

MEMORANDUM OF UNDERSTANDING

BETWEEN THE

School of Biological Engineering & Sciences, SHOBHIT UNIVERSITY, Meerut, UP

AND THE

Department of Pharmacology & Pharmacy, L.L.R.M. MEDICAL COLLEGE, Meerut, UP

This Memorandum of Understanding (MOU) between the School of Biological Engineering & Sciences, SHOBHIT UNIVERSITY, Meerut, Uttar Pradesh (SBES) and the Department of Pharmacology and Pharmacy, L.L.R.M. MEDICAL COLLEGE, Meerut, Uttar Pradesh (DOP) (hereafter termed "the Parties") formalizes an agreement between the three parties to develop collaborative activities in the areas of applied research, training and education to enhance safe and efficacious biomedical and pharmaceutical research development.

I. Purpose

The specific purpose of this MOU is to establish an overarching framework for collaboration between the parties. This framework will be based on mutually agreed upon programs and activities in the areas of applied scientific research and training/education to foster the development of new tools to inform biomedical and pharmaceutical research development. The each party shall leverage its own expertise and resources to facilitate programs of shared interests across the diverse disciplines of therapeutics, biological sciences, engineering and biomedical devices in building applied research and training/education programs. The appropriate formal agreements will be executed as required by law for any activities that result from this collaboration.

II. Background

The **School of Biological Engineering & Sciences** encompasses four departments: Biomedical engineering, Biotechnology, Bioinformatics and Agri informatics.

The **Department of Biomedical Engineering** offers B.Tech., M.Tech and Ph.D. (in Biomedical Engineering), M.Sc. (in Biophysics & Biomedical Sciences) and B.Sc. in Biomedical Sciences. Biomedical engineering combine the problem solving ability of engineers with the knowledge of the biological and biomedical fields to develop new solutions for improving human health, healthcare, and quality of life for all people. Our distinguished faculty includes internationally renowned researchers in biomedical science and engineering. Biomedical engineering students work in research and development, research design, manufacturing, operations, service, technical sales and marketing, consulting and education to improve human health through advances in healthcare and medicine.

The **Department of Biotechnology** has undergraduate (B.Sc. & B.Tech.), postgraduate (M.Tech.) and research (M.Phil & Ph.D.) academic programmes. The Department is imparting quality education and providing an excellent research environment through its ongoing

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programmes. It imparts training for students to make them competent, motivated engineers and scientists. The department has developed extensive research facility and infrastructure to support the ongoing teaching and research initiatives. The department has initiated efforts to establish advanced research laboratories in all the thrust areas. Apart from fundamental research, the department aims to meet the targeted demands to cater the requirements of biotechnology based industries.

The **Department of Bioinformatics** is offering undergraduate (B.Sc. & B.Tech.), postgraduate (M.Tech.) and research (Ph.D.) programmes in Bioinformatics. Department facilitates the teaching and research in the interdisciplinary areas of structural bioinformatics, computational genomics and proteomics to create an intellectual environment for interdisciplinary education and training. The dynamic environment of the department is focused on students to gain experience in these fields through academic, industrial rotations and internship programs.

The **Department of Agricultural Informatics** emerges as a discipline out of synergisation between Computer Science & Technology and Agricultural Science & Technology. Department offers B.Tech & M.Tech and Ph. D. programmes in Agri-Informatics. This department of Agricultural Informatics, first-in-kind in India, is to impart conceptual, theoretical and applied knowledge of ICT, management, informatics, and agriculture, to the graduates of agricultural and allied Sciences. The department generates human resources with the right skills, knowledge, aptitude, entrepreneurial, and leadership qualities for effective design and implementation of ICT enabled agricultural production, supply-chain, value-chain and extension services to cater to the needs of agricultural sector stake holders (farmers, industry, research, extension and scientific organizations, etc).

The **Lala Lajpat Rai Medical College Meerut** was founded in 1963 named after Lala Lajpat Rai, one of the well-known freedom fighter. **Department of Pharmacology and Department of Pharmacy** of the medical college is one of the premier departments for medical and pharmaceutical education and research in the country. Department of Pharmacy in the Medical College Meerut was started in the year 1972. It offers great opportunities in skilled pharmacists in pharmaceutical and health care organizations both in India and abroad. It is one of the leading institutions in India with an exceptional curriculum designed to prepare quality pharmacists with professional capabilities so as to reach great heights in the ratios healthcare system. The pharmacists of 21st century possess a significant role in managing drug therapy, counseling patients on proper use of medications and monitoring drug therapy. The faculty and staff are the pride of department of pharmacy, who by their expertise teach and promote the learning process and also serve as an inspiration to the students to their research activities. They mold the student community into the outstanding professional by the advanced teaching techniques and learning aids. The department is vested with state of the art infrastructure and provides top-notch facilities to the budding pharmacists. The faculty members of this department have been keeping themselves engaged in the research work and further studies in addition to their teaching schedule.

