



MANIPAL

ACADEMY of HIGHER EDUCATION

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

MAHE Research Bulletin

Oct - Dec 2018



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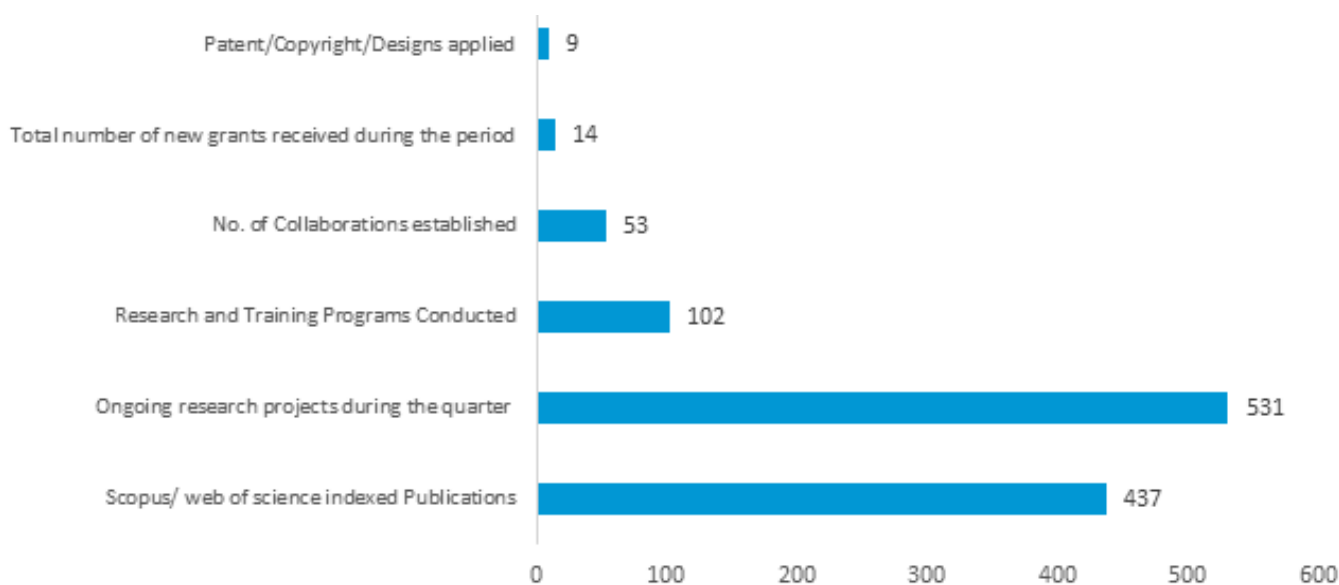
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Part I

Manipal Academy of Higher Education (MAHE) is one of the premier universities in India. MAHE considers both academics and research equally important for the betterment of the institution. The faculty members and the research scholars at MAHE have embraced the research culture. They publicize their research work in scientific publications, through presentations in various conferences and obtain patents, research grants etc. In this report, we present to you **an overview of the research activities** at MAHE during the period **Oct - Dec 2018**.

A. Details of research activities of MAHE for the period October-December 2018



B. Faculty and institution achievements

1. Dr Varun Kumar Singh, Assistant Professor, Department of Pathology, Melaka Manipal Medical College (MMMC) was awarded the "Best Paper Presenter" for his work titled "Post-chemotherapy morphological changes in bone marrow metastasis of neuro-blastic tumour prognostic significance" at the PATHCON and LAB EXPO 2018, held in New Delhi during 15-16 December, 2018.
2. Dr Monica C Solomon, Professor and Head, Department of Oral Pathology, Manipal College of Dental Sciences (MCOADS), Manipal received the "Best Paper Award" for scientific presentation titled "FOX M 1 Based Quantitative Malignancy Index Diagnostic System (QMIDS)- A Novel Multi Gene Assay for Dysplasias and Oral Squamous Cell Carcinomas" at XXVII National IAOMP Conference during 16-18 November 2018 at Amritsar.
3. Dr Krishnamurthy Bhat, Head, Department of Pharmaceutical Quality Assurance, Manipal College of Pharmaceutical Sciences (MCOAPS), Manipal secured the 'Best Paper award' for the project titled, "Development and validation of an analytical method for related substances in N-acetyl-L-cysteine effervescent tablets by RP-HPLC" at 23rd APTI in Jaipur during October 5-6, 2018.



