CTSB and UBE2E2 in Oral Cancer	Joint ISMPO ISO Conference 2015- Indian Data & Practical Recommendat ions (Biennial national conference of indian society of medical and paediatric oncology and indian society of oncology)	Indian society of oncology	Nov 06- 08, 2015	Mumbai

Name of the author(s)	Presenting author	Title of the paper	Name of the conference	Organising body	Date/Year	Venue of the conference
Swati Chitrangi	Swati Chitrangi	Three Dimensional Polymer Scaffolds for Enhanced Differentiation of Human Mesenchymal Stem Cells to Hepatocyte-like Cells: A Comparative Study	6th Indian Scientists association in Japan Symposium on Recent Advances in Science and Technology	Indian Scientists association in Japan	December 04, 2015	Indian Embassy, Tokyo, Japan
Shaleen Multani, D Saranath	Shaleen Multani (awarded 1st prize for excellence in bio-research for poster presentation)	Single nucleotide polymorphisms in RASGRP3, GRIK2, PREX2 and TGFBR2 as predictive biomarkers in oral cancer	The Sajjan Gupta Konark Memorial 6th Research Meet	Konark group	January 15, 2016	Wilson College
Samira Kargutkar, Brijesh S	Samira Kargutkar (awarded consolation prize for poster presentation)	In vitro and in vivoanti- inflammatory activity of different parts of Ananascomosus	The Sajjan Gupta Konark Memorial 6th Research Meet	Konark group	January 15, 2016	Wilson College
Miloni Thakkar, Brijesh S	Miloni Thakkar (awarded the excellence in research and development for poster presentation)	Formulation and in-vivoanti-malarial activity of drug co-loaded niosomes	The Sajjan Gupta Konark Memorial 6th Research Meet	Konark group	January 15, 2016	Wilson College

Student participation in Scientific conferences / Workshops

Name of the conference/workshop	Organizing Body	Name of Student/s	Programme / Year / Div	Date
Workshop on Mulligan's Manual Therapy	Capri Institute	Nikita Suvarna, Bhagyashree Sheth, Nirali Shah	MPTh 2 nd Year	August 06- 13, 2015
Hands on Seminar on Primus and introduction of Eccentron	H. N. Reliance Foundation Hospital	Kavya Mehta, Bhagyashree Sheth	MPTh 2 nd Year	September 10, 2015
Debate competition- Direct cash transfers are better option than subsidy to reduce poverty in India.	NMIMS School of Economics Shastrath 2015	Farhan Shaikh & Darpan Shah	B.Sc. (Applied Statistics & Analytics) FYBSc	September 12, 2015
2 nd International conference on "Advanced Techniques & Applications of Mass Spectrometry"	Select Biosciences India Pvt. Ltd.	Nishant Salunke, Neil Murali & Pritesh Halder	M.Sc. & Ph.D. Chemistry	November 19- 20, 2015
Mumbai MUN Conference	NMIMS University Mukesh Patel School of Engineering and Technology Management	Farhan Shaikh	B.Sc. Applied Statistics & Analytics- FYBSc	February 19- 21, 2016

Faculty invited as Chief Guest, Keynote Speaker, Chairperson, Participant of a Session

Faculty Name	Name of the Programme	Title of the Talk	Date	Place	Organising Body / Institute	Role Played
Dr. Aparna Khanna	Cancer Patients Aid Association	'Winners in Life Awards for Cancer Patients' and 'Nightingale Award for Nurses in Oncology Wards'	August 07, 2015	Mumbai	Cancer Patients Aid Association	Chief Guest
Dr. Mansi Bhartiya	Lecture Session on Health	Fitness & Ergonomics	September 08, 2015	Mumbai	J. P. Morgan & CO	Invited Speaker
Dr. Mansi Bhartiya	Lecture Session on Health	Fitness & Ergonomics	September 11, 2015	Mumbai	J. P. Morgan & CO	Invited Speaker
Dr. D Saranath	£ 10 Million Longitude Prize, Antimicrobial Resistance and How to win	-	October 16, 2015	IITB	British High Commission	Chair Person
Dr M Bhartiya	Lecture Session on Health	Health talk on Fitness & Ergonomics	October 23, 2015	Mumbai	J P Morgan & CO	Invited Speaker

