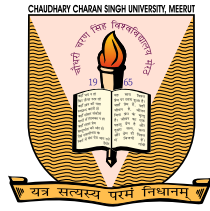


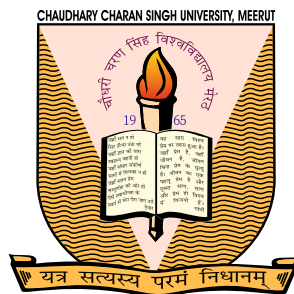


**Chaudhary Charan Singh University, Meerut (U.P.) India**



**Centre for Translational  
Research**

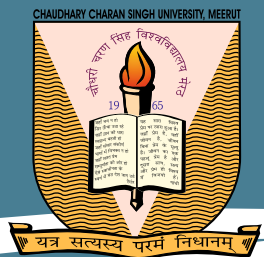




## **Centre for Translational Research**

**Chaudhary Charan Singh University  
Meerut, (Uttar Pradesh), India**

**Prof. Sangeeta Shukla**  
Vice Chancellor



**Chaudhary Charan Singh University**  
Meerut (U.P.) India

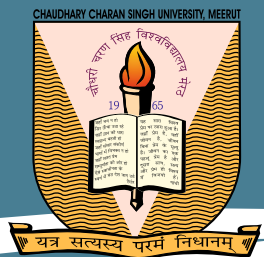
## **MESSAGE**



Translational research (TR) signifies a multidisciplinary approach to expedite the availability and development of clinically relevant affordable products and new strategies for improving the healthcare system. It encompasses new discoveries, innovations, technologies, and medical devices, on one hand, and policy-based research, on the other. Basic scientists, as well as clinical research and development, require a shift with an integrated approach from researchers and clinicians to initiate innovative ideas and discoveries which can fulfill the need-driven requirements. The fundamental basic research needs to be evidence-based, can be validated, and target-oriented which will facilitate the identification of potential leads for translational discoveries. Our vision for research at the Chaudhary Charan Singh University will be focused on drawing together researchers for collaborations. We intend to grow our partnerships with departments across campuses and with regional and national entities dedicated to conducting basic, biomedical as well as clinical research.

**(Sangeeta Shukla)**





## **MESSAGE**



Translational research (TR) applies across the spectrum of science and humanities. It aims to "translate" findings in fundamental research into practice. The Chaudhary Charan Singh University is uniquely suited, committed, and obligated to transform its academic culture, environment, and structure to further promote clinical and translational science as a distinct discipline locally and nationally. The University plans to revolutionise the University's research enterprise to develop, nurture, and support a new cadre of highly trained clinical and translational scientists and to enable their innovative research. Through novel institutional integration of programs and the development of new interdisciplinary research, the University plans for our scientists to excel in generating new biomedical knowledge and translating this knowledge bidirectionally across the entire translational research spectrum. This dynamic approach will result in the development of myriad infrastructure, programs, and services. Over the next five years, our University will transform our scientists through competency-based educational programs and the infusion of mentoring into all levels of training to advance the field of clinical and translational science through the next generation. The University will transform research by providing a robust resource environment to support team science and through the development of mechanisms for data sharing. These transformations will lead to fundamental changes at the University that will enable the faculty and investigators to conduct visionary, relevant clinical and translational research.

