The Leader

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Molecular Medicine: The Future is Now

By Diana Lazzell, *Graduate School of Biomedical Sciences*

A one in a million genetic mutation can cause devastating disease. Molecular medicine is changing the way a variety of diseases are treated. Molecular therapies are already in the clinic, treating thousands of patients. From cardiovascular disease to cancer, research occurring right now may have profound impact on your health.

"Molecular medicine is the ability to precisely identify the gene responsible for a disease," explains C. Thomas Caskey, M.D., director- and CEO-elect of The Brown Foundation Institute of Molecular Medicine for the Prevention of Human Diseases.

"It's finding a risk, identifying the risk before it strikes, and then developing therapeutics that intervene with the disease very specifically," he says. Therapies that specifically alleviate disease-causing genetic mutations are now used routinely.

Molecular medicine bases therapeutics upon mutations of the genetic code. Each person possesses 46 chromosomes that contain deoxyribonucleic acid (DNA). This DNA is divided into genes. Each gene provides instructions to make specific proteins. The technology for molecular therapies has its roots in a period of biology where revolutionary advances were taking place. "In the late '60s and early '70s, critical technologies contributed to the development of molecular medicine," Dr. Caskey says.

Using DNA technology, scientists could identify human genetic abnormalities associated with disease and then manipulate the gene in an animal model, such as the "knockout" mouse, to learn more about how the gene functions and how mutation leads to disease.

C. Thomas Caskey, M.D.

"The knockout mouse involves deleting one gene out of the total of approximately 30,000 genes. A wide variety of functional information can be derived from the mouse. For example, the genes responsible for diabetes, seizures and heart defects have been identified using knockouts," Dr. Caskey says.

"When you make a gene interruption and study the mouse, you know that the disease was caused by that defect," he explains. "These mouse knockouts serve as models of human disease." It is the ability to solidly link genetic mutation with disease that opened the field of molecular medicine.

Now scientists can use the known causes of disease to custom -design a biological therapy that corrects the genetic condition.

We all do our best to reduce risk factors for cancer, such as smoking and obesity, but some people were born at risk, carrying a genetic mutation that predisposes them

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WorkLife Celebrates Leadership in Action and the STAR Team

(Left to Right) Gina Chappell; Brenda Gaughan; Lily D'Agostino; Jeannice Theriot; Carol Helton; Alice Hatcher; Linda Carter; Bunny Perez; Angela Doggett; Michael Valladolid; Tom Goka, Ph.D.; Vicki Knutson, Ph.D.; Heidi Porter; Liz Stamey; Ty Williams; Cheryl Spitzenberger; Mary Yehle; Karen Weinberg; Jon Wiener, Ph.D.; and Paul Darlington, Ph.D., are the members of the GSBS staff and the first winners of the STAR Team Award. *Photo by Kim Coffman*

By Pamela Lewis, *Institutional Advancement*

"I am deeply appreciative of and humbled by this award, especially because it honors the memory and leadership of Mike Jimenez," said Paul Darlington, Ph.D., associate dean, Graduate School of Biomedical Sciences, following the presentation to him of the Second Annual Michael J. Jimenez Leadership in Action Award, which includes a monetary award of $5,000.

The award was envisioned by the WorkLife Council and funded by UT Health Science Center President James T. Willerson, M.D., and the Lone Star Legacy Society to honor the late Mike Jimenez, former vice president and chief human resources officer at The University of Texas Health Science Center at Houston.

"Of all the qualities of leadership Mike exhibited, the one that had a great impression on me was his willingness to listen," Dr. Darlington said. He recalled that for Jimenez, coming to the health science center from a career in the Army followed by time at the Houston Independent School District, was something of a challenge.

Perhaps, there is no unit in the health science center as mysterious and misunderstood as the Graduate School of Biomedical Sciences, Dr. Darlington said. "But Mike took the time to listen and to learn about GSBS and the other subtleties of the health science center. As a result, a number of wise and effective policies were developed during his term in office that remain in place today," said the leadership award recipient.

"So, listening is important, and we are wise to heed the advice of Ernest Hemingway which was, 'When people talk, listen completely.' Now Hemmingway also added, 'Most people never listen.' True as that may be, it is not true of effective leaders like Mike Jimenez," Dr. Darlington said.

One other aspect of leadership that Dr. Darlington mentioned is one you've heard before, but it certainly bears repeating, he said. "Everyone can be a leader. You don't need a fancy title, and you don't need to supervise a bunch of people to be a leader. In fact, you don't need to supervise anyone. You demonstrate leadership by example, by what you do every day. And, you know, people notice.

"By your dedication, your creativity, your concern for others, the quality of your work – by all these things – you influence those around you. As a result," Dr. Darlington said, "you can have as great an impact on the people you work with and on the excellence of the institution as anyone in the place."

In closing, Dr. Darlington paid homage to the staff of the graduate school, which as a group, was the recipient of the first STAR Team Award, also envisioned by the WorkLife Council and funded by UT Counseling and WorkLife Services.

The $5,000 cash award is given to an entire work group. All team members must have input as to how the funds are spent within the guidelines for state funds.

"I can think of no better example of what I have just described than the staff of GSBS," he said. "All of them are leaders, and they have inspired each other to provide an extraordinary level of service to our students and faculty. I am delighted – and it is highly appropriate – that they are being honored today as the STAR Team of 2007. Thank you, staff, for making my 25 years here so enjoyable and rewarding."

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Inside:

Lone Star Stampede

The Lone Star Stampede 5K, a sanctioned race with a certified course, will take place, Saturday, April 28, starting at the corner of Holcombe and Bertner in the Texas Medical Center. The race, sponsored by the Texas Exes Houston Chapter and The University of Texas Health Science Center at Houston, is open to runners, walkers and wheelchair participants of all ages.

There will be a 7:55 a.m. start for wheelchair athletes, followed by the run/walk at 8 a.m. The fabled Eeyore's Children's Run will begin at 9.

Entry fees – Before April 7: $22 adults, $11 children; April 7-13: $22 adults, $12 children; race day: $30 adults, $15 children.

Proceeds from the race are used to provide scholarships for deserving Houston-area high school students attending The University of Texas at Austin.

For more information: call Aimee Friend, 713-627-3938, or visit http://www.TexasExes.org and click on Lone Star Stampede.

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