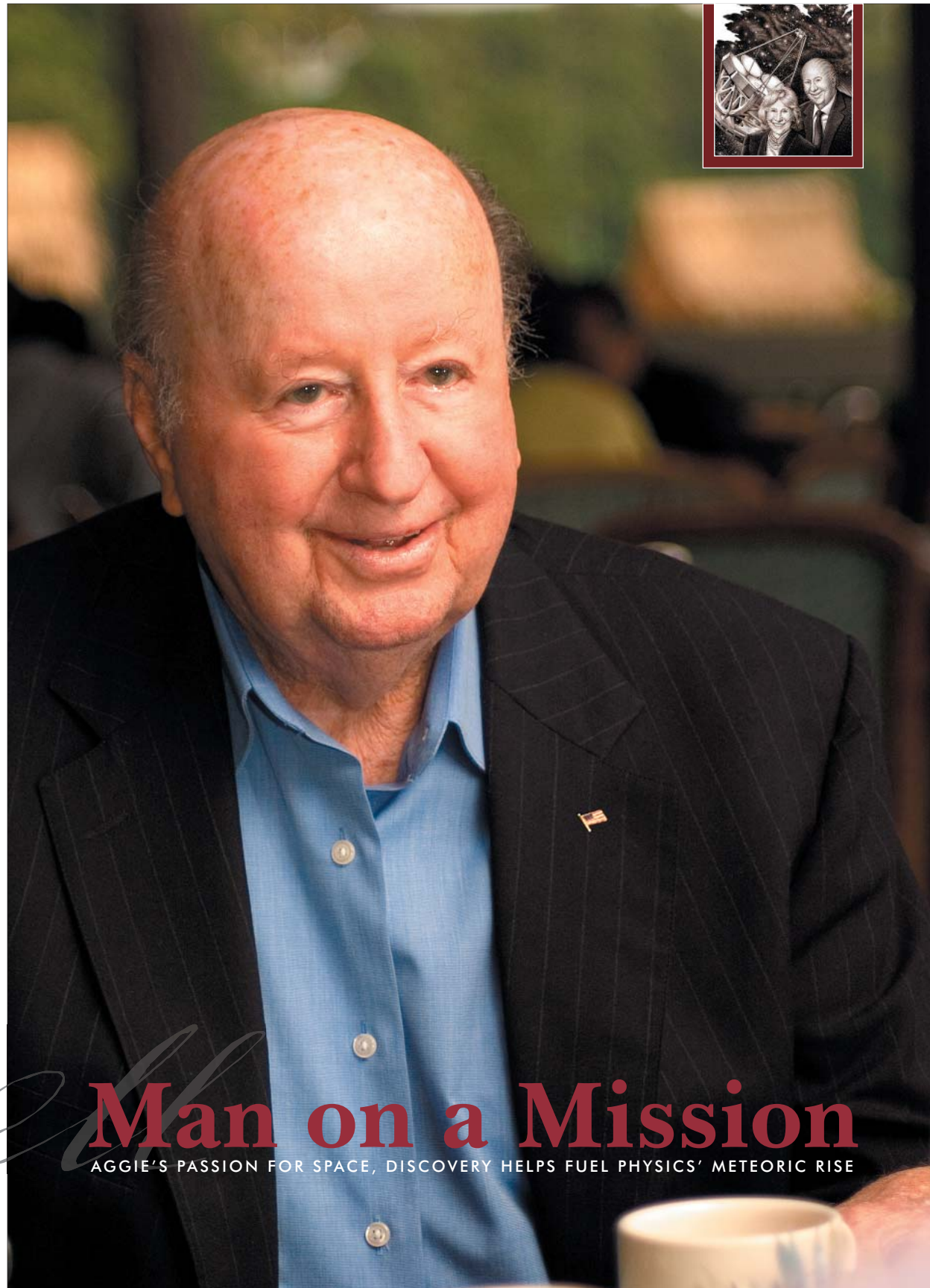


[COVER STORY]



# Man on a Mission

AGGIE'S PASSION FOR SPACE, DISCOVERY HELPS FUEL PHYSICS' METEORIC RISE

PHOTO: © 2005 JOHN LEWIS

*As a senior in high school, George Mitchell couldn't learn enough about physics. Voraciously he pored through textbooks, novels and popular science magazines, reading everything he could get his hands on in an effort to satisfy his curiosity about matter, energy and the broader mysteries of the universe. He even tried his hand at building his own telescope.*

Although he eventually followed his brother Johnny's footsteps to Texas A&M University and the field of petroleum engineering, making a career out of finding oil and gas where no one else could, Mitchell never outgrew his fascination for physics. Six decades later, he has turned that fixation into a phenomenon as the catalyst in a spectacular chain of events destined to catapult Texas A&M's Department of Physics into international prominence. And now, he's armed with the world's biggest telescope.

