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**ENGINEERING**

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*Alumnus responsible for 600 scientists:* When **Tze-Chiang Chen'79 MS, '85 PhD** was a student, he switched from graduate study in theoretical physics to experimentally-oriented Electrical Engineering, and the EE faculty were not sure how he would fare. But then Prof. T.P. Ma got a call from Perkin Elmer in Wilton, CT, offering a graduate student a summer job with the multimillion-dollar NASA Hubble telescope project. The only grad student still without a summer job was T.C. Chen who had just taken Prof. Ma's semiconductor devices course that also taught about using vacuum systems. Chen took the summer job to help figure out how to coat Hubble's mirrors. In no time, this grad student was coming up with solutions that had eluded many others and began leading the experiments.

Chen continued his Ph.D. work at Yale, with **Prof. Richard Barker '50 BE, '51MEng, '55 PhD** as his Advisor, and also consulted for the Hubble project. He was appointed the chief coating engineer (Hubble mirrors were coated in a gigantic, almost three-story high vacuum chamber). In 1981, Perkin-Elmer awarded Chen a certificate for the development of thin film coating for the primary and secondary mirrors on the NASA Space Telescope. "I knew the space mirror better than anyone else in the world," chuckles Dr. Chen. In large part due to Chen's insights, the Hubble telescope would later be able to reveal the beauty of space as it could previously only be imagined.

In 1999, Dr. Chen was appointed IBM Fellow, because "(Dr. Chen) is known as a leader in the microelectronics evolution whose 'can-do' attitude toward the most difficult technical problems motivates those around him to higher levels of achievement. For more than a decade, he has played a key role in driving IBM's most advanced silicon chip technologies, from research through development into volume manufacturing. Dr. Chen's contributions to advanced bipolar technology, which included a move from research into manufacturing to solve a technical challenge, were critical to the success of IBM's last generation of bipolar mainframe systems. More recently, his contributions to the miniaturization and manufacturing of CMOS memory for current System/390 models have profoundly influenced IBM's technology leadership and been instrumental in enlisting Siemens and Toshiba as partners in a highly successful advanced semiconductor development program."

In 2003, Dr. Chen was promoted to Vice President, Science and Technology, Research Division, IBM, in charge of 600 scientists.

Dr. Chen has kept in touch with Yale. For years, he served as IBM recruiter of Yale undergraduates and grad students; thanks to him, IBM has supported Yale Engineering research projects and had established an IBM Fellowship at his alma mater. Today, Dr. Chen interacts frequently with Prof. T.P. Ma and visits former faculty advisor Prof. Richard Barker. He also speaks highly of Prof. Rimas Vaisnys in whose quantum mechanics class he had received Honors.

And now, T.C. Chen's daughter, a summer intern in Prof. Ma's lab when she was in high school, is **Sarah Chen Yale '06**.

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*Alumnus invented Autopilot:* **Charles M. Young '37**, who passed away May 14, was the inventor of the "Autopilot" for airplanes.

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*Please note:* For the Engineering Grove Street Cemetery tour described in the last issue, please visit www.grovestreetcemetery.org and click on "Self-Guided Tours with Jack Cunningham."