

# New biotechnology institute at Rice promotes interdisciplinary studies

LAST November, Rice University opened a state-of-the-art biotechnology research and training facility that brings together three of the university's laboratories — the Cox Laboratory for biomedical engineering, the Greenwood Laboratory for basic medical science and the Mabee Laboratory for biochemical and genetic engineering.



**Institute of Biosciences and Bioengineering — Rice's new interdisciplinary research and educational facility.**

The Institute of Biosciences and Bioengineering is a three-storey, 108,000-square-foot facility housed in the George R. Brown Hall. Its mission, explains its assistant director, Diana Welch, is to promote interdisciplinary research activities between faculty members, students and staff at Rice and the neighbouring Texas Medical Center.

In addition to research, Welch says, the institute hopes to train the next cadre of scientists to feed into the state's burgeoning biotechnology industry. The institute offers a graduate training programme in biotechnology, which includes placing students at a biotechnology company for 3–6 months.

The \$25-million facility was funded largely through philanthropic support. Of the \$15 million in private donations, \$2.5 million came from the George R. Brown Foundation. Brown is a Rice alumnus and former chairman of the university's board of governors.

In addition to the 27 Rice faculty members, the institute has 12 adjunct faculty from Baylor College of Medicine and the University of Texas Health Science Center at Houston. Plans are afoot to recruit seven additional faculty members in biochemistry

and cell biology and two in chemical engineering.

In January, Antonios Mikos thought enough of the institute's potential to leave the Massachusetts Institute of Technology (MIT) and become an assistant professor of chemical engineering and bioengineering in the Cox Laboratory. Mikos was lured by a research environment where biologists, chemists and engineers can freely interact, and close proximity to the Texas Medical Center.

In collaboration with researchers at MIT and Harvard, Mikos is developing a method of regenerating fully functional liver tissue by growing liver cells on a bioresorbable, three-dimensional polymer scaffold. If successful, the procedure would provide an alternative to whole organ liver transplants and would alleviate a critical shortage of donor organs. Once implanted, the scaffold becomes innervated with blood vessels and provides a support matrix that can then be seeded with liver cells that have been cultured *in vitro*. The new liver transplanting technique has shown promise in small animal models and is being tested in pigs. Mikos hopes to begin human clinical trials within two years.

**Diane Gershon**

## Texas's top twenty fields

Science subfields in which Texas papers get more citations than the US average (= 1.00) in that field.

1	Physics	1.23
2	General Clinical Medicine	1.19
3	Orthopaedics/Traumatology	1.16
4	Medical Technology	1.16
5	Gastroenterology	1.15
6	Otolaryngology/Ophthalmology	1.14
7	Agriculture/Agronomy	1.13
8	Oncology	1.13
9	Life-Sciences Chemistry	1.12
10	Paediatrics	1.12
11	Instrumentation	1.09
12	Environmental/Social Medicine	1.09
13	Haematology	1.08
14	Biotechnology/Applied Microbiology	1.07
15	Analytic, Inorganic & Nuclear Chemistry	1.06
16	Organic Chemistry	1.05
17	Cardiology & Respiratory Medicine	1.05
18	Experimental Biology/Medicine	1.03
19	Chemistry, General	1.03
20	Neurology	1.02

Source: ISI's Science Indicators Database, 1987-91

## The woods are alive with high technology



On 100 acres in the 'research forest' of the Woodlands, the Houston Advanced Research Center (HARC) has become a focus of Texas physical sciences and technology research. Started by a Texas oil millionaire ten years ago, it has grown from a consortium of four Texas universities to a joint centre involving eight US universities and the Hungarian Academy of Sciences. Its 140 researchers and technicians do materials research, astrophysics, laser research and are developing magnets and beam technology for the Superconducting Supercollider as part of a \$14 million research programme.