Visits by Faculty

Name of the Faculty Member	Name of the Conference	Date	Place	Organising Body / Institute
Dr. Mansi Bhartiya	Lecture Session on Health	July 24, 2015	Mumbai	J P Morgan & CO, Malad
Dr. Aparna Khanna	Winners in Life Awards for Cancer Patients & Nightingale Award for Nurses in Oncology Wards	August 07, 2015	Mumbai	Cancer Patients Aid Association
Dr. D Saranath	Winners in Life Awards for Cancer Patients & Nightingale Award for Nurses in Oncology Wards	August 07, 2015	Mumbai	Cancer Patients Aid Association, Mumbai
Dr. Mansi Bhartiya	Lecture Session on Health	August 07, 2015	Mumbai	J P Morgan & CO, Malad
Prof Sunil Shirvaiker	Careers in Statistics	August 08, 2015	Thane	Dnyanasadhana College of Arts, Commerce and Science
Dr. Purvi Bhatt	Society of Biological Chemists (India) Mumbai Chapter Meeting	August 22, 2015	NIRRH, Mumbai	National Institute for Research in Reproductive Health (NIRRH)
Dr. Aparna Khanna	Society of Biological Chemists (India)' Mumbai Chapter Meeting	August 22, 2015	Mumbai	National Institute for Research in Reproductive Health
Prof Sunil Shirvaiker	Annual HR Summit	September 15, 2015	Mumbai	OPPI(Organisation for Pharmaceutical producers of India)
Dr Brijesh Sukumaran	Open Day	December 04, 2015	Navi Mumbai	Advanced Centre for Training, Research and Education in Cancer (ACTREC)
Sudeshna Chandra	Institute Seminar	January 15, 2016	Regensburg, Germany	Universität Regensburg, InstitutfürAnalytisc heChemie, Chemo- und Biosensorik
Sudeshna Chandra	Group Seminar	January 19, 2016	Regensburg, Germany	Universität Regensburg, InstitutfürAnalytisc heChemie, Chemo- und Biosensorik

Name of the Faculty Member	Name of the Conference	Date	Place	Organising Body / Institute
Prof. Sunil Shirvaiker	25th Annual Market Research Seminar - "Glory to the Game Changers"	February 15- 16, 2016	Hotel Westin Mumbai Garden City, Goregaon, Mumbai.	Market Research Society of India
Dr D Saranath	International Workshop on Cancer Awareness, Prevention, Screening and Early Detection for SAARC nations	February 29- March 03, 2016	Delhi	Delhi State Cancer Institute, Delhi, and UICC, Geneva
Dr D Saranath	Scientific Advisory Council	March 11, 2016	Noida	Institute of Cytology and Preventive Oncology, Noida
Dr D Saranath	Symposium – TB Threat: Lessons Learnt	March 29, 2016	Mumbai	NCPA Mumbai
Dr. Aparna Khanna	Discussion held with University of West Minister for 5 Years Integrated MSc Biomedical Science.	April 18, 2016	Delhi	University of West Minister, Delhi
Prof. Sunil Shirvaiker	BASE SAS & VISUAL ANALYTICS	May 9, 2016 to May 19, 2016	Mumbai	SVKM/NMIMS & SAS Institute India