Thanks to a \$1.75 million gift from Mitchell, Class of 1940, Texas A&M is one of eight partners in the Giant Magellan Telescope, a \$500 million state-of-the-art, next-generation wonder that will produce images 10 times sharper than those of the Hubble and help launch Texas A&M into an academic area where it's never been before—astronomy.

"Hubble is the most important instrument we've had in the past 25 years," Mitchell says. "If the Giant Magellan is capable of pushing the mysteries of space back four times from what the Hubble did, that will be phenomenal."

But for all its unparalleled potential, the GMT represents merely the

culsp of the cosmos where Mitchell's support—not to mention the resulting Texas A&M Physics phenomenon—is concerned.

What began in 2002 as a simple \$800,000 verbal agreement between old friends intended to help bring one of Mitchell's biggest heroes, Cambridge University theoretical physicist Stephen Hawking, to the Texas A&M campus has mushroomed into nearly \$45 million in support from the Houston petroleum engineer/real estate developer and his wife, Cynthia, and spawned a supernova-like legacy, both for the Department and for the future of fundamental physics.

It all started with a telephone call between two old friends, Mitchell and A&M physics professor Peter McIntyre. Mitchell had been watching a PBS special featuring Hawking, in which Hawking revealed that one of his greatest disappointments in physics was the 1993 cancellation of the Texas Superconducting Super Collider (SSC) project.

Mitchell could identify—on several levels. On top of common interest in fundamental physics, he realized he and Hawking also shared a universal disappointment—a particularly painful one for Mitchell, because he was directly involved.

**"HAVING TALENTED PHYSICISTS COME TO TEXAS A&M CREATES EXCITEMENT, WHICH ATTRACTS STUDENTS NOT ONLY IN PHYSICS, BUT ALSO IN ENGINEERING AND OTHER SUBJECTS."**

"George and Cynthia have become extraordinary supporters of our department," said Dr. Edward S. Fry, professor and head of physics. "Out of the total of their gifts in the last three years, \$6.91 million has been for the creation of permanent endowments in the department. Furthermore, because these gifts have provided seed funding for matching gifts, the total of new endowments in Physics in the last three years is more than \$14 million."

## FLASHBACK: PHYSICAL CONNECTIONS

Throughout his successful business career, Mitchell has cultivated interests in philanthropy, civics and global issues ranging from the environment to the implications of science and sustainable technology. However, it is his interest in cultivating personal relationships to which Texas A&M Physics owes its current success.

Back in 1985, it was Mitchell's own research think-tank, the Houston Advanced Research Center (HARC) consortium, that had beaten out prestigious national competition—including FermiLab and other prominent West Coast research powerhouses—to build the highly coveted particle accelerating tube which boasted the potential to redefine high-energy physics. Armed with a powerful magnet developed in part by McIntyre, Mitchell's HARC team had visions of finding exotic sub-atomic particles, such as the Higgs boson and the top quark, as they put to the ultimate test some of the most intriguing theories of physics, including many of Hawking's.

After eight years and \$3 billion spent, the project was abruptly shut down, and all Mitchell and his team had to show for their ingenious hard work was a barren plot of broken land outside Waxahachie, Texas, and the empty shell of an elusive dream. To add insult to injury, rather than

## MITCHELL ON MITCHELL

## MANAGEMENT 101



"I went to school 23 hours a semester. I had to get out in four years, so I took a five-year petroleum engineering and geology program in four.

"I had a tough time financially. At one point, I remember sending my father a wire saying, 'I'm at the top of my class, but if I can't come up with \$50 for room and board, they're going to kick me out.' My father wrote to Sam Maceo, a friend of the family, to ask for the money. Sam gave him \$100—so he sent me \$50 and kept the other \$50."

## FUZZY MATH

"To support myself financially while in school, I started a stationery business. I had agents in every dorm on campus and was making \$300 a month by my senior year.

"After graduation, I took a job with Amoco making \$166 a month."

