

Putting research back into education

What has made Shiv Nadar University, a newcomer in the country's higher education space, one of the leading names in the competitive research space

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AN HOUR'S DRIVE from Delhi's suburb Noida, and after negotiating bumpy serpentine dirt tracks in the interiors of Uttar Pradesh's rural boroughs interspersed among swathes of farms, you reach the 256-acre, Victorian-looking campus of Shiv Nadar University (SNU). Set up in 2011, the newbie in the country's higher education sector is already a formidable name in the competitive research space.

The self-sustaining, fully-residential private university, which proclaims itself to be "seriously academic," aims to acquire the pole position for its research-centric approach. The MHRD's National Institute Ranking Framework (NIRF), in its India Rankings 2018, ranked SNU 72nd overall and 48th among universities. Rattling off the numerous awards it has won—including the University of the Year (in existence for less than 10 years) by FICCI and PHD-CCI, and the Best Avant-Garde Institution by CII—the SNU VC Rupamanjari Ghosh is, however, not content to rest on its laurels. Herself a force to reckon with in the world of natural sciences, especially for her work on two-photon interference with globally-renowned physicist Prof L Mandel, Ghosh, who has been steering SNU for over two years now, is doing what she knows best—pushing the university towards new frontiers of research and excellence.

Her efforts have paid off; today, SNU is associated with game-changing research in areas including antibiotic resistance, cancer, malaria, renewable energy, materials for solar energy application, giving new life to batteries and social science of arsenic. SNU holds the distinction of hav-



ing spearheaded discovery of a compound that can reverse environmental mercury (a heavy metal) poisoning by converting it from a toxic, volatile and soluble organic form (as a pollutant) into a comparatively safe, inert and stable form that renders it harmless and insoluble in a few minutes.

In social sciences, SNU is researching on myriad issues like the paradox of declining education, the evolution of social networks and inside India's *mandis*. Its efforts at promoting research have won it accolades from the UGC's Expert Committee Reports on State Private Universities, which observed that "it is amazing to see research output across all disciplines... such efforts being made by a private organisation is laudatory." Quips Ghosh, the quintessential physicist whose passion for science and research is reminiscent of scientist and former Indian President APJ Abdul Kalam, right down to the signature coiffed bob of salt and pepper hair framing her animated face, "I firmly believe

good researchers make good teachers."

But while there may be many claimants for the coveted title of "research-centric," what perhaps differentiates SNU is the fact that the "cornerstone of our academic mission is our emphasis on undergraduate research," exults Ghosh. Its Opportunities for Undergraduate Research (OUR) programme—students at UG level are encouraged to undertake research and work with faculty outside the regular curriculum—serves the twin purpose of enabling the university to retain both good faculty and students during their fledgling years. Says Aryan Agarwal, a third-year student of BSc Economics, "I chose SNU because it is more research-oriented even at the UG level." Further, compared to most private universities which are out-priced for many students, SNU provides scholarships and free-ships to all admitted students on the basis of academic merit. It has devised a peer-learning initiative through which students can teach, earn and learn simultaneously.



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— RUPAMANJARI GHOSH, V-C, SNU

SNU has set up centres to facilitate interdisciplinary research. These include the Big Data Analytics Centre, Centre for Informatics, Centre for Environmental Sciences and Engineering, Centre for Public Affairs and Critical Theory, and the Institute for Innovation and Inventions with Mathematics and IT. In all, SNU has five schools with 16 departments offering 14 UG, 10 Master's and 13 doctoral programmes. It also has a dedicated Centre for Advanced Research to draw scholars for interdisciplinary research with focus in areas such as medicine, life sciences, technology, rural development, societal evolution, data sciences, and art and design. Additionally, it is the first private university in the country with a High Performance Computing Cluster with 30 teraflops of peak performance for research requiring advanced computational capabilities.

From the perspective of faculty, too, SNU comes across as a researcher's par-

adise. Prof Partha Chatterjee, who heads the Department of Economics, candidly admits, "We are given a free hand in designing our courses exactly as we want. This ensures courses are tuned to today's needs and benchmarked against the best in the world." Echoing similar thoughts, Shubhro Sen, director, School of Management and Entrepreneurship, states, "Our curriculum is much more defined, exacting and technology-driven, as the aim is to create a contemporary programme with embedded global orientation."

Vying to establish its credentials as India's first Ivy League level institution, Ghosh is trying to create a research university where "multidisciplinarity does not come at the cost of monodisciplinarity and where breadth is not at the cost of depth." Towards this goal, the curriculum has been designed to allow students to major in a particular subject while also studying and experimenting with a range of other minor and elective subjects, and getting degrees with minors and specialisations.

From 2011 to 2016, SNU received extramural grants of over Rs 17.03 crore for more than 52 active research projects, many of which are in collaboration with international universities. SNU boasts of partnerships with some of the best names including Annenberg School of Communication, University of Pennsylvania, Duke University, Fuqua School of Business, Babson College, HSBC Business School, Peking University and Carnegie Mellon University. In addition, Dell and SNU have an agreement to drive research & innovation.

With so much going for it already, Ghosh is ready to take SNU to the next level of academic excellence. "We want to be counted among the best educational institutes globally. That apart, I also believe that higher education now, more than ever before, needs to be integrated with evolving industry requirements, so that technological advancement doesn't hamper employability. If the robots are coming, they should not, and cannot, take away all jobs," she states. Not surprisingly, teaching at this vibrant university is not a passive, but a learning-centric active process.