Facilitating Interdisciplinary Teaching, Learning and Research

High priority issues such as health care, sustainable energy and climatic issues, faced by today's society are so complex that these issues require expertise from multiple disciplines. It is forecast that future problems will be becoming more and more complex that students with single domain knowledge will not be able to solve these issues. Hence educational institutions will have to look for alternative strategy of interdisciplinary education and interdisciplinary research to address such future issue. Interdisciplinary research (IDR) provides connections that lead to new knowledge economy. Thus "The time is upon us to recognize that the new frontier is the interface, wherever it remains unexplored"

Undergraduates can have a rich educational experience when they learn about and in more than one discipline, especially when education is complemented by research experience. Interdisciplinary engagement is a dynamic process that incorporates people, ideas, and from multiple disciplines in a manner that achieves a distinctive outcome. CARE adopts policies that promote borrowing and sharing within and between disciplines (medicine, allied health sciences, biotechnology, genomics, proteomics, nanotechnology, tissue engineering etc). The University uniquely concentrates on developing programmes of interdisciplinary education and leverages many of these programmes to facilitate interdisciplinary collaborative research

CARE offers a distinctive combination of innovative teaching programs, innovative teaching programs in emerging areas at the interface of two or more disciplines. These programs, implemented under choice based credit system are integrated with research projects that engage students in interdisciplinary research projects. The courses have elective subjects, enabling students for horizontal mobility. Undergraduate students (Four out of the seven UG programs) are engaged in interdisciplinary experiences, such as courses at the interfaces of traditional disciplines that address basic research problems, interdisciplinary courses that address the emerging biomedical fields, and research experiences that span more than one traditional discipline. Students take part in social and community activities directed by a team of faculty residents. "This is a great place to experiment with interdisciplinary studies. The more co-curricular programs we offer, the more our students will be able to build their own education. Similarly about 10 interdisciplinary PG programmes are also offered encompassing many different fields

Autonomy is granted to the constitutional colleges for Curriculum design

The interdisciplinary curriculum

Moves from mastery of disciplinary content to the critical integration of multiple bodies of knowledge relative to a specific question,

Recognizes that learning does not occur solely in a formal classroom environment or

through formal faculty-student exchanges,

Recognizes the shifting epistemological boundaries (internal and external to the university) that affect the acquisition of knowledge,

Encourages students' engagement with social problems;

Facilitates the application of students' knowledge to contemporary issues

Recognizes the value to be gained from interaction with multiple groups, including faculty, peers, and community

Assessment is instituted in a manner that aligns with expectations for the program and the institutional culture; and various learning formats (such as seminars, internships, lectures, and field experiences) are included.

- The integration of laboratory (central research laboratory) and lecture spaces (Common smart lecture theaters, auditoria and demo halls) cultivates a flexible environment that fosters innovative pedagogy

- The University emphasizes on collaborative student faculty research as a teaching model, and is organized to facilitate connections between departments

- Interdisciplinary space, however, is found not only in campus facilities. Working in conjunction with the University rural and urban Community Service Center, undergraduates use the real world as a classroom

- The success of an interdisciplinary program relies on financial and administrative support from the institution. Often this support translates into the development of an independent freestanding interdisciplinary faculty in the university,

With enormous development and potential in health industry and advanced technologies being utilized in health care, these courses explore newer emerging, and on graduation the students are placed in lucrative positions in the industry. They are fully prepared for further research in the respective fields for major innovation and breakthroughs

Multidisciplinary, innovation-focused Ph.D program is promoted in CARE and scholars engaged in these programs gain the ability to cross interdisciplinary boundaries concurrently learn the tenets of innovation and entrepreneurship with their fields of study. The structure of the institution enables one to overcome geographical distance and develop collaborations between various arms of CARE such as the FAHS, Medical faculty and nursing faculty and nearby dental institute too. Faculty at FAHS are encouraged to develop collaborations with practicing doctors in various fields of medicine so as to understand the exact requirements in health care and take up challenges by developing research methodologies and pursuing the work to obtain tangible results further translating into usable products. Building interdepartmental collaborations is the

key idea behind this model. An attempt to perform research that can be translated into an application through collaborations between researcher scientists and application scientists is the motive behind this activity. Several successful models, wherein researchers come out of their safe zones of research to explore and develop new models to achieve outcomes with higher impact led us to work out this model

Interdisciplinary teaching and research are exceedingly difficult to accomplish. In emerging research areas, joint efforts of specialized personal from different disciplines are needed. CARE has attracted faculty with special qualifications in all the respective disciplines, as shown by their publications. University status has enabled to recruit as well as retain faculty members of international status, which will enable to fulfill CARE's promise of excellence in emerging areas. CARE has expert faculty in the emerging interdisciplinary areas to guide students to achieve necessary skills to cope with the future demand of new fields as they emerge at the interface of different disciplines. CARE maintains good faculty-to-student ratio to ensure students receive the personal attention and the support they need to have a transformational learning experience. CARE has established well equipped state of art instrumentation facility, centralized research laboratory, high bandwidth computing facility, central and departmental libraries and CPCSEA approved animal house for biomedical teaching and research in emerging interdisciplinary areas. The collaborative interdisciplinary research has resulted in many research publications in emerging areas, about 30 patent publications, extramural research grants, and a few products in the preclinical stage. CARE is committed to engage the students and research scholars to truly experience an interdisciplinary culture which will make them "world-ready" with multidiscipline knowledge to combat any complex future problem.