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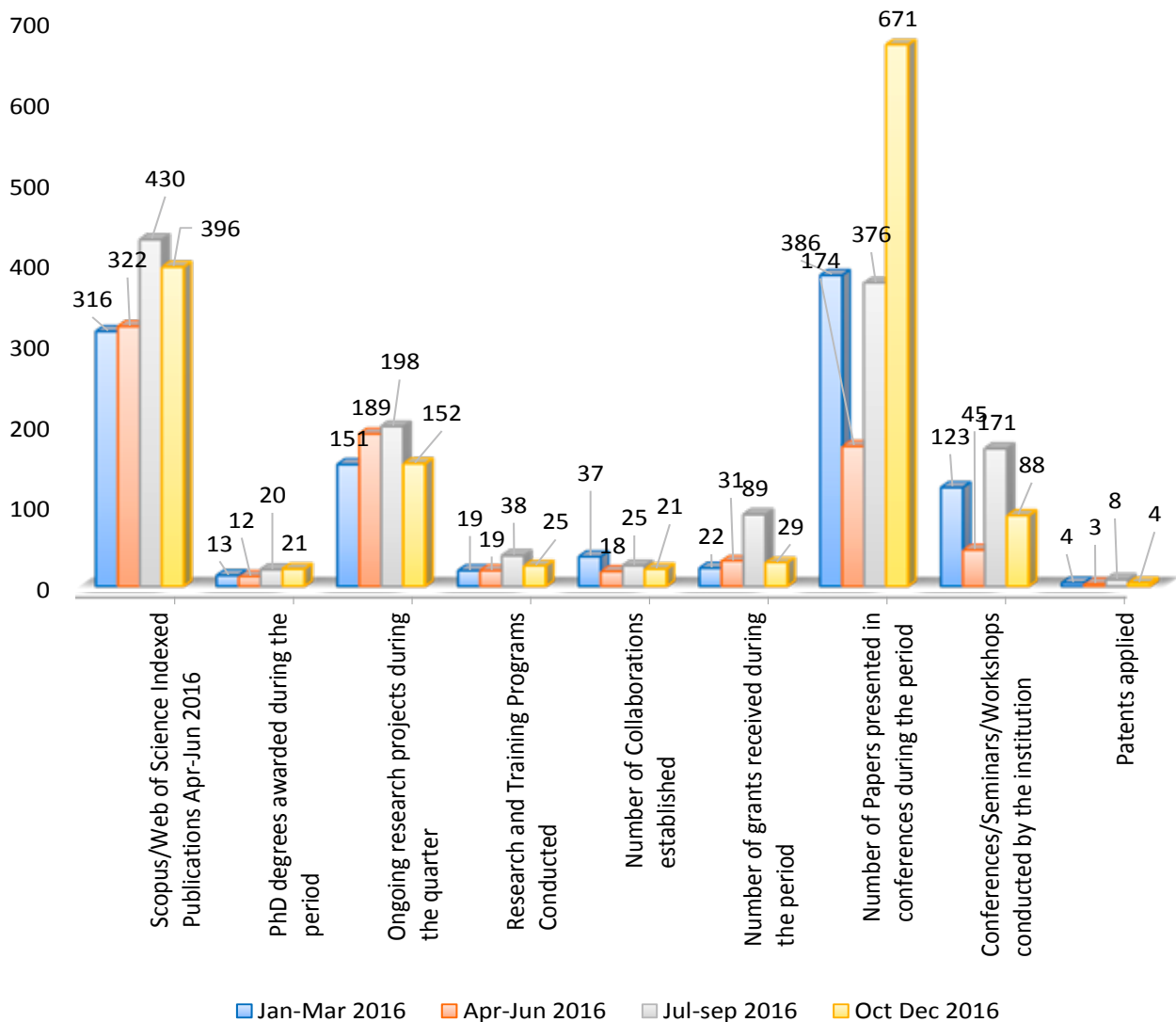
# Part I



Manipal University (MU) is one of the premier universities in India. MU considers both academics and research equally important for the betterment of an institution. The faculty members and the research scholars at MU have embraced the research culture. They publicize their research work in scientific publications, through presentations in various conferences and obtaining patents, research grants etc. In this report, we present to you **an overview of the research activities** at Manipal University during the period from **Oct-Dec 2016**.

## A. Details of research activities of Manipal University for the period Oct-Dec 2016

### Research Activities during the period Oct-Dec 2016





## **B. Faculty Achievements**

1. Dr Ravindra Prabhu A, Professor and HoD, Nephrology, was awarded Kenneth Warner price from Cochrane Colloquium 2016, for review of high methodological quality from developing country in 2015.
2. Research project guided by Dr Nayanatara Arunkumar, Associate Professor of Physiology for a student named Mr Nandan Padmanabha (MBBS Student Batch 2014) has been selected for an oral presentation at the Leiden International (bio-) Medical Student Conference 2017 from 15 to 19 March 2017 at the Netherlands and has been awarded travel grant for the same.
3. The International Union of Biochemistry and Molecular Biology (IUBMB) awarded Dr Rajesh R, Miami 2017 Winter Symposium Travel fellowship. He was given the waiver of the symposium registration, to attend and present the research abstract titled, "Evaluation of sulphonylurea induced cardiovascular events in Diabetic patient in comparison with non sulphonylurea at south Indian teaching hospital." Award was given at 50th Miami 2017 Winter Symposium; Diabetes: Today's Research-Tomorrow's Therapies, 22 to 25 January 2017, Hyatt Regency, Miami, USA.
4. Dr Kamalesh D Mumbrekar, Assistant Professor at the Department of Radiation Biology and Toxicology, School of Lifesciences (SOLS), Manipal University has received the Young Scientist Award for his work on, "Cancer risk profiling with DNA damage and repair parameters" at the International Conference on Radiation Biology (ICRB-2016), on the theme of "High LET radiation biology and complex natural products in Biology and Medicine," held at SRM University, Chennai, during 9 to 11 November, 2016. He received the award from Dr Chandra Prabha (Director Health Sciences), SRM University. This work was guided by Dr B S Satish Rao, Professor and Head, Department of Radiation Biology and Toxicology, SOLS, Manipal University, Manipal.
5. Ms Trupti Amit Kinjawadekar, Associate Professor, Faculty of Architecture, Manipal University received the Best Research Paper award for her presentation on, "Comparative study of diagrid structures for effective application of structural systems in high rise construction" in International Conference on Technological innovations in Engineering held on 15-16 December 2016 at Pune, India.



6. Dr Padma Rani, Professor, School of Communication, Manipal was invited as a visiting professor to the Technische Hochschule Nuremberg Georg Simon Ohm, Nuremberg, Germany from 24 November to 9 December 2016. She delivered lectures for the Bachelor program of Technical Journalism. She also delivered a public lecture on “Women in India.”
7. Nerve24, a Mumbai based integrated digital healthcare company confirmed the association of Dr Girish Pai K (Faculty of Pharmaceutics) and Dr Girish Thunga (Faculty of Pharmacy Practice), Manipal College of Pharmaceutical Sciences, as Honorary Advisors on December 12th 2016. Dr Girish Pai K facilitated the collaboration with Nerve24 and subsequently, Nerve24 entered into a strategic memorandum of understanding (MoU) with Manipal University in September 2016.

### **C. Achievement by research scholars**

1. Ms Suma Prabhu won the Best Paper Award for her oral presentation titled, “Polymeric magnetite nano composites of geldanamycin against breast cancer by vanquishing normal cell toxicity,” at the International Conference on radiation biology (ICRB-2016), on the theme of “High LET radiation biology and complex natural products in Biology and Medicine” held at SRM University, Chennai during 9 to 11 November, 2016. She is a structured PhD research fellow at the Department of Radiation Biology and Toxicology, SLS, Manipal University, Manipal and working under the guidance of Prof B S Satish Rao, Associate Director of Research and Head, Department of Radiation Biology and Toxicology, SLS, Manipal University, Manipal.

## Part II



### a. Featured Scientist of Manipal University

#### **Professor Gopal Pande**

Director–School of Regenerative Medicine  
Bengaluru

Dr Gopal Pande has worked at the Centre for Cellular and Molecular Biology (CCMB), Hyderabad for 32 years and superannuated in January 2015. He obtained his PhD from the Cancer Research Institute, Mumbai in 1981 and had earlier education at Delhi University. In CCMB, he studied the interaction of integrins with the cell matrix molecules and the role of extracellular matrix in determining the differentiation of stem cells and making new biomaterials for applications in the field of orthobiologicals. Dr Pande is an expert in developing good manufacturing practice (GMP) facilities for stem cell research and biosafety level 3 and 4 labs, and has been in several government appointed committees. He has guided six PhD students and 15 postgraduates. To his credit, he has over 65 research papers and three patents.

#### **Dr Pande's research interests include:**

- (a) Cellular and molecular heterogeneity in a rat, for ascitic hepatoma with specific reference to regulation of cell division in tumour cells
- (b) Role of integrins in regulation of growth of tumour cells and normal cells
- (c) Differentiation of normal and leukaemic myeloid leukaemia cells
- (d) Developmental biology of Dictyostelium discoideum with special reference to the role of intracellular calcium and cell cycle
- (e) Cell cycle of Entamoeba histolytica
- (f) Stem cell biology
- (f) Tissue engineering

Dr Pande's basic expertise is in cell biology. He has worked in three to four different areas related to cell biology namely cytogenetics, cell matrix interactions, cancer cell biology, stem cell biology of blood, bone and liver tissues, and tissue engineering of scaffolds with cell free matrices.