Guest Lectures

Name of Guest Speaker	Topic	Date of Lecture
Dr. Vandana B. Patravale, Professor of Pharmaceutics, ICT, Matunga, Mumbai	Novel Cationic Heterolipid: A Tojan Horse for Drug Delivery	August 08, 2015
Mr. Sandeep Sailli Clinical Specialist, M.Sc. Physiotherapy, BCRT herapie	BCR - Therapy	August 22, 2015
Dr. Vidita Vaidya Associate Professor, Department of Biological Sciences, Tata Institute of Fundamental Research, Mumbai	Early Life and the programming of Psychopathology	September 02, 2015
Mr. Debopam Chadhuri Vice President & Chief Economist Zyfin Research Foundation	Statistical Analysis of Indian Capital Market	September 19, 2015
Prof. D. Bahadur Institute Chair Professor Department of MEMS IIT Bombay	Magnetic nanohybrids for in vivo therapy for cancer	October 15, 2015
Dr. A. K. Srivastava Department of Chemistry, University of Mumbai, Mumbai	Development of Electrochemical – Sensors and Supercapacitors based on functional nanocomposite materials	October 15, 2015
Dr. Chandrasekhar Haramaghatti Research and technology centre, Asian Paints Ltd. Mumbai	Raman and Small angle neutron scattering techniques for structure and dynamics of micelles of cationic surfactants	October 15, 2015
Dr. Shilpa Sawant Chemistry division, BARC, Mumbai	Conducting Polymer Thin Films for Biosensing Application	October 15, 2015
Dr. Haridas Pal Chemistry Division, BARC, Mumbai	Supramolecular Modulation in Chromophoric Properties and Applications	October 15, 2015
Prof. Nandkishore Department of Chemistry, IIT Bombay	Rational drug design: Calorimetric and spectroscopic advances	October 16, 2015
Prof. C. P. Rao Department of Chemistry, IIT Bombay	Analytical applications of the conjugates of calyx[4,6] arenes: A thorough study by spectroscopy and microscopy	October 16, 2015
Prof. T. G. Gopakumar Department of Chemistry, IIT Kanpur	Tunneling Spectroscopy: A Tool for Understanding Electronic and Geometric Structure of Molecules at Surfaces	October 16, 2015

Name of Guest Speaker	Торіс	Date of Lecture
Dr. K. Vanaja Visweshwara Institute of Pharmaceutical Sciences, Bangalore	Lipid Based Nano Drug Delivery Systems and their Therapeutic Applications	October 16, 2015
Dr. K. C. Barick Chemistry Division, BARC, Mumbai	Interfacial Engineering of Magnetic Nanoparticles for Therapeutic Applications	October 16, 2015
Dr. Evans Coutinho Bombay College of Pharmacy, Mumbai	"Determining structures of October 16, 2015 peptides by NMR and molecular modelling methods	
Dr. K. S. Lokesh Department of Chemistry Srikrishnadevaraya University, Bellary	N4 macrocycle and metal oxide nanosheet to improve the performance of PEMFC fuel cell	October 17, 2015
Dr. Kuntal Chakrabarti MPSTME, NMIMS	Highly Efficient Electromagnetic Interference Shielding using Graphite Nanoplatelet / PEDOT:PSS Composite with Enhanced Thermal Conductivity	October 17, 2015
Dr. Musthafa Muhammed IISER Pune	New Trends in Rechargeable October 17, 2015 Batteries and Proton Exchange Membrane Fuel Cells	
Dr. Sudha Srivastava Department of Chemical Sciences TIFR, Mumbai	NMR : A Versatile Tool, Application To Cell Metabolism October 17, 2015	
Dr. Ankona Datta Department of Chemical Sciences TIFR, Mumbai	Fluorescent Sensors for Tracking October 17, 2015 Bio-molecules in Live Cells	
Dr. Purnima Karia	Stroke Rehabilitation December 23, 2015	
Dr. Pallavi Karnik Principal Scientist, Biogenomics Limited	Cell culture and its applications: January 11, 2016 An Industrial Perspective	
Mr. Nandkishore Rawat Founder, Cytel	Industry expectations from young Statisticians February 27, 2016	
Dr. Ravindra Shetty Patent Attorney and Advocate.	Patent & its Impact	March 10, 2016
Dr. Ravindra Shetty Patent Attorney and Advocate.	Patent & its Impact	March 10, 2016

Workshops Conducted

SANKHYIKI

This Year 2015 - 16, Sunandan Divatia School of Science organized Sankhyiki on 20th and 21st November, 2015. A two-day workshop "Sankhyiki" on '*Campus to Corporate: Career in Statistics and Analytics*'. During this workshop, a series of lectures had been organized, along with panel discussion and Campus to Corporate training program for students of Statistics.

Total 207 participants participated in this workshop. (113 – College students, 31 – Industry, Academics and Alumni, 63 – SDSOS students)

113 enthusiastic students of Statistics from various colleges of Mumbai participated in this two day workshop. These students represent some of the most forward looking, progressive colleges in Mumbai such as Bhavans' College, RJ College, Ruparel College, Ramnarain Ruia College, B. N. Bandodkar College of Science, Khalsa College, K. J. Somaiya College, Sathaye College, Government College Aurangabad, Abasaheb Garware College Pune, Pune University among others.

The program was inaugurated by the Chief Guest Mr. Jairam Sridharan, President - Retail Lending & Payments, Axis Bank Ltd. "Statistics & Data Science – The New Differentiator".

Panel Discussion was moderated by **Prof. Sunil S. Shirvaiker,** Associate Professor - Statistics, Sunandan Divatia School of Science. The Panel Members were distinguished members of different sectors - **Ms. Geeta Zankar**, Vice President – Data Assembly and Science, Karvy Insights, **Mr. Jitendra Tawde**, Asst. General Manager Operations International Business Division, Godfrey Phillips India Ltd., **Ms. Madhumita Ghosh**, Practice Leader - Advanced Analytics, IBM India Pvt. Ltd. The scope of Analytics and the future scope of Statistics was discussed

Sankhyiki 2015 was co-sponsored by SAS, Ultramax and Cartesian Consulting.



OPEN DAY

Sunandan Divatia School of Science (SDSOS), organized a three day event "OPEN DAY" from 3rd -5th December 2015 to provide an opportunity for students currently studying in final year BSc to visit SDSOS to see the various instruments, research activities and learn about the different courses available at the school. The Open Day was attended by 518 students from colleges including KC College, Jaihind College, Sathaye College, Ruia College, Sophia College, National College, Wilson College, Thakur College, Mithibai College, Bhavan's College Andheri, Vaze College, St. Xavier's college, , SIWS, SIES, Kelkar college to name a few. Students were from various streams including Microbiology, Chemistry, Biotechnology, Botany, Zoology, Life Sciences and Pharmaceuticals. The event was spread over 6 sessions, 2 on each day and it started with welcome and introductory speech by Dr. Dhananjaya Saranath and Dr. Nancy Pandita. Contemporary research at SOS includes Stem cells, Neuroscience, Translational cancer research, Medicinal plant, nanotechnology, Microbiology & Biotechnology, Translational phytochemistry and Analytical Chemistry. During the event, senior students of SOS conducted hands-on demonstrations and showcased several interesting protocols towards innovative research at SDSOS. Each demonstration was of 10-15 minutes and it highlighted the state-of- the art technology used in research in respective areas. Students from various colleges got an opportunity to walk through our various labs that include Molecular Biology lab, Microbiology lab, Instrumentation, Phytochemistry and Analytical Chemistry laboratories. Excellent feedback was received from the students and faculties who attended the event.



A FIVE DAY CELL CULTURE AND MOLECULAR BIOLOGY WORKSHOP

Conducted from 11-15th January 2016 at Sunandan Divatia School of Science (SDSOS). This course was designed as a stepping stone to educate and train participants who were new to mammalian cell culturing systems or as a refresher course in cell culture and molecular biology techniques. The workshop was second in the series and included a guest talk, informal lectures and hands-on sessions. The guest speaker Dr. Pallavi Karnik, Principal Scientist, Biogenomics Limited gave a talk on "Cell culture and its applications: An Industrial Perspective". This was followed by talk by Dr. Purvi Bhatt, Assistant Professor, SDSOS. The contents of the workshop were as follows: Cell culturing techniques; Maintenance and subculturing of cells; Preservation and cell revival; Cytotoxicity assays (MTT assay); Cell death Assays: based on morphology (Acridine orange/Ethidium bromide staining) and based on Molecular Techniques (Western Blot, DNA laddering); Real time PCR & Immunofluorescence staining. There was an overwhelming response to attend this workshop and in all there were 16 participants from Academia / Hospitals / Industry: Sir HN Hospital, Nair Hospital, Hinduja Hospital, Accutest Global, SPP-SPTM, BNCP, Thakur college to name a few. The workshop was partially supported by Eppendorf, Chargen Life Sciences, Bhavi Chem and C. Abhaykumar & Co. Ltd. The students were greatly benefitted and appreciated the five day workshop.