III. Substance of Agreement

This MOU is intended as an overarching framework for joint collaboration between the Parties, toward the goal of developing new evaluative tools to inform medical, pharmaceutical and biomedical research development. The areas of collaboration would not be limiting to training/education programs but activities arising from complementary interests will also be developed jointly by Department of Pharmacology & Pharmacy and FBE, and offered to academia, industry, and others as identified needs arise. The Parties will disseminate information through mutually agreed vehicles including training activities, meetings, and symposia.

Applied research programs will be developed in areas of mutual complementary interest such as imaging, biomarkers and surrogate markers, proteomics and genomics, clinical trial design, and other areas that will enhance biomedical research development. As specific topics for joint training/education and/or research are identified under this MOU they will be conducted under the appropriate formal agreements as required by law.

IV. Participation

It is anticipated that a wide range of faculty, researchers, graduate and postgraduate students may participate in activities developed under this agreement. Other participants could include teacher, scientists, field laboratories and others identified for joint training and outreach activities. Each party will appoint appropriate representatives to facilitate the planning, preparation, and implementation of the activities within the framework of this MOU. Meetings will be convened at a venue and time agreed between parties, and each party shall be responsible for its own expenses incurred in sending representatives to these meetings.

V. Resource Obligations

This MOU describes in general terms the basis upon which the parties intend to cooperate. It does not create binding, enforceable obligations against any party. All activities undertaken pursuant to the MOU are subject to the availability of personnel, resources, and appropriated funds. This MOU does not affect or supersede any existing or future agreements or arrangements among the parties and does not affect the ability of the parties to enter into other agreements or arrangements related to this MOU. If there is collaborative work between the parties and their respective faculty or students which is not required to be formalized into a definitive agreement, each party reserves the right to publish the results of the collaboration. Any notice to other party wear under must be writing signed by party giving it and will be deemed given when mail postage prepaid by postal service or hand delivered when addressed as follows:

Mani Kumar *Uma* *Jayaram*

VI. Name and Address of Participating Parties and Liaisons

<p>A. Department of Pharmacy</p> <p>Dr. Mahendra Kumar Department of Pharmacy LLRM Medical College Garh Road, Meerut (UP-250002) Phone: 9412208069 Fax: +91-121- 2600509 Email: mahendra1129@yahoo.co.in</p>	<p>B. Department of Pharmacology</p> <p>Dr. Monika Sharma Department of Pharmacology LLRM Medical College, Garh Road, Meerut (UP-250002) Phone: 9412337840 Fax: +91-121-2600509 Email: sharma monica 28@yahoo.co.in</p>	<p>C. School of Biological Engineering & Sciences</p> <p>Dr. Jayanand School of Biological Engineering & Sciences Shobhit University NH-58, Modipuram, Meerut (UP- 250110) Phone: 9557577754 Fax: +91-121- 2575724 Email:jayanand@shobhituniversity.ac.in</p>
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VII. Period of Agreement

This MOU becomes effective upon the date of the last party to sign ("effective date") and will continue in effect for five years. It may be modified by mutual written consent or terminated by either party upon a 30-day advanced written notice to the other party. The parties agree to evaluate the MOU periodically during the effective period, but at least once annually, on or before the anniversary of the effective date. Upon evaluation, either party shall have the option of continuing, modifying, or canceling this agreement.

1. APPROVED AND ACCEPTED FOR THE **School of Biological Engineering & Sciences**

2. APPROVED AND ACCEPTED FOR THE **Department of Pharmacology**

3. APPROVED AND ACCEPTED FOR THE **Department of Pharmacy**

By..... Jayanand By..... Monika Sharma By..... Umas
 Date..... 20/08/2016 Date..... 20-08-2016 Date..... 20-08-2016

..... A.K. Sharma
 Signature of Witness

..... [Signature]

(Dr. Anil Kr. Sharma
 Name of Witness

..... Pradeep
 Signature of Witness

PRINCIPAL
 I.L.R.M.MEDICAL COLLEGE
 MEERUT

..... Pradeep Kumar
 Name of Witness

..... Amrendra
 Signature of Witness

..... Amrendra Kumar Chaudhary
 Name of Witness

..... Monika Sharma Umas Jayanand