According to him, "The journey has been very exciting and fulfilling, although much more needs to be done." Much has changed during his course of three and a half decades of scientific career, both in teaching methods and in the technical knowledge base. He believes that the use of electronic media and internet has brought in an information revolution, which needs to be channelized more effectively into good quality publications and into making new products and services that would be useful for research as well as for societal benefits.



Dr Pande's message to the young scientists is that they should work with a sense of total dedication and be willing to do personal sacrifices because very often the monetary benefits in this field are not commensurate with the physical and intellectual effort that are put into it. They should know that the process of scientific discovery is in itself exciting and intellectually satisfying and it can be the best reward for their labour. They should also be made aware that it is possible to exploit scientific discoveries and knowledge for commercial and business purposes and they should therefore develop entrepreneurial and managerial skills along with the academic knowledge if they wish to take the benefits of their research to commercialization. Above all, they should be made aware that maintaining high standards of scientific ethics and integrity should be paramount in all endeavours.

Dr Pande wishes to establish more projects and goal oriented teaching programs, where the ratio of time spent on lectures vs laboratory work /project preparation is no more than in the ratio of 40 to 60. The students should be exposed to the latest methodologies in specialised fields in a "hands-on" manner and they should be evaluated for their performance, based upon the goals that they achieve during their course and not on the basis of memory recall exams done only at the end of the course. It is however, necessary that they should be up to date with the basic principles and current state of knowledge in their disciplines. For this, they should be given the basic and advanced elective lectures to increase their understanding of the subject and expand their knowledge.

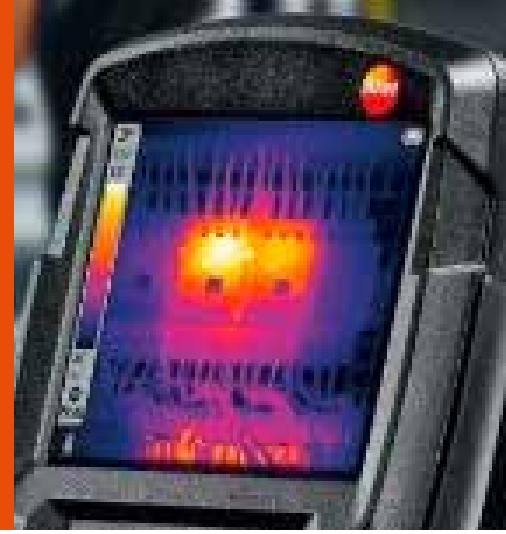
#### a. Top publications from Oct-Dec 2016

Title of the Publication	Author Name	Institution	Department	Name of the Journal	Month and Year of Publication	1-Yr Impact Factor
Biallelic loss of proprioception-related PIEZO2 causes muscular atrophy with perinatal respiratory distress, arthrogryposis, and scoliosis	Andrea Delle Vedove, Dr Girisha K M, Dr Anju Shukla, Malavika H, and Brunhilde Wirth	University of Cologne, Manipal University	Genetics, Medical Genetics	American Journal of Human Genetics	Nov 2016	10.794
Elevated homocysteine levels in type 2 diabetes induce constitutive neutrophil extracellular traps	Manjunath B Joshi, Dr Satyamoorthy Kapaettu, Guruprasad Baipadithaya, Aswath Balakrishnan, Manik Vohra, Rayees Ahamed, Shivashankara K Nagri, and Lingadakai Ramachandra	School of Life Sciences, KMC, Manipal	Ageing Research, Medicine, General Surgery	Scientific Reports	Nov 2016	5.228