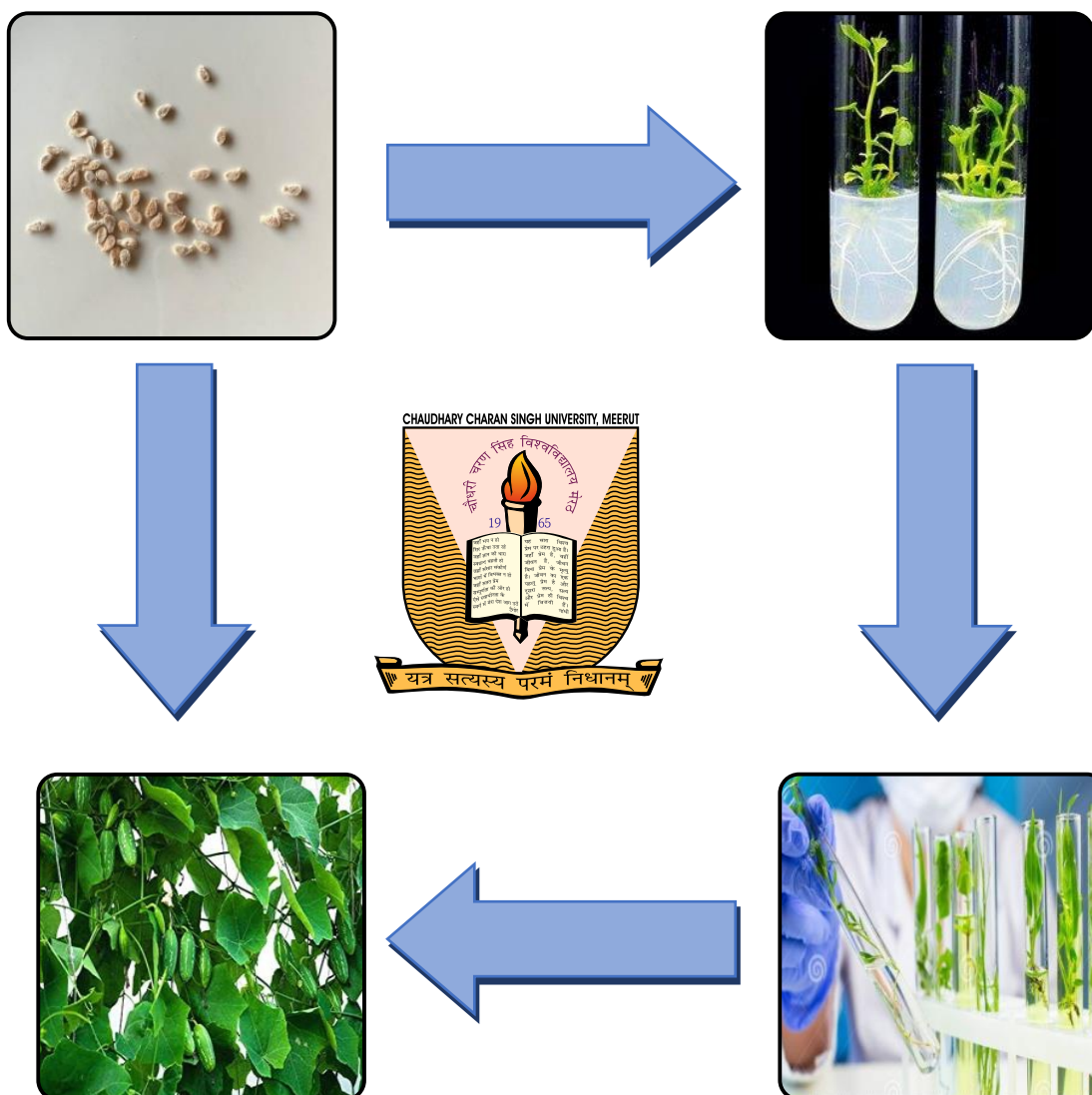
**(Y. Vimala)**



# Table of Contents

S. No.		Page No.
1.	PREAMBLE	6
2.	DEFINITION	7
3.	RATIONAL	7
4.	VISION & MISSION	8
5.	AIM	8
6.	OBJECTIVES	9
7.	TOGETHERNESS OF RESEARCH AREAS	10
8.	RESEARCH FACILITIES	11
9.	BENEFITS	11
10.	BUDGET	12
	TASK FORCE	
	ADVISORY BOARD	

# Centre for Innovative and Translational Research





## Preamble

Chaudhary Charan Singh University (Formerly Meerut University, Meerut) was established on 1<sup>st</sup> July, 1965 and caters to the needs of higher education in six districts of Meerut region. Over 700 colleges with about Five lakh students are affiliated to the University. On the campus there are 39 teaching departments running 78 programs in science, arts, commerce, management, engineering, agriculture, education and law etc. The NAAC and UGC 11<sup>th</sup> Plan committee appreciated the academic achievements of the University in their reports. The central library of the University has INFLIBNET and e-journal facilities. The University is running several professional courses with unique combination of subjects that attract students from all over the country. Few professional courses achieve 70-80% placement records in every academic year. Over 40 research projects and innovative programs worth 4.0 crores sponsored by DST, DBT, UGC, ICMR, DOE, SERB,UPCST and ICSSR, ICHR are currently in operation in

different departments of the University. Over 300 research papers were published during the preceding 5 yrs. period. The University promotes collaborative programs between National and International laboratories. Memoranda of Understanding have been signed among the University and various National laboratories and Industries. The University encourages participation in various extension programs.