4. Dr Bhavana Bhat, Assistant Professor, Department of Pharmacy Management, MCOPS received a scholarship to attend the 11th ISPE/ ACPE conference held during October 27-29 in Xian, China.
5. Dr Srinivas Mutalik, Professor, Department of Pharmaceutics, MCOPS received a research award from VGST, Government of Karnataka in recognition and appreciation for his research publications in Science and Technology in November 2018.
6. Dr Lalit Kumar, Faculty, Department of Pharmaceutics, MCOPS bagged 'Prof M L Khorana IJPS Best Paper award' for the project titled, "Statistical optimization of extraction process for the quantification of valsartan in rabbit plasma by a HPLC method" on December 22, 2018 in New Delhi.
7. Dr T S Murali, Manipal School of Life Sciences (MSLC), Manipal received Endeavour Executive Fellowship to visit Deakin University, Geelong, Australia. Dr Murali worked in Dr Jagat R Kanwar's laboratory who is a Professor in Nanomedicine at the School of Medicine (SoM). During a period of three months, Dr Murali gained first-hand experience towards achieving professional development to improve the quality of research output and to develop international collaborations.
8. Dr Poornima A Manjrekar, Professor of Biochemistry at Centre for Basic Sciences, Kasturba Medical College (KMC), Mangalore, was awarded the honorary "Fellow of the Association of Clinical Biochemists of India" (FACBI) in recognition of her outstanding contribution to the advances in Clinical Biochemistry, by the Association of Clinical Biochemists of India during its 45th ACBICON at Panjim, Goa on 25 October 2018.
9. Dr Kashinath Nayak, Faculty at Kasturba Medical College Mangalore, was awarded "Dr Sardarilal Memorial award" for his oration at the ASTICON-2018 held at AIIMS, New Delhi in recognition of his work in study of sexually transmitted diseases and AIDS on 12 October 2018.
10. Dr Arunachala U C, Associate Professor, Manipal Institute of Technology (MIT), Manipal received "Outstanding Contribution in Reviewing" award from Journal of Applied Energy (Elsevier).
11. Dr Gautham Jeppu, Associate Professor, MIT, Manipal received a Research Grant, under the RGS/F scheme, VGST in December 2018.



C. Achievements by research scholars and students

1. Ms Benitta Mathews, sixth year PharmD, MCOPS received Best Paper award for the work titled "Adverse effects of fluoroquinolones: A retrospective cohort study in a tertiary health care facility" in Trivandrum during November 9-10, 2018.
2. Ms Krishna Gandhi, fifth year PharmD, MCOPS, Manipal received the third prize for the poster titled "Steroid-induced diabetes - preventable or inevitable" in MEDISAFECON 18 at Mangalore.
3. Dr Sanchari Basu Mallik, Department of Pharmacology, MCOPS, Manipal received the Endeavour Australia India Education Council Research Fellowship to be carried at Griffith University, Australia. She will be working under the guidance of Dr Devinder Arora, Faculty at Griffith University.