Title of the Publication	Author Name	Institution	Department	Name of the Journal	Month and Year of Publication	1-Yr Impact Factor
Unravelling the association between genetic integrity and metabolic activity in pre-implantation stage embryos	Fiona D Souza, Shivanand Pudakalakatti, Ms Shubhashree U, Sujithraj Salian, Dr Guruprasad Kalthur, Renu Pasricha, Divya Appajigowda, H S Atreya, and Dr Satish Kumar Adiga	KMC, Manipal, Indian Institute of Sciences Bangalore, NCBS, Bangalore	NMR Research Centre, Obstetrics and Gynaecology	Scientific Reports	Nov 2016	5.228
In vivo evaluation of two Thiazolidin-4-one derivatives in high sucrose diet fed to pre-diabetic mice and their modulatory effect on AMPK, Akt and p38 MAP Kinase in L6 cells	Jayesh Mudgal, Priya Shetty, Neetinkumar D Reddy, H S Akhila, Karthik Gourishetti, Geetha Mathew, Pawan G Nayak, Nitesh Kumar, Anoop Kishore, Nampurath G Kutty, Krishnadas Nandakumar, Rekha R Shenoy, Chamallamudi M Rao, Alex Joseph, Kiran Kamath, Arkal Vittal Hegde, and K Balakrishna Rao	Manipal College of Pharmaceutical Sciences	Pharmacology, Pharmaceutical Chemistry	Frontiers in Pharmacology	Oct 2016	4.418
A quality by design approach on polymeric nanocarrier delivery of gefitinib: Formulation, in vitro, and in vivo characterization	Dr Lalit Kumar, Mrs Ruchi Verma, Dr Girish Pai K , and K S Navya Sree	Manipal College of Pharmaceutical Sciences	Pharmaceutics, Pharmaceutical Chemistry	International Journal of Nanomedicine	Dec 2016	4.32
Nanostructured lipid carriers for the topical delivery of tretinoin	Vivek Ghate M, Dr Shaila Angela Lewis, Prabhakara Prabhu, Akhilesh Dubey, and Nilkumar Patel	Manipal College of Pharmaceutical Sciences, Sreedevi College of Pharmacy, Mangalore	Pharmaceutics	European Journal of Pharmaceutics and Biopharmaceutics	Nov 2016	3.975

## Part III



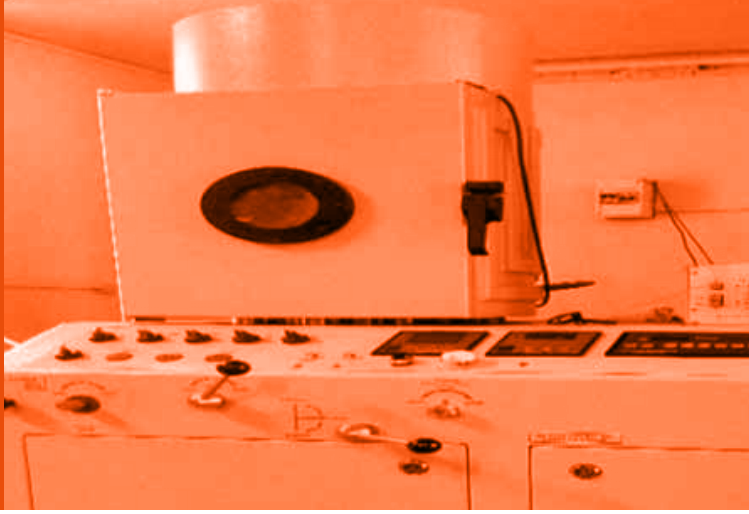
### **Manipal University Students' Research Forum (MUSRF)**

Manipal University Student Research Forum (MUSRF), under the aegis of Research Directorate conducted the second edition of International Conference on Healthcare and Technical Research (ICHTR 2016) on 7-8 November 2016. The objective of the conference was to provide a common platform for researchers, students, and professionals to voice their research ideas. The event also aimed at displaying the best that Manipal University has to provide in terms of research outlook and opportunities. Dr Narayan Sabhahit, Registrar and Dr G K Prabhu, Director, MIT, Manipal University, Manipal inaugurated the event and the function. Dr N Udupa, Director Research (Health Sciences) and Dr Satish Shenoy, Director Research (Technical) were present. Dr Pragna Rao, MUSRF Mentor (Health Sciences) and Dr Srikanth Prabhu, MUSRF Mentor (Technical Sciences) ensured smooth functioning of the event. Following the inauguration, the genesis of MUSRF was discussed.

A large number of participants, from the constituent institutions of Manipal University, attended the function.







On day one, Dr G K Prabhu, Director, MIT deliberated on the six 'I's, ranging from idea to innovation. Dr Prabhu elaborated the concept, which eventually formed the basis of a brainstorming session, appreciated by young interdisciplinary researchers. Dr Pragna Rao, Associate Dean, KMC, Manipal briefed the young researchers on "How to write a CV?" This session saw participation of budding researchers in huge numbers, which would help them prepare impactful CVs. Dr Anoop Rao, MD MS, currently working as a Neonatologist in Stanford University motivated students to think differently. He highlighted his job as a neonatologist and got a mannequin, to demonstrate the difficulties faced in neonatal intubation. Medicos and non-medico professionals lauded interactive session by Dr Rao. In addition to lectures, the events of the first day included oral presentations by students and faculty. More than 40 papers were presented in scientific disciplines such as medicine, technical sciences, dentistry, and management.

On day two, the poster session was organized which saw participation from 82 members. During the closing ceremony, best paper awards were presented to the winners of the competition followed by distribution of participation certificate to the registered participants.





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