CONTINUING PHYSIOTHERAPY EDUCATION IN THE INTENSIVE CARE UNIT

The department of Physiotherapy organized Continuing Physiotherapy Education in the Intensive Care Unit on 6th February 2016. The event consisted of lecture series by eminent speakers and discussed the latest trends in ICU Physiotherapy. The event was inaugurated by Dr. Rajan Saxena, Dr. Aparna Khanna and Dr. Ali Irani. The Chief Speaker for the event was Dr. Seemi Retharekar, Associate Professor & Head of Department, Cardiopulmonary Physiotherapy, Sancheti College of Physiotherapy, Pune. The other speakers for the event were Dr. Mariya Jiandani, Associate Professor, Seth GS Medical College & KEM Hospital, Dr. Sushil Gadekar, Chief Intensivist, Nanavati Super Speciality Hospital, Dr. Ankit Shah, Consulting Radiologist, KS Hospital and Dr. Poonam Parulekar, Assistant professor, SDSOS. The event received an enthusiastic response from students of various colleges in Mumbai and Pune.

RECENT ADVANCES IN SPECTROSCOPY AND ANALYTICAL TECHNIQUES

Department of Chemistry, SVKM's NMIMS Sunandan Divatia School of Science organized the National Seminar on "Recent Advances in Spectroscopy and Analytical Techniques" from 15th to 17th October 2015. The Seminar was designed to highlight the latest developments in the area of Electrochemistry, Spectroscopy, Phytochemistry and Nanosciences. The seminar brought together experts, scholars and researchers from different parts of the country on a common platform to deliberate and discuss the emerging trends and challenges in the above areas.

The technical program of the seminar included 17 invited talks, 8 oral presentations by students and around 25 contributed papers as posters. The plenary talk was delivered by Prof. D. Bahadur, Emeritus Professor, Indian Institute of Technology Bombay. Talks by Prof. T. G. Gopakumar (IIT Kanpur), Dr. Ankona Dutta (TIFR), Prof. A. K. Srivastava (Mumbai University), Prof. C. P. Rao and Prof. Nandkishore (IIT Bombay) were highly valued and appreciated by the students. Poster awards were given to young researchers and the first prize were given to Mr. Anish Gomatam of Bombay College of Pharmacy for his work on "Conformational Study on Pheromonotropin neuropeptide using NMR and Molecular Dynamics".

The National Seminar was supported and sponsored by NMIMS University and co-sponsored by Department of Science and Technology (DST), and Board of Research in Nuclear Sciences (BRNS), Department of Atomic Energy, Govt. of India. We also received sponsorships from private industries like Sinsil International Ltd., Aimil Ltd. and Science4u Analytics and Research Solutions Pvt. Ltd., which is gratefully acknowledged.

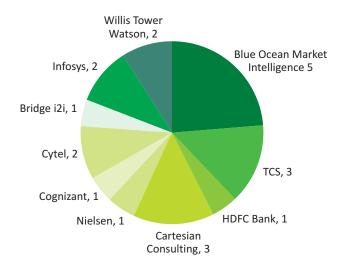


Placements

Final Placements & Summer Internships - M.Sc. Statistics

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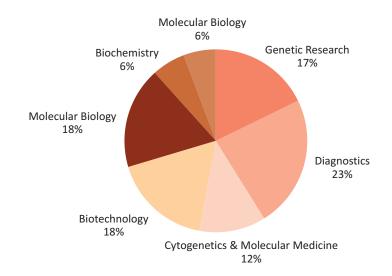


Final Placements & Summer Internships - M.Sc. & Ph.D. Biological Sciences and M.Sc. & Ph.D. Chemical Sciences



SECTOR-WISE FINAL PLACEMENTS & SUMMER INTERNSHIP

BIOLOGICAL SCIENCE



Academia of Sunandan Divatia School of Science

Core Faculty		
Name of faculty	Discipline	Qualification
Dr. Aparna Khanna, Dean	Biological Sciences	B.Sc., M.Sc., Ph.D.
Dr. Dhananjaya Saranath, Professor	Biological Sciences	B.Sc., M.Sc., Ph.D., FMAS.
Dr. Nancy Pandita, Professor	Chemistry	B.Sc., M.Sc Ph.D.
Mr. Sunil Shirvaiker, Associate Professor	Statistics	B.Sc., M.Sc., DMM
Mr. Sanjiv Walavalkar, Advisor Corporate Relations	Statistics	B.Sc., PGDBM
Dr. Sudeshna Chandra , Associate Professor	Chemistry	B.Sc., M.Sc., Ph.D.
Dr. Anshula Pandey, Associate Professor	Statistics	B.Sc., M.Sc., Ph.D.
Dr. Purvi Bhatt, Assistant Professor	Biological Sciences	B.Sc., M.Sc., Ph.D.
Mrs. Leena Kulkarni, Assistant Professor	Statistics	B.Sc., M.Sc., M.Phil
Dr. Brijesh Sukumaran, Assistant Professor	Biological Sciences	B.Sc., M.Sc., PGDCR, Ph.D.
Dr. Harinder Singh, Assistant Professor	Biological Sciences	B.Sc. (Hons.)-Microbiology, M.ScBiotechnology, Ph.DMicrobiology
Dr. Prasad Pethe, Assistant Professor	Biological Sciences	B.Sc., M.Sc., Ph.D.
Dr. Mansi Bhartiya, Assistant Professor	Physiotherapy	MPTh
Dr. Poonam Parulekar, Assistant Professor	Physiotherapy	MPTh



Visiting Faculty		
Name of faculty	Affiliation	
Dr. Ahmad Ali	Assistant Professor, University Department of Life Sciences, University of Mumbai	
Mr. Akshay Dixit	Education Consultant, Education - India SAS Institute (India) Pvt. Ltd.	
Mr. Amit Gupta	Co-Founder: Active Finance Catalyst & Advisor	
Dr. Anjana Saha	Independent Researcher	
Dr. Aparna Deshmukh	Associate Professor & Head,Department of Biotech, Thakur College	
Dr. Asha Chitnis	Consulting Pediatric Physiotherapist	
Dr. Devangee Mehta	Clinical Physiotherapist, Department of Physiotherapy & Sports Medicine, Nanavati Super Speciality Hospital	
Dr. Evans Coutinho	Professor and Head, Pharmaceutical Chemistry Department, Bombay College of Pharmacy	
Ms. Hemal Thakker	Co-Founder, Finstat Academy Principal Consultant - Analytics, Sankhya Analytical Research Pvt. Ltd. Consultant - Senior Catastrophe Modeler, Sutherland Global Services	
Dr. Kalpana Phal	Associate Professor, Department of Statistics, B. N. Bandodkar College	
Dr. Krishnapriya Mohanraj	Professor and Head, Department of Pharmaceutical Analysis, Bombay College of Pharmacy	
Dr. Krutika Desai	Associate Professor, Department of Microbiology, Mithibai College	
Dr. Lokesh Bhatt	Assistant Professor, Bhanuben Nanavati College of Pharmacy	
Dr. Manju Bhatia	Clinical Occupational Therapist, Department of Physiotherapy & Sports Medicine, Nanavati Super Speciality Hospital	
Dr. Manjusha Deshpande	Visiting Faculty, Mumbai University	
Mr. Mukesh Doshi	Director, POCL	
Ms. Namrata Sahu	Consultant, Market Research	
Ms. Nazima Munshi	Assistant Professor, Institute of Intellectual Property Studies (IIPS), NMIMS	
Mr. Nikhil Gadewal	Scientist, Bioinformatics, ACTREC	
Prof. Prasad Patki	Vice Principal, Bhavan's College	
Dr. Priti Jadiya	Clinical Physiotherapist, Kokilaben Dhirubhai Ambani Hospital	
Dr. Sangeeta Vasudeva	Hon. Asst. Clinical Physiotherapist, Department of Physiotherapy & Sports Medicine, Nanavati Super Speciality Hospital	
Mr. Sanket Amdekar	Senior Executive, Reliance General Insurance	
Dr. Shaila Deshmukh	Ex- Head, Department of Statistics, K. C. College	
Dr. Shatarupa Sinha	Scientist, Mumbai	
Dr. Snehal Deshpande	Director, Sneh Rehabilitation	
Mr. Veerendra Anchan	Assistant Professor, S. M. Shetty College of Management	
Dr. Y K Lahir	Adjunct Professor, Department of Biophysics, University of Mumbai	

Administration

Dr. Rajan Saxena Vice Chancellor

Dr. Debashis Sanyal I/c Pro-Vice Chancellor

Dr. Meena Chitamaneni Registrar

Ashish Apte Controller of Examinations

Meeta Shah Psychologist & Counsellor

Alka Shukla Deputy Controller (Examinations)

Anjali Barmukh Deputy Registrar (Admissions)