4. Mr Vivek Ghate, Research Scholar, Department of Pharmaceutics, MCOPS, Manipal was awarded a travel grant by the Society for the Study of Xenobiotics, India on 13 October, 2018. He also received a travel grant by SERB for attending the AAPS Pharm Sci 360 in Washington DC during Nov 4-7, 2018.
5. Ms Keerthi Priya, Research Scholar, Department of Pharmacology, MCOPS, Manipal won the first prize in "Learn A Skill contest" conducted by Coursera for Manipal Global. Mr Sanju Rajan, 6th year PharmD and Ms Ashima Panjwani, final BPharm won the second and third prizes respectively. The students received the prizes during a ceremony conducted on October 17, 2018.
6. Ms Ekta, Research Scholar, Pharmaceutical Chemistry, MCOPS secured third prize in poster presentation for the topic titled "In silico design of novel VEGFR2 inhibitors in Drug Discovery and Drug Delivery held at Punjabi University, Patiala during November 1-4, 2018.
7. Mr Guruprasad Baipadithaya, Research Scholar, was awarded the "P R Sudhakaran Best Poster Award" during the 87th Annual Conference of Society of Biological Chemists (India) held at the School of Life Sciences, MAHE, Manipal during 25-27 November, 2018.
8. Ms Mangala Hegde bagged the "D P Burma Best Poster Award" during the 87th Annual Conference of Society of Biological Chemists (India) held at the School of Life Sciences, MAHE, Manipal from 25-27 November, 2018.
9. Darshan C M, Research Scholar, Manipal School of Life Sciences, MAHE received the Best Poster Award for his presentation titled, "Light Emitting Diode Induced Autofluorescence (LED-IAF) based interrogation of protein structures" at the 87th Annual conference of the Society of Biological Chemists of India (SBCI) on "Genome Biology in Health and Disease" during November 25-27, 2018. This work is a DST-SERB sponsored project carried out under the guidance of Dr K K Mahato, Professor and Head, Department of Biophysics, Manipal.
10. Mr Raviprasad K V won the U K Misra Best Poster Award during the 87th Annual Conference of Society of Biological Chemists (India) held at the School of Life Sciences, MAHE, Manipal during 25-27 November, 2018.



D. Awards and accolades

1. Dr Shashidhara Y N, Associate Professor and Head, Department of Community Health Nursing, Manipal College of Nursing (MCON), Manipal received the Best Poster presentation award at ICON – IPE during 17 – 18 December 2018 at Malaysia.
2. Mr Vinish, Associate Professor, Department of Community Health Nursing, MCON, Manipal received second prize for poster competition on World Handwashing Day conducted by HICC.
3. Dr Ramesh, Department of Medical Surgical Nursing, MCON bagged the Best Oral Paper Award for the work titled, "The Effect of Comprehensive Nursing Intervention Programme (CNIP) on anxiety, fatigue, self-efficacy and quality of life in patients undergoing CABG surgery: A randomized controlled trial" during

the International Conference on 24 November 2018 held at Institute of Nursing Sciences, KLE University, Belagavi, Karnataka. He also received the Best Oral Paper Award for the presentation of "The effectiveness of reflexology on anxiety of the patients undergoing cardiovascular interventional procedures: A quantitative systematic review and meta-analysis of randomized controlled trials" during the International Conference on 10 December 2018 organized by College of Nursing, Krupanidhi Group of Institutions, Bengaluru

4. Dr Ganaraja, Faculty at Kasturba Medical College, Mangalore was awarded the first prize for the paper titled "A comparison of neuronal population in dentate gyrus of control rats and the litters of rats exposed to alcohol & those treated with *Centella asiatica* during pregnancy". This conference was well attended by national and international delegates at Haridwar, Uttarakhand on 22–23 December, 2018.
5. Dr Kishan, Faculty at Kasturba Medical College, Mangalore secured the second prize for poster presentation titled "Effect of micro infusion of SB-334867 in basolateral amygdala (BLA), on consummatory behaviour of male Wistar albino rats" in 4th International Conference on Basic and Applied Physiology at Haridwar, Uttarakhand on 22–23 December 2018.
6. Dr Teena M Mendonca, Faculty at Kasturba Medical College, Mangalore presented a free paper titled "Infection risk from eyeglasses of health care workers in operating room" in December 2018 during 37th KOSCON which was held in A J Hospital and Research Centre, Mangalore. Dr Teena received the best free paper award in miscellaneous section during the conference.
7. Ms Priya Poojary, Faculty Associate at Manipal Centre for European Studies was awarded the Marie Curie E U- co-fund visiting- Early Stage Researcher at Bremen International Graduate School of Social Science (BIGSS), Bremen, Germany during December 2018.
8. Mrs Suprabha Padiyar, Manipal Institute of Technology received the Best Paper Award for the paper titled, "Close Loop Control of Daylight-Artificial Integrated System," at the International Conference on Engineering, Computers and Natural Sciences at Panjim, Goa, during October 19-21, 2018.
9. Mr Harish Kumar J R was a member of the team which won the Grand prize in the "Digital Health" category at the National Bio Entrepreneurship Competition (NBEC) 2018.
10. Mr Dilifa Jossley Noronha bagged the "Appreciation Award" jointly from Texas Instruments and Department of Science and Technology (DST), Government of India, for fostering an ecosystem bridging Government, Industry and Academia, in December 2018.
11. Mr Arjun C V received the "Best Paper award" for the project titled, "Penetration testing for Denial of service attacks and its variants" in the 3rd International Conference on Multidisciplinary Research and Technologies, held at Bangkok, Thailand on December 29, 2018.