The Faculty of Science comprising of Zoology, Botany, Biochemistry, Biotechnology, Microbiology, Molecular and Human Genetics and Environmental Sciences is one of the successful programs running on the campus since the time of inception. The University owns a reasonably good library and equipped with UGC funded INFLIB-NET facility wherein about 4000 journals are made available.

## DEFINITION

### What is translational research?

Translational research involves application of knowledge and discovery gained from the basic sciences to health and education practices for community as well as product development for human benefits. It implies to generate and utilise vast information in research laboratories (basic science) to pre-clinical investigations through its practical application in the clinic, pedagogy practices in education and product development for community benefits. It is a multidisciplinary-research that brings together a conglomerate of experts such as physicians, basic scientists, epidemiologists, patent experts and others for health benefits to human such as to reduce disease incidence, morbidity and mortality, bring personalized medicine to the population. Similarly, experts in the field of education may disseminate practices of pedagogy of teaching learning and conglomerate of experts from other fields of science to produce finished products for human use. Translational research enables new scientific findings to be put to use by health care professionals to the general population, evolved pedagogy to use by education professionals in institutions for a better practice in Indian education system and utilization of basic findings to develop finished products for human use.

## RATIONALE

### Rationale for developing “Centre for Innovative and Translational Research” at CCS University, Meerut

Chaudhary Charan Singh University, Meerut has generated vast information on environmental health, toxicology, physiology, pharmacological use of medicinal plants, pedagogy in education as well as several methods of material production. A need is being felt to consolidate the developments of practical significance that took place in R & D in the University and translate them into product by integrating with relevant industry for direct benefit to population.

Conventionally, scientists have always been trained to think within the confines of their expertise. Such a compartmentalized approach has been a major stumbling block in making translational research a reality. Basic scientists are not trained to think about applying their work

in a clinical setting, likewise, clinicians are not taught to think about research ideas related to clinical observations. Even though these two groups have long been collaborating and sharing knowledge, seamless translation of science from bench-to- bedside-and- back is almost non-existent until recently. The pipeline for translational research thus will include a paradigm shift in the way research will be carried out by both basic scientists and clinicians with the aim of bridging the gap between basic science, clinical research and clinical practice as well as other fields of lives. Understanding the contrast between using inbred animal models and translating the results into the outbred human population will be key and addressing these shortfalls will be pivotal in making precision medicine a reality.

In addition, *in vitro* molecular observations in the homogenous cellular state will need to be up-scaled towards an intact mammalian system, such as humans, capitalising on high resolution high throughput ‘omics’ platform in an integrated systems biology manner to give a holistic view on the interaction between host and the surrounding environment and social strata. This concept is also known as ‘From bench to bedside and back’.

### **Vision of the Centre**

To improve health of community by applying findings of basic research, to utilize pedagogy in teaching-learning and to develop products for human use.

### **Mission of the Centre**

To extend research resources, trainings, and collaboration opportunities to academia, industry, health care providers, and the community.

### **Aim of the Centre**

To promote translation of scientific discovery to practice by fostering innovative research, cultivating multi-disciplinary research partnerships, and ensuring a pipeline of next generation researchers through robust educational and career development programs.

## Objectives of the Centre

- i. To expedite scientific discovery to the clinic for the benefit of patients and communities.
- ii. To foster better integration of basic science, food science and pre-clinical research at Chaudhary Charan Singh University.
- iii. To promote translation of scientific discovery to practice by fostering innovative research, cultivating multi-disciplinary research partnerships, and ensuring a pipeline of next generation researchers through robust educational and career development programs.
- iv. To promote product-oriented research and introduction of entrepreneurship-oriented programs.





## **Togetherness of Research areas of the CCS University for “Innovative and Translational Research”**

1. Herbs in alleviation of metal toxicity
2. Herbs as nutritional sources
3. Medicinal plants cultivation
4. Spirulina production technology
5. Immunodiagnostics and reagent development
6. Molecular diagnostics
7. Nanomaterials and nanomedicine
8. Nutraceutical development
9. Toxicological evaluation of herbal formulations
10. Energy storage devices
11. Green energy initiatives
12. Zero waste clean- campus through recycling technology
13. Biocontrol methods for agri-yield enhancement
14. Ex situ conservation of medicinal and rare/ endangered plants
15. Upscaling of important or alternative medicinal products
16. Antimicrobial efficacies of medicinal plants and marketed products
17. Language and mathematics/ Statistics as tools for science communication with facts and figures.
18. Enhancement of shelf life of products
19. Assimilation of innovative pedagogy in teaching learning process
20. Use of information and Technology in dissemination of education.

## **Research facilities to be extended under Centre for Innovative and Translational Research**

- Central Instrumentation Facility
- Molecular and Cellular Biology Facility
- Intelligent Effective Computing and Biometric Laboratory
- Common Research & Technology Development Hub Laboratory

## **Benefits from Centre for Innovative and Translational Research**

- The outcomes/ results/ information evolved from basic science research occurred in the region of the Centre will be utilized to translate into products or practices for direct use by human beings to promote / protect health.
- Various products/ tools will be developed from basic results of the scientific research, which may be utilized by farmers to improve yield of agriculture produce or minimize agriculture cost.
- Innovative pedagogy evolved from education research will be translated into regular practice to achieve the goal of National Education Policy – 2020 in terms of improved teaching- learning process in educational institutions.
- Centre will provide a platform to researchers not only from CCS University, Meerut but also to other research institutions located around Meerut to perform innovative and translational research.
- Proposed Centre will also bring together various professionals to foster their research needs and integrate their research ideas into a process or product for human use.

## BUDGET

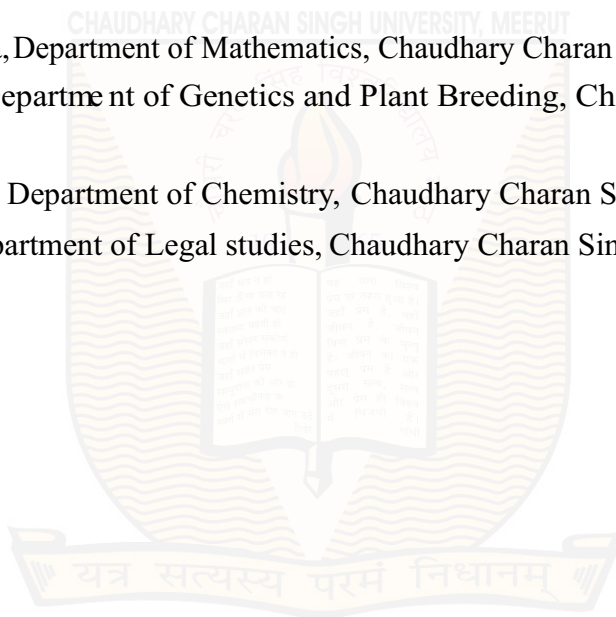
S No.	Items	BUDGET under 5 years Plan of Centre					
A.	Non- Recurring	I <sup>st</sup> Year (INR)	II <sup>nd</sup> Year (INR)	III <sup>rd</sup> Year (INR)	IV <sup>th</sup> Year (INR)	V <sup>th</sup> Year (INR)	Total
1	Infrastructure with modular laboratories equipped with advanced instruments and other amenities for scientists/ researchers	30000000=00	10000000=00	10000000=00	Nil	Nil	
B.	Recurring						Total of [A]
2	Consumables Chemicals/ Glassware	15,00,000=00	15,00,000=00	15,00,000=00	15,00,000=00	15,00,000=00	75,00,000=00
3	Hiring Services and Remuneration of experts/ professionals, repairing of non-working instruments	15,00,000=00	15,00,000=00	15,00,000=00	15,00,000=00	15,00,000=00	75,00,000=00
4	Contingency for stationary, office work and other urgent needs	500,000=00	500,000=00	500,000=00	500,000=00	500,000=00	25,00,000=00
							Total of [B]
							17500000=00
							Grand Total [A+B]
							67500000=00
	Rupees Six crores seventy-five lakh only						

## **TASK FORCE FOR CENTRE OF TRANSLATIONAL RESEARCH**

1. Prof. Sangeeta Shukla, Vice Chancellor, Chaudhary Charan Singh University, Meerut
2. Prof. Y. Vimala, Pro-Vice Chancellor, Chaudhary Charan Singh University, Meerut
3. Prof. Bindu Sharma, Coordinator, Centre for Translational Research

## **MEMBERS**

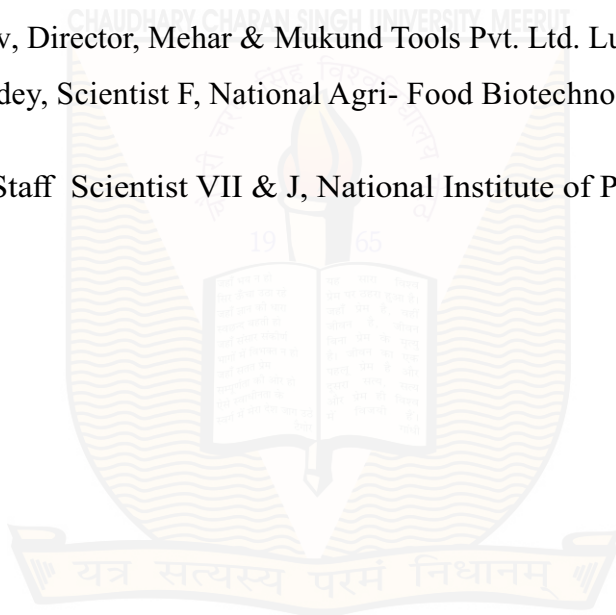
1. Prof. A. K Chaubey, Department of Zoology, Chaudhary Charan Singh University, Meerut.
2. Prof. Beer Pal Singh, Department of Physics, Chaudhary Charan Singh University, Meerut.
3. Prof. Shailender Sharma, Department of Genetics and Plant Breeding, Chaudhary Charan Singh University, Meerut
4. Prof. Mukesh Sharma, Department of Mathematics, Chaudhary Charan Singh University, Meerut.
5. Dr. Sachin Kumar, Department of Genetics and Plant Breeding, Chaudhary Charan Singh University, Meerut.
6. Dr. Nazia Tarannum, Department of Chemistry, Chaudhary Charan Singh University, Meerut.
7. Dr. Vivek Tyagi, Department of Legal studies, Chaudhary Charan Singh University, Meerut.





## Advisory Board

1. Dr. Anand Misra, DG DRDO
2. Sh. Shailendra Jaiswal, IRS, Ex. Principal Executive Director, DRDO, Ministry of Defence, Government of India.
3. Dr Byomesh Tripathi, Cardiologist, University of Arizona, Phoenix, USA
4. Dr Purnima Sharma, University of Texas, Elpaso, USA
5. Sh. A.P. Sharma, General Manager, Central Tool Room, MSME Technology Centre -Ludhiana
6. Prof. Vineeta Shukla, Head Dept. of Zoology, MD University Rohtak
7. Sh. Gurpreet Singh Kahlon, President, Auto Tech Cluster, Vice President, Auto Parts Manufacturers Association India
8. Sh. Harinder Sachdev, Director, Mehar & Mukund Tools Pvt. Ltd. Ludhiana.
9. Dr. Ajay Kumar Pandey, Scientist F, National Agri- Food Biotechnologi Institute (NABI), Mohali, Punjab.
10. Dr. Manoj Prasad, Staff Scientist VII & J, National Institute of Plant Genome Research, New Delhi.



**ECOLOGY RESEARCH LAB**



**BIOCHEMISTRY LAB**



**AG BOTANY LAB**



**ECOLOGY RESEARCH LAB**



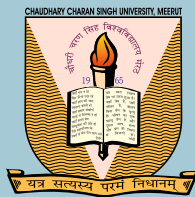
**PLANT TAXONOMY & PATHOLOGY LAB**



**LABORATORY OF MOLECULAR PARASITOLOGY**







## **CONTACT US**



### **Address**

Chaudhary Charan Singh University,  
Meerut, Uttar Pradesh-250004



### **Phone Number**

+91 121 2763539



### **Fax Number**

+91 121 2764777



### **Email Address**

[registrar@ccsuniversity.ac.in](mailto:registrar@ccsuniversity.ac.in)

**CHAUDHARY CHARAN SINGH UNIVERSITY  
MEERUT, (UTTAR PRADESH), INDIA**