Varuna Saxena Deputy Registrar (Academics)

Khyati Bhatt Deputy Registrar (HR & Personnel)

Finance

Karuna Bhaya Finance Controller Ermegilda Goes Chief Accountant

Public Relations

Ashish Tambe Public Relations Officer

Computer & Information Technology

Executive (Systems In-charge)

Namita Terse Web Administrator

Corporate Relations & Placements

Shobha Pai Director- Placement
Arti Karamchandani Placement Executive

Library

Shivanand Sadlapur Librarian

Varsha More Reference Librarian

Sunandan Divatia School of Science

Dr. Aparna Khanna Dean

Academic Administration

Mr. Vinod Malap Course Coordinator

Ms. Ashita Dara Coordinator (Statistics)

Ms. Manasi Naik Assistant

Ms. Madhuri Khanolkar Laboratory Assistant

Mr. Amol Kanade Computer Lab Assistant

Student Speak

Journey with Sunandan Divatia School of Science has been filled with numerous learning experiences. The institute inculcated a sense of leadership, self-independence, responsibility in me. At SDSOS, I developed a mindsetof critical thinking, which assisted me throughout my research work and certainly will help in my future endeavors. I express my respect and gratitude to all my teachers for their generous help and guidance. Also best wishes to all my friends at SDSOS.

Thakur Nirmla Devi Ph.D (Biological Science)

NMIMS was akin to my true companion for a journey of five long years. The quality education and discipline I learned from this institution and its eminent faculty was immense and cannot be described in few words. The institute as a whole has given me tremendous opportunities to nurture myself and develop my research aptitude in every possible way. I was always given a free and liberated environment to imagine, think and cultivate any idea but was never dejected or disheartened by any type of failure. The interdisciplinary approach followed in this institution makes it a vulnerable combination of unique experiences, viewpoints and broaden horizons. There are many more reasons to be a part of this emerging institution which always gives me a sense to cherish my experience with this institution.

Purva Sethi Ph.D (Biological Science)

'It is my pleasure and source of pride and honour to be a part of the prestigious NMIMS, School of Science where all the faculty members are so strongly dedicated in making themselves, their students and SOS community as a whole the pillar of higher education.

NMIMS, SOS has not only helped me in developing the perfect instinct but has also helped me in making myself more presentable through academics as well as the pragmatic experience gained while working on live industrial projects.

I was never a diamond with brilliance but these two years have definitely given me some brilliant cuts inculcating in me the sense of leadership, self-independence and responsibility which would prove to be a landmark in my career.

The MSc. Statistics course offered here makes students well prepared no lesser than a management student for the corporate world. I have a lot to mention in my card but I would just end this up by saying that I have been a great beneficiary of the quality education offered by SOS and would recommend this institute to any young student looking for a right place to study Statistics.'

Sapna Tiwari MSc. Statistics The MSc Statistics program of SDSOS is so designed that it gives you the right taste of the corporate through the summer internship and also through the 6 months project. Though it may seem that this course emphasizes just on industrial applications of statistics, over the course of 2 years, I have realized that there is a perfect balance maintained between theory of Statistics which is essential too since it's a MSc Statistics course. Infact it was not just a course where we were just taught Statistics and it's applications, I would like to call it a personality development training as the 2 years at SDSOS have really shaped me as better and smart corporate ready individual.

It hank the amazing faculty of Statistics Department at NMIMS SDSOS for grooming and shaping my career really well.

Aishwarya Rajan Deshmukh MSc. Statistics

These two years in Sunandan Divatia School of Science have been an awesome experience of growing into something better. It's not only confined to the theory and practical knowledge in Biological Science that we received, but it holds as the overall betterment that will definitely be useful in life. The credit of all this goes to the entire staff (teaching and non-teaching staff) of School of Science and their help and support and the positive outlook that kept us going. Not to forget their strictness towards us, but I suppose it is needed sometimes. In a gist I would say that the time spent in School of Science has been really memorable and will be cherished long way.