Part II



A. Featured researcher of MAHE

Dr Chakrapani M is a Professor in the Department of Medicine, at Kasturba Medical College, Mangalore. He obtained his MBBS degree in 1986 and MD in Internal Medicine from Kasturba Medical College, Mangalore in 1990. Dr Chakrapani's area of expertise is insulin resistance and its impact on vascular changes in diabetes mellitus. His team's findings of a study has revealed that insulin resistance has a very high correlation with severity of coronary artery disease in those with type 2 diabetes for more than five years of duration. They have also proven that after a coronary event, insulin resistance (HOMA IR > 3.5) is associated with very high complications within next 1 year. Type-2 diabetic patients who had insulin resistance less than this threshold value had complications similar to non-diabetic patients. His other areas of interest are advanced analysis of temperature recording to simplify the evaluation of pyrexia of unknown origin and machine learning algorithm of 24-hour continuous temperature recording which is able to classify fever into four clear categories.



Professor Chakrapani has over 61 publications in journals of high repute with 333 citations and H index of 11. Under his guidance, three PhD candidates have secured their doctoral degrees. He is also a co-guide for three research scholars.

This is what Dr Chakrapani has to say to budding researchers: *"Being a clinical scientist, combining clinical work and research is a challenge. For doctors, it is much easier to identify areas of medical problems and raise meaningful research questions that can be answered by research. MAHE has the ideal research environment for clinical research since it has the best combination of excellent clinical load, research talent, basic sciences facility, technology and infrastructure. Clinicians should devote more time to interact with other disciplines to expand the scope of clinical research. While commitment is of paramount importance, clinical research work will add value to the skills and improve overall patient care"*.

His future plan is to extend his work and would like to identify a small subset of type 2 diabetes patients who have highest risk profile and might benefit from aggressive interventions. Cohort study is being planned to answer this question. Dr Chakrapani is also planning to expand research into machine learning algorithm for other body signals, which can be recorded and analyzed, since advanced sensors and analytic software are available. There is an immense potential for these advances to supplement human intelligence, not replacing it. He is a proud author of a publication which is in the top 10% - Srinivasan, M P, Kamath, P K, Bhat, N M, Pai, N D, Manjrekar, P., Mahabala, C. Factors associated with no apparent coronary artery disease in patients with type 2 diabetes mellitus for more than 10 years of duration: A case control study. *Cardiovascular Diabetology*, (2015) 14 (1), 146, (97 percentile, 10/322 *Cardiology and Cardiovascular Medicine*)

B. Top publications for the period October-December 2018

Title of the publication	Name of the author	Department/ Institution	Name of the Journal	Month and Year of Publication	1-Yr Impact
Azines as liquid crystalline materials: An up-to-date review	Shwetha Upadyaya, Poornima Bhagavath, DhanyaSunil	MIT, Manipal	Journal of Molecular Liquids	Nov 2018	4.513
Biometrics-Based Privacy-Preserving User Authentication Scheme for Cloud-Based Industrial Internet of Things Deployment	Dr Mohammad Wazid	MIT, Manipal	IEEE Internet of Things Journal	Dec 2018	5.863
Risk Factors for Acquiring Scrub Typhus among Children in Deoria and Gorakhpur Districts, Uttar Pradesh, India, 2017	Dr Arunkumar G	Manipal Institute of Virus research	Emerging Infectious Diseases	Nov 2018	7.422
Impact of Average, Local, and Electronic Structure on Visible Light Photocatalysis in Novel BiREWO ₆ (RE = Eu and Tb) Nanomaterials	Dr Ashok Rao	MIT, Manipal	ACS applied materials and interfaces	Oct 2018	8.097
Bi-allelic TMEM94 Truncating Variants Are Associated with Neurodevelopmental Delay, Congenital Heart Defects, and Distinct Facial Dysmorphism	Dr Girisha K M; Dr Anju Shukla	KMC, Manipal	American Journal of Human Genetics	Dec 2018	8.855
Clustered miRNAs and their role in biological functions and diseases	Kabekkodu S P, Shukla V, Varghese VK, D' Souza J, Chakrabarty S, Satyamoorthy K	School of Life Sciences	Biological Reviews	Nov 2018	11.7

Part III

A. a. Activities of MAHE Students' Research Forum (MAHE-SRF)

"Interdisciplinary Conference on Healthcare and Technical Research" (ICHTR-2018) was organized during October 29-31, 2018 by the Manipal Academy of Higher Education Students' Research Forum (MAHESRF), which is functional under the aegis of Directorate of Research (DoR), Manipal Academy of Higher Education (MAHE), Manipal, India. ICHTR-2018 was an eminent platform of an interdisciplinary conference.

The conference featured keynote addresses and guest lectures by many renowned researchers of MAHE and external speakers as well. Mr Varghese Thomas, Mr Shashank Koushik, Dr Asha Kamath, Dr B Unnikrishnan, Dr Arun G Maiya, Dr Srikanth Prabhu, Dr Sampath Kumar, Dr N V Subba Reddy, Dr Manjunath B Joshi, Dr N Udupa, Dr Yogesh Pai, Dr Rohit Verma, Dr Vidya Bai and Mr Manik Vohra delivered plenary lectures during ICHTR-2018. There was a keynote address by Dr Maneesh Thomas on Innovation and Entrepreneurship in Healthcare. ICHTR-2018 had total 144 number of participant registrations from both MAHE (School of Life Sciences, Manipal; Kasturba Medical College, Manipal and Mangalore; Manipal College of Dental Sciences, Manipal; Manipal Institute of Technology, Manipal; Faculty of Architecture, Manipal; Department of Commerce, Manipal; Department of Atomic and Molecular Physics, MIT, Manipal Academy of Higher Education; School of Management, Manipal; Manipal College of Pharmaceutical Sciences, Manipal and Melaka Manipal Medical College, Manipal, School of Life Sciences, Manipal Academy of Higher Education, Dubai, UAE) and outside MAHE (Department of Biophysics, Basic Medical Sciences Block II, Panjab University, Chandigarh, Department of Biotechnology, KLE Technological University, Hubballi, Karnataka, Department of Pharmaceutics, NGSIM Institute of Pharmaceutical Sciences, Nitte Deemed to be University, Mangaluru, Karnataka, The University of Trans-Disciplinary Health Sciences and Technology, Bangalore, Department of Pharmaceutical chemistry, Annamacharya College of Pharmacy, Rajampet, Andhra Pradesh, Department of Pharmaceutics, Amrita School of Pharmacy, Amrita Vishwa Vidyapeetham, Amrita Institute of Medical Sciences, AIMS Health Sciences Campus, Ponekkara, Kochi, Kerala, Department of Geology, Government College Kasargod, Vidyanagar, Kasaragod, Department of Civil Engineering, Manipal Institute of Technology, Manipal Academy of Higher Education, Manipal, LV Prasad Eye Institute, Hyderabad and Sree Siddaganga College of Pharmacy, Tumkur.

There were 73 poster and oral presentations in Health Sciences, 32 in Basic Sciences, 29 in Technical Sciences and ten under Management Sciences. All the poster and oral presentations were evaluated by MAHE faculty members. Winners of oral and poster presentation sessions of ICHTR-2018 is given below:

Oral Presentation (Basic Sciences)

1. Anu Radha Sharma, School of Life Sciences, MAHE, Manipal bagged the first prize for the presentation titled "MicroRNAs as Potential Predictors of Response to Anti-Platelet Therapy". Co-authors were Manik Vohra, Shashikiran Umakanth, Abdul Razak U K, Ranjan Shetty, Kapaettu Satyamoorthy and Padmalatha S Rai.



2. Divya Adiga, School of Life Sciences, MAHE, Manipal secured the second prize for the presentation titled "Regulation of Senescence and Epithelial to Mesenchymal Transition (EMT) by DOC2B in Cervical Cancer". Co-authors are Vaibhav Shukla, Shama Prasada Kabekkodu and Kapaettu Satyamoorthy.

Oral Presentation (Health Sciences)

1. Samrun Nessaa, BITS Pilani Hyderabad Campus, clinched the first prize for the presentation titled "GPS-Aided Study of Larval Indices of *Aedes aegypti* and Analysis of Risk of Dengue Outbreak". Co-authors are Swati Alok and A. Sajeli Beguma.
2. Ramya V Rao, Department of Physiotherapy, Yenepoya Specialty Hospital, Mangalore received the second prize for the presentation titled "Accelerated anterior cruciate ligament reconstruction rehabilitation– a sprinter's case report". Co-authors are Deepak Rai K, Savith Shetty and Muhammad Thahir.
3. Kiransha Velingkar, Department of Physiotherapy, School of Allied Health Sciences, MAHE, Manipal won the second prize for the presentation titled "Normative values of Moberg Pick Up test in Indian adults". Her co-author is Kavitha Vishal.

Oral Presentation (Technical Sciences)

1. Meghashree Alampally, Faculty of Architecture, MAHE, Manipal bagged the first prize for the presentation titled "Importance of following building regulations in urban residential zones – case – Horamavu, Bengaluru". Her co-author is Sanghamitra Roy.

Poster Presentation (Basic Sciences)

1. Anu Radha Sharma, School of Life Sciences, MAHE, clinched the first prize for the presentation titled "Development of Species-Specific Marker for Punarnava Using Suppression Subtractive Hybridization Coupled with Next Generation Sequencing". Co-authors are Dipashri Ramesh Patkar, Manik Vohra, Bobby Paul, Kapaettu Satyamoorthy and Padmalatha S Rai
2. Jijo Lukose, Centre for Biophotonics, Department of Atomic and Molecular Physics, Manipal Academy of Higher Education, Manipal bagged the second prize for the presentation titled "Optical Tweezers Combined with Micro Raman spectroscopic investigation of red blood cells". Co-authors are Mithun N, Ganesh Mohan, Shamee Shastry and Santhosh Chidangil.

Poster presentation (Health Sciences)

1. Pooja Kawale, Sree Siddaganga College of Pharmacy, Tumkur won the first prize for the presentation titled "Does the clinical features of voice disorders vary with phonatory gap: A clinical voice analysis". Co-authors are Ravichandra Vandal, Syed Mansoor Ahamed, VijayaKumar S, Veeresh P Veerapur.
2. Prabhat M Kalkura, Department of Physiotherapy, School of Allied Health Sciences, MAHE, Manipal secured the second prize for the presentation titled, "Integration of diabetic foot care practice in primary health care through a capacity-building educational program: involvement of peripheral level community health professionals". Co-authors are P Matpady, S Gundmi, A Maiya, S Umakanth, N Shastry, V Upadhya, M Hande, R Lingadakai, S Hebbar, S Kaniyoor Nagri, K Aithal, C Shetty.

3. A Sampath Kumar, Department of Physiotherapy, School of Allied Health Sciences, MAHE, Manipal received the third prize for the presentation titled, "Correlation between BMR, Visceral Fat and Insulin Resistance among Type 2 Diabetes with Peripheral Neuropathy". Co-authors are Dr G Arun Maiya, Dr B A Shastry and Dr Vaishali K.

Poster presentation (Management Sciences)

1. S Ashmitha, Department of Architecture, MAHE, Manipal bagged the first prize for the presentation titled, "Livelihood Impacts and Slum Resettlement Programmes: Case of Chennai". Her co-author is Kesar P.

Poster presentation (Technical Sciences)

Hemant R Hegde, Department of Atomic and Molecular Physics, MAHE, Manipal bagged the first prize for the presentation titled, "Synthesis of highly stable silver nano-rods with controlled aspect ratio for refractive index sensing". Co- authors are Santhosh Chidangil and Rajeev K Sinha.



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