



Dow and UCSB *Investment for future generations of Scientists and Engineers*

In 2005 the National Academy of Engineering (NAE) wrote a report entitled "Rising Above the Gathering Storm," which reflected on the fact that the US is not training enough engineers and physical scientists to replace those in the work force today. In many established companies, the average age of its employees is over 45. The generation of talent that won the space race and the Cold War is reaching retirement age and we are not producing the engineers and scientists that it will take to replace these soon-to-be retiring baby boomers.

The demographics present serious headwinds for industry, for manufacturing, and for economic growth. But The Dow Chemical Company has a knack for solving tough problems and turned this challenge into opportunity by stimulating industry/academic collaborations to fuel innovation and at the same time develop tomorrow's classical chemists, materials scientists and chemical engineers.



Dow put their money where their mouth is with a \$25 million annual investment at UC Santa Barbara in late 2011. This investment is one of the larger commitments Dow made in the US, and thanks to the excellence of the UCSB materials science, chemistry and chemical engineering programs, it's where they chose to establish the Dow Materials Institute (DowMI).

The DowMI brings together researchers from across UCSB's Chemistry, Materials Science, and Engineering departments to work on fundamental challenges to world problems that are of interest to industry and academia. The high impact research projects, focus on the theme of function by structural design, with applications areas that range from next generation microelectronics to high performance commodity polymers. The center enables the education and training of students and postdocs, and fosters their development in highly interdisciplinary, collaborative teams. The partnership between internationally recognized academics and industry experts creates a win/win and serves to both accelerate innovation and help shape future scientific leaders.

Dow further leverages their research collaborations within the DowMI at UCSB to develop the next generation of scientists through an investment

in the Dow Discovery Fellowships for outstanding chemical engineering graduate students. This donation is a portion of the total endowment Dow has committed to in order to perpetually fund 20 doctoral fellowships. These Dow Doctoral Fellowships allow pioneering, high-risk, high reward research by top students from around the globe to occur with the company's support.

Dow also fosters a number of ties with students on campus through efforts such as the Dow-UCSB Safety Initiative. Here, UCSB and Dow launched a pilot program to improve lab safety practices in the participating departments of Chemistry & Biochemistry, Chemical Engineering and Materials, as well as the Materials Research Laboratory. The innovative joint venture is similar to other pilot partnerships Dow has at the University of Minnesota and Pennsylvania State University. It provides the opportunity to create a safe environment for research, as well as prepare students for careers in industry by instilling work practices and safety awareness levels consistent with those found in the private sector.

Finally, Dow is engaging the campus' entrepreneurial community through its funding of an entrepreneurial program for UCSB students. This effort provides participants with the opportunity to learn how good ideas can be developed into successful and sustainable new businesses. The students work in multidisciplinary teams under the guidance of many experienced advisors and mentors who provide insight into the key elements of new ventures. The teams develop business plans and present their ideas at a competition. Dow contributes to the \$75,000 in prizes and seed capital that is awarded by the judges. The funding has helped a number of past winners develop their ideas into start up businesses.

"Dow's partners are critical to meeting the challenges we face in today's world. Our collaborative investment through the partnership at UCSB's Dow Materials Institute sustains investment in the materials sciences, and ensures that Dow continues to bring innovative materials solutions to solving important problems," said Lou Graziano, Dow's director for University R&D Strategy.

To learn more about how your company can work with UC Santa Barbara, contact Leslie Edwards (805-893-3944/edwards@engineering.ucsb.edu) or Chris Russo (805-893-5544/crusso@engineering.ucsb.edu) in the Corporate Affiliate Programs office.

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