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****UT Health Science Center launches major Bio-Behavorial Program

DALLAS--- A multimillion dollar program to increase the understanding and ability to treat diseases affecting the mind is being launched at The University of Texas Health Science Center at Dallas.

The new Bio-Behavioral Brain Science Program will be based in the Department of Psychiatry of The Southwestern Medical School, one of three schools under the UTHSCD umbrella, but it also will draw from research in the departments of neurology, cell biology, biochemistry and others, says Dr. Kenneth Altshuler, chairman of psychiatry and designer of the program.

"We believe the puzzles of mental illness must first be solved at the molecular level," Altshuler says. "A cooperative effort between this kind of basic science approach and the best innovations in patient care will ensure our understanding the major disorders in the next several decades." These disorders include schizophrenia, depression and manic-depressive disease, alcoholism, Alzheimer's disease, drug abuse, anorexia and bulimia.

The psychiatry chairman considers the Dallas health science center to be in an enviable position to carry out cross-departmental research in this program because of the major studies already going on in the neurosciences. These include such projects as:

*Research into the biochemistry of depression.

*A look at the number of dopamine cells in the brain and their numbers in relation to schizophrenia and at other cells in relation to Alzheimer's disease (Dopamine is a chemical made in the brain.)

*Studies in gene amplification in which brain neurons may expand and change shape.

*Mapping brain anatomy via sophisticated computer techniques.

*Isolating specific proteins in the brain and looking at the "messages" that give instructions in the individual brain cells to manufacture that protein in schizophrenia and other illnesses.

*Probing for new understanding of the mysteries of many kinds of brain activity through sleep studies.

*A variety of chemical studies aimed at several disorders.

"Virtually no family escapes a brush with at least one of these illnesses," says the psychiatric researcher. "Uncertainty and planning for care cause families enormous concern when illness strikes. Costs destroy savings. And disturbed behavior destroys family relationships, as well."

Not only is mental illness costly to families, but it is costly to society. Altshuler points out that, today, one in every three hospital beds is occupied by patients with mental illness while one of every five visits to the doctor also is related to mental illness. The costs to the nation of these disorders are far more than those associated with cancer and heart disease combined, but federal research support for basic psychiatric efforts is only about a sixth of that for these other ills.

Each of the disorders targeted in the Bio-Behavioral Brain Science Program rests in the brain.

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"Tangible advances for some (disorders) have already been made," says Altshuler. "The number of schizophrenic patients in public mental hospitals is down to 100,000 from about 750,000 a few decades ago. Today, proper medication can lift depression in 80 percent of the patients being treated. Lithium has restored many non-functioning manic-depressive patients to productive lives."

However, far more remains to be done, he says. "While we can relieve the schizophrenic of his delusions, we can seldom motivate him to work. We can detoxify the alcoholic or the drug abuser, but social support--too often tenuous, anyway--is still our strongest weapon to keep him substance-free. Choosing medications for the depressed patient is still done on a 'hit-or-miss' basis since knowledge of the disease physiology to guide the choice remains elusive."

How lithium acts remains unknown, and promising leads for Alzheimer's disease and anorexia have barely begun to dispel the darkness. "While most programs in the hospital or community provide limited help, protection and support, we are marking time until research clarifies the bases of illness," he says.

New technology has now positioned researchers for a successful assault on these new frontiers. Altshuler points to recent discoveries that have opened up new doors to knowledge about the brain and the mind that will underpin the further search for practical clinical applications.

"The mind resides in the activities of the brain cells and is influenced by those cells," says Altshuler. "We now have the techniques to begin to see how the substances in one cell 'talk' to another. And we are learning also how protein is altered in cells as a product of repeated stimulation, the processes that ultimately must be the basis of memory. Like so much that was once science fiction, much of the potential for new knowledge is today a reality.

"We know which nerve tracts of the brain are involved in schizophrenia, and with our new technologies we can test the activity of genes that may underlie an illness at the molecular level. We can inspect the nerve cells, count their numbers and physiologically define their function and abnormalities.

"A particular group of cells that may be the primary source of Alzheimer's disease has been found. In addition, certain forms of that illness are known to be inherited, and links have been drawn to Down's Syndrome (formerly called Mongoloidism). We are tracing the inheritability of depression and mania by means of biological markers and are identifying new neurotransmitters involved in maintaining a proper mental balance."

Altshuler says that researchers in the program are now looking at the molecular basis of memory, an area important in general learning, forgetting and craving drugs and alcohol.

"Given the resources, science will undoubtedly conquer these illnesses of the mind and brain in the next 50 years," he says. Altshuler believes that the health science center is the ideal place for such an endeavor because new information coming from the laboratory can be applied to the clinical situation quickly and effectively.

Funds for the Bio-Behavioral Brain Science Program are being generated through community response, from private foundations and gifts from individuals. Among the donors are: the Communities Foundation of Texas, Inc.; Hillcrest, Hoblitzelle, Jonsson, Meadows and Southwestern Medical foundations; the McFadden Trust of Fort Worth, which recently designated about $4 million in endowed funds for this research; the Miller-Gillespie and Aradine Ard funds; and individuals who remain anonymous.

Funds will be used to attract new and outstanding researchers in the neurosciences and to equip their labs. These new scientists will find excellent opportunities for collaboration in Dallas, and together with those already here should provide the program with great power for further contributions to the field.

"Mental health will be one of the most exciting frontiers in science for the next several decades," Altshuler says. "This community is to be commended for its awareness, sophistication and generosity. These qualities will enable us to be in the forefront in the search for answers."

In addition, the psychiatrist is proud of the professional interest and advisory support the program is receiving. Members of its advisory board include a Nobel Prize winner and a cross-section of top researchers and neuroscience administrators from across the country. They include:

*Dr. Julius Axelrod, chief of the pharmacology section at the National Institute of Mental Health's Division of Alcohol, Drug Abuse and Mental Health and a 1970 Nobel Laureate.

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*Dr. Joel Elkes, distinguished professor emeritus of psychiatry at Johns Hopkins School of Medicine, professor of Psychiatry at McMasters University of Louisville and a founder of the National Institute of Mental Health.

*Dr. Floyd Bloom, former professor and director of the Arthur Vining Center for Behavioral Neurobiology, The Salk Institute in San Diego, and current director of the Scripps Institute, also in San Diego.

*Dr. Seymour Kety, professor of psychiatry and neuroscience at Harvard Medical School, director of Mailman Research Center and NIMH founder.

*Dr. Herbert Meltzer, professor of psychiatry and director of the Mental Health Clinical Research Center at the University of Chicago's Pritzger School of Medicine.

*Dr. Louis Jolyon West, professor and chairman of the Department of Psychiatry at the University of California at Los Angeles and director of the California Institute.

*Dr. Jack Barchas, the first holder of the Nancy Friend Pritzker Professorship in Psychiatry and Behavorial Sciences at Stanford Medical School and Research Scientist Award winner from NIMH.

"The health science center is both proud and excited to be able to help lead the search for answers to problems that are so vital to society," says Dr. Charles C. Sprague, health science center president. "Without the kind of support that this vital need has mustered, this program would not have been possible."

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