Seema Y. Bhatia M.Sc Biological Science

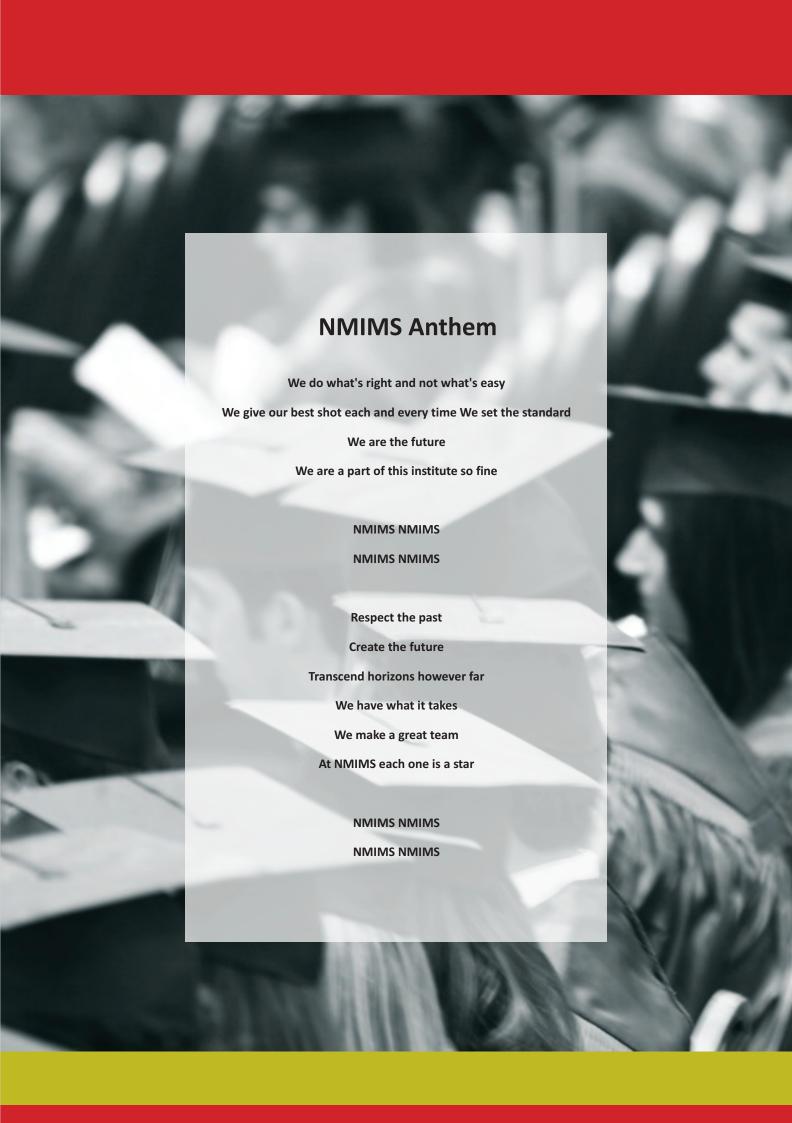
As we are moving ahead in post graduate life, it is essential to thank those who supported and helped us throughout our 2 years of journey. NMIMS Sunandan Divatia School of Science provided us the foundation on which we are going to build our future and move ahead.

It provided us with the theoretical knowledge which is an essence to skill based education and the patient exposure provided in Nanavati Super Speciality Hospital sharpen our hands on techniques and skills. To add on, the cherry on the cake was the soft skill lectures which helped us learn professional ethics and improved our communication skills. The fantastic cultural programme brought out the fun and creative side in each one of us from the regular routine. Nmims not only showed us the right path but also guided us to our destination by providing us with placement committee.

Finally I would like to thank our mentors our professors Dr.Mansi Mehta, Dr.Poonam Parulekar and Dr.Prachi Shah who stood like pillars and protected and guarded us throughout the journey.

Dr.Alilrani Sir enlighten our path with his great experience and skills. Guest lectures and Visiting faculty helped us in updating with recent techniques. NMIMS Sunandan Divatia School of Science was overall a learning experience in all aspects. Continue to do the same. Thank you for all of it.

Dr. Shivani Prakash Pandey MPT, Neurosciences



Narsee Monjee Institute of Management Studies

(Declared as Deemed to be University under Section 3 of the UGC Act, 1956)

3rd Floor, Bhaidas Sabhagriha Building, Vile Parle (West), Mumbai - 400 056. Tel: (91-22) 42355958/59 | Fax: (91-22) 26114512

Email: admssions.sos@nmims.edu | Web: www.nmims.edu