## PARENTAL CHALLENGES

"I learned how to play tennis up against the wall growing up in Galveston. At Texas A&M, I was captain my senior year—that's why we got beat half the time! Texas and Rice beat us every year.



"When I was 40, I told my children if any of them could beat me at tennis before I turned 60, I would give [the winner] \$500. I had four or five challengers, but none of them ever collected.

"When I turned 60, they asked me if I'd raise it to 70." ■

the Texas-born SSC, Mitchell and the rest of the world now look to Europe's Large Hadron Collider being built at CERN in Switzerland to lead the universal hunt for new forms of matter beginning in 2007.

His regret reignited by Hawking's revelation, Mitchell dialed up McIntyre. In his search for commiseration, he unknowingly inspired a new challenge, one with equally groundbreaking international implications.

"At that time, our department was under a growing threat," McIntyre recalls. "Our excellent group of faculty in theoretical particle physics had been raided by other universities, and fresh raids were on the horizon. We thought the best way to counter such raiding was to make our department a focus of growth

and exciting development in that area of physics. It occurred to us that we might be able to enlist Mr. Mitchell to help us to make Texas A&M an exciting focus for string theory and cosmology, and perhaps also enlist Professor Hawking to spend part of his time here."

After talking with Mitchell, McIntyre consulted with Fry, who suggested that McIntyre call Mitchell back to arrange a meeting to discuss the Department's vision of its own think-tank for physics but on a global basis—specifically, an annual institute featuring Hawking as its centerpiece and namesake to reflect Mitchell's admiration for him.

Joining McIntyre and Fry in both the visioning and meeting were Texas A&M high-energy theorists Christopher Pope and Dimitri Nanopoulos. Pope, a prominent architect of superstring modules of the universe, had earned his doctorate working with Hawking at Cambridge in the 1970s, not to mention

Hawking's respect, admiration and friendship. Nanopoulos, a distinguished professor of physics, has pioneered some of the most important links between the present understanding of high-energy physics and the ultimate unification with superstrings. In addition, Nanopoulos, like McIntyre and Fry, had previous associations with HARC and some of its biggest research and technological contributions.

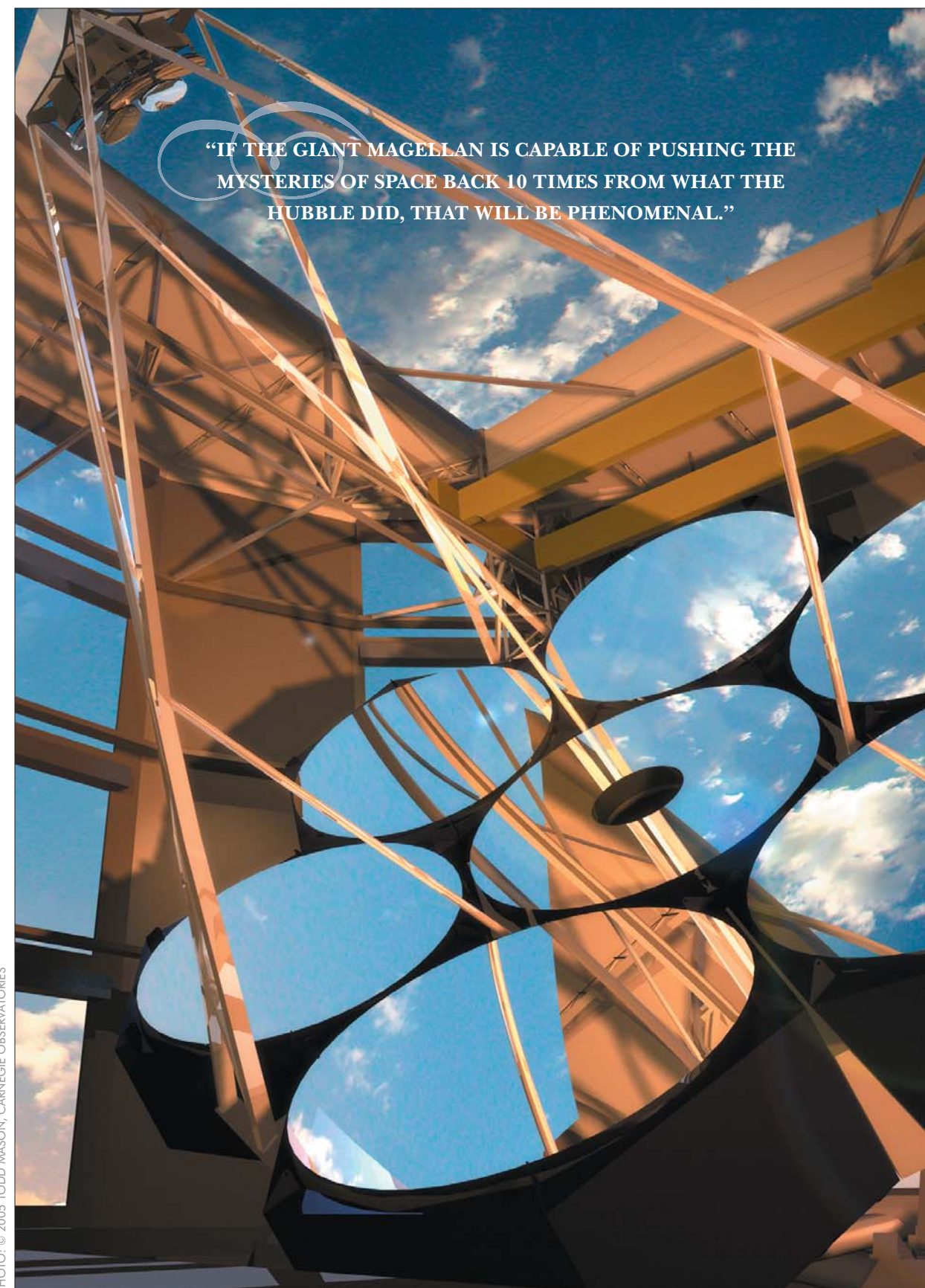
After hearing their proposal, which called for an institute and a chair named for Hawking that, by design, would attract some of the world's most eminent physicists to Texas A&M each year, Mitchell agreed to commit \$800,000 to the project if the Department could pull it off. All that remained was convincing Hawking.

"AS TIME GOES ON, MORE IMPORTANT ANNOUNCEMENTS ARE GOING TO START COMING OUT OF TEXAS A&M."

Ironically, as a result of one dream dashed, Mitchell got to see another fulfilled. Pope contacted Hawking, who agreed to meet with Mitchell and the A&M contingent in Pasadena, California, where Hawking was spending time at the California Institute of Technology.

"He's a wonderful person with a great reputation all over the world," Mitchell says. "We spent about three-to-four hours with him to convince him to get involved with the Texas A&M Department of Physics."

In fact, it was Hawking who suggested that Texas A&M name the institute in honor of Mitchell and the chair for him. Thus, the George P. and Cynthia W. Mitchell Institute for Fundamental Physics and the Stephen Hawking Chair in Fundamental Physics were born. The rest, as they say, is history—or, more appropriately, the future of Texas A&M Physics.



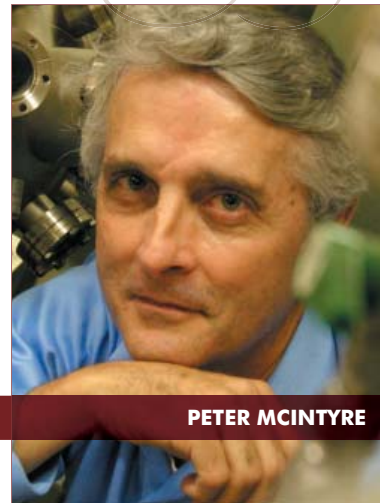
"IF THE GIANT MAGELLAN IS CAPABLE OF PUSHING THE MYSTERIES OF SPACE BACK 10 TIMES FROM WHAT THE HUBBLE DID, THAT WILL BE PHENOMENAL."

PHOTO: © 2005 TODD MASON, CARNEGIE OBSERVATORIES

CURRENT MITCHELL CHAIR HOLDERS



EDWARD FRY



PETER MCINTYRE

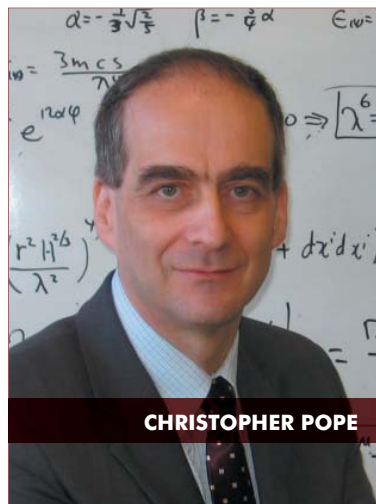


DIMITRI NANOPOULOS

PHOTO: © 2005 ROBB KENDRICK



PHOTO: © 2005 KIM COFFMAN, DANCIE WARE PUBLIC RELATIONS



CHRISTOPHER POPE



HANS SCHEUSSLER



NICHOLAS SUNTZEFF



ABOUT THE PHOTO

George Mitchell '40 (seated, middle) has committed \$35 million toward two Texas A&M physics buildings, to be designed by Michael Graves (seated, left). Also present at the signing ceremony were A&M President Robert M. Gates (seated, right) and (standing, left to right) Science Director of Development Don Birkelbach; Texas A&M Foundation Senior Vice President Jim Palincsar; Physics Professors and Mitchell Chair Holders Dr. Peter McIntyre, Dr. Christopher Pope and Dr. Edward Fry; and Dean of Science H. Joseph Newton.

PRESTIGIOUS ATTRACTIONS

Three years, four landmark conferences and eight additional endowed positions later, the sky truly seems to be the limit for a program—and a broader relationship—whose star is definitely on the rise.

"I'm very interested in trying to help Texas A&M because Texas A&M is very interested in fundamental physics," Mitchell explains. "Having talented physicists come to Texas A&M creates excitement, which attracts students not only in physics, but also in engineering and other subjects. I'm interested in what's happening in the far reaches of space, and I'm equally interested in helping Texas A&M enhance its prestige."

While his previous efforts at A&M enhancement have been limited to the financial, Mitchell's future promotional plans include a foray into the physical. In cooperation with University administration, he's commissioned legendary architect Michael Graves to design two buildings—a five-story, \$12 million facility to house the Mitchell Institute as well as a \$45 million central home for the Department of Physics—that will serve as permanent showpieces, both for quality architecture and the untapped potential of public-private partnerships. The two buildings will be financed through a combination of a \$35 million gift from Mitchell and \$22 million in one-time University funds.

"Hopefully the buildings will be focal points of Texas A&M's campus

that people will want to come to see—beautiful additions to Physics and to Texas A&M," he says.

Beyond buildings and uncharted spheres of knowledge and influence, Mitchell elects to focus on putting his resources where he thinks they can do the most good. His current funding priorities include health research—in particular, Alzheimer's disease as he helplessly watches Cynthia slip further and further into its clutches—and sustainable development, an area where he continues to work with the National Academy of Sciences to find solutions to pressing global social, economic and environmental issues.

As for his alma mater and its many worthy causes, Mitchell firmly believes he can do the most for Texas A&M's prestige by working with Physics.

"I think they have the vehicle that can make it work," he adds. "Much like with the Hubble, as time goes on, more important announcements are going to start coming out of Texas A&M."

"We don't know what dark energy or dark matter are right now, but I think a lot of work can be done and that Texas A&M Physics will play a lead role in it. But we've got to make it produce results. With the GMT [complete in 2016] and some of the world's top people, I give it 10 years."



BUILDING A DREAM



George and Cynthia Mitchell's generous gifts to Texas A&M Physics during the past three years no doubt have played a leading role in the Department's skyrocketing national visibility. However, the couple's most recent \$35 million commitment toward construction of two campus buildings has ensured another unprecedented benefit much closer to home—consolidated teaching and research activities—while also earning them a special place in A&M history.

The Mitchells' latest gift, the largest thus far under Texas A&M's current \$1 billion capital campaign, is the most generous ever made to the University by a living donor. In combination with their earlier multi-million-dollar contributions, this gift ranks the Mitchells among the most financially supportive benefactors in the University's 129-year history.

The two buildings, which will be joined, will serve as the future homes of the George P. and Cynthia W. Mitchell Institute for Fundamental Physics and a second Departmental facility that University officials propose to name the George P. Mitchell '40 Physics Building. The two structures will provide about 155,000-square-feet of floor space for teaching and research in various aspects of physics.

Construction is scheduled to begin in summer 2006. Although plans are still being finalized, Dr. Edward S. Fry, professor and head of Physics, says the Mitchell Institute building will include office space for two-thirds of the Department's faculty as well as a center for national/international conferences and meetings, particularly those related to astrophysics and astronomy. The larger Departmental facility will house research laboratories, offices for the remaining third of the faculty, three new lecture halls, classrooms and new additional undergraduate laboratory space. ■

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