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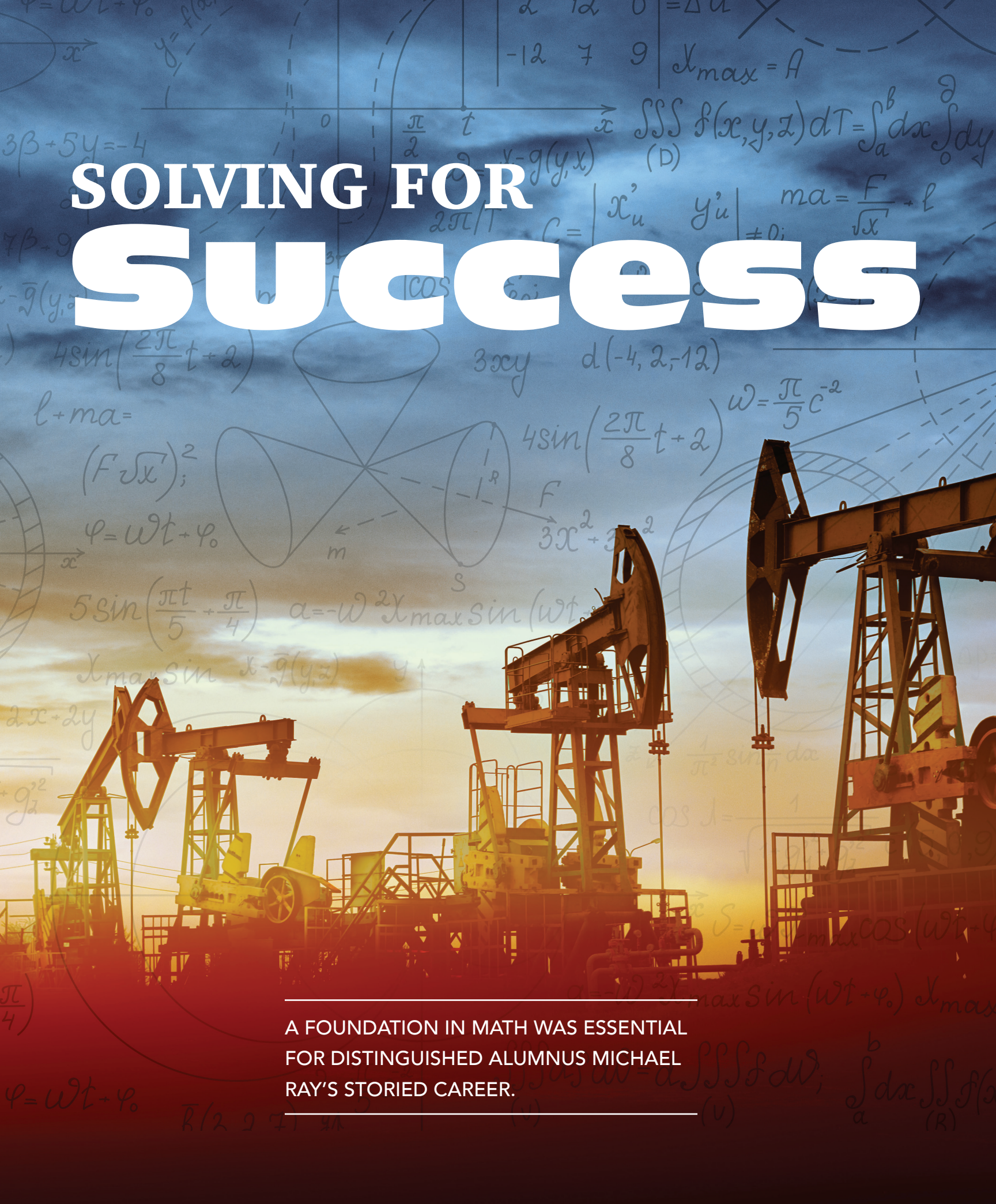

A FOUNDATION IN MATH WAS ESSENTIAL FOR DISTINGUISHED ALUMNUS MICHAEL RAY'S STORIED CAREER.

While some students might be intimidated by math or have a hard time seeing the potential benefits of a math degree, Michael Ray says a math background can serve them extremely well—as it did him. Dr. Ray earned three degrees in mathematics from The University of Texas at Arlington, and that education helped him forge a long and distinguished career in the oil and gas industry.

"Mathematicians can perform in a broad range of environments, and math is the most broadly employable of the STEM areas," he says. "Whatever the future holds when you graduate, there will be jobs that need your skills in problem-solving and abstract thinking."

Ray earned bachelor's, master's, and doctoral degrees from UTA. An internship at Mobil led to a full-time job and a 36-year career with the company, which merged with Exxon in 1999. He started in research and development and received numerous promotions, completing his career as a distinguished science advisor in 2017. His mathematical knowledge definitely came in handy, he says.

"Math can be intimidating, and you will no doubt be challenged along the way, but everything worth doing has hard parts, or seems so at the time," he says. "A math degree teaches you to see connections others don't. You are able to extract essential characteristics because you are able to abstract the problems."

Ray was born in Fort Worth and grew up in nearby Benbrook. He graduated from Western Hills High School, taking summer school after his junior year so he could finish a year early. His older brother was attending UTA and studying physics, a subject Ray also enjoyed.

"I really wanted to learn how to program computers—this was still the era where you used slide rules," he says. "High schools had no computers."

Triple UTA alum Michael Ray.

Michael Ray and Professor Rangachary Kannan in the late 1970s.

"A math degree teaches you to see connections others don't. You are able to extract essential characteristics because you are able to abstract the problems."

He enrolled at UTA as a physics major in fall 1973, less than a month after his 17th birthday. In the early 1970s, job options for physics majors were limited. Realizing this, Ray switched majors to mathematics after his second year.

"Mathematics was something I always enjoyed. Being able to formulate problems and solve them was challenging but very rewarding," he says.

His classes kept him busy, but he found time to join the Fencing Club, where he practiced the saber. Fencing was something that interested him in high school, but Western Hills didn't have a team.

"At UTA we competed against other schools, and it was fun," he says. "I loved fencing saber but boy, was I lousy."

During his last two years as an undergraduate, Ray worked as an intern at Electronic Data Systems, where he learned assembler language programming for IBM 360/370 computers.

"Math and computing were so appealing," he says. "I decided I wanted to work in numerical solutions—back to that formulating and solving problems I loved so much, but now on a grander scale."

He received a BS in mathematics in 1976, and after being advised to think about graduate school by math Professor Rangachary Kannan, he enrolled in UTA's master's program. Dr. Kannan became his faculty advisor.

"He was a wonderful teacher and mentor. That's not to say he was easy," Ray says of Kannan, who later served as department chair from 1996 until he died of Hodgkin's lymphoma in 2000.

In his graduate school days, when he wasn't studying or doing research, Ray enjoyed playing racquetball and intramural broomball. He also liked meeting friends for a beer or a glass of wine at Dry Gulch, an on-campus bar located in the basement of the University Center that closed in 1992. He spent

many evenings in the campus computer lab, in the days when computer technology was rudimentary.

"There was a group of us that worked late at night," he says. "This was the era of punch cards. No online editors. It wasn't unusual for us all to be there well past midnight on a Friday night."

Ray earned an MA in mathematics in 1978 and began working on his PhD under Kannan. His dissertation focused on a class of solvers for a particular type of partial differential equation. In 1979, during the early days of the Space Shuttle program, he got an internship with NASA where he migrated code from flight simulators to desktop computers for use during the astronauts' flight training.

In 1980, math Professor Mike Lord suggested to Ray that he apply for an internship at Mobil. If Dr. Lord hadn't done that, Ray says, he would've never considered going to work in the oil and gas industry.

Instead, Ray got the internship, which became a full-time job when he completed his PhD in 1981. At Mobil and later ExxonMobil, his job titles included director of the Physics and Mathematical Sciences Division, science laboratory director, division manager, manager of strategic research and of basin analysis, and senior research mathematician. In 2009, he was named a fellow of the Society for Industrial and Applied Mathematics for his significant contributions to geophysical computation.

Michael Ray and his wife, Wanda.

Ray and his wife, Wanda, met in 1983 and married two years later. They have long been strong advocates for education. In 2008, they established the Michael B. and Wanda G. Ray Scholