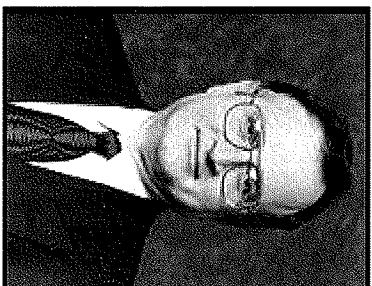


Harry G. Fair

Each year, a special lecture is given in memory of Harry G. Fair, an outstanding OU alumnus. Harry G. Fair was born in Okmulgee, Oklahoma, on June 3, 1916. He received his BS in chemical engineering in 1939. He joined the Phillips Petroleum Company in 1939 and worked his way up to vice president for supply and transportation, with responsibility for world-wide exchange of crude oil and all transportation facilities. In 1966, he joined the M.W. Kellogg Company as executive vice president in charge of all engineering activities and became executive vice president of Coastal States Gas Corporation from 1971 until the time of his death on July 27, 1974. Harry G. Fair was active in service to society and his alma mater. He was a member of a number of professional societies and was a licensed professional engineer.

This lecture is made possible by the Harry G. Fair Memorial Fund contributed by his widow, Jane Swift Fair. Arrangements are made by the School of Chemical Engineering and Materials Science.



Dr. Nicholas Peppas

Robertson Meek Professor and Cockrell Regents Chair in Chemical, Biomedical Engineering and Pharmaceutics at the University of Texas at Austin, Austin, Texas

Intelligent Biomaterials for Protein delivery, Molecular Imprinting and Recognition

Engineering the molecular design of intelligent biomaterials by controlling recognition and specificity is the first step in coordinating and duplicating complex biological and physiological processes. We address design and synthesis characteristics of artificial molecular structures capable of specific molecular recognition of biological molecules. Recent developments in protein delivery have been directed towards the preparation of targeted formulations for protein delivery to specific sites, use of environmentally-responsive polymers to achieve pH- or temperature-triggered delivery, usually in modulated mode, and improvement of the behavior of their mucoadhesive behavior and cell recognition. Molecular imprinting and microimprinting techniques, which create stereo-specific three-dimensional binding cavities based on a biological compound of interest can lead to preparation of biomimetic materials for intelligent drug delivery, drug targeting, and tissue engineering. We have been successful in synthesizing novel, glucose-binding molecules based on non-covalent directed interactions formed via molecular imprinting techniques within aqueous media.

Nicholas Peppas

Education: Dipl. Eng., National Technical University of Athens, Greece, 1971; Sc.D., MIT (1973) and postdoctoral work at the Arteriosclerosis Center at MIT.

Biographical: Dr. Nicholas A. Peppas is the Paul D. & Betty Robertson Meek Centennial Professor of Chemical Engineering, Biomedical Engineering and Pharmaceutics and Cockrell Family Regents Chair at the University of Texas at Austin. He is an active researcher in the fields of controlled drug delivery, biomedical engineering, biomaterials, molecular modeling of protein structures in contact with biomaterials and tissues, modeling of biomedical devices, bionanotechnology and molecular recognition processes. Peppas is in charge of his own Biomaterials and Drug Delivery Laboratories with 20 researchers (doctoral students, visiting scientists and technicians) and an annual budget of \$1.2 million.

Peppas is the author of 850 publications, 220 abstracts and 19 US and international patents. He is the coauthor or coeditor of 27 books and volumes, including the three volume Hydrogels in Medicine and Pharmacy (CRC Press, 1987), the monograph Pulsatile Drug Delivery (Stuttgart, 1993) and two books on Biopolymers (Springer, 1994). In addition, he has given more than 240 invited seminars and 650 scientific presentations in 32 countries.

He is active in various societies including: Society for Biomaterials, Controlled Release Society, American Institute of Chemical Engineers, American Physical Society, American Chemical Society, New York Academy of Sciences, Materials Research Society, American Association of Pharmaceutical Scientists, Biomedical Engineering Society, Tissue Engineering Society, North American Membrane Society, American Society for Engineering Education, American Association for the Advancement of Sciences, Sigma Xi and Phi Kappa Phi.

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- 1980 A.B. Slaybaugh, Conoco Inc.
- 1979 Charles R. Perry, Perry Gas Companies
- 1978 Raymond W. Lowe, E.I. DuPont de Nemours
- 1977 Laurence S. Reid, Ball-Reid Engineers Inc.
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Harry G. Fair
Memorial Lecture
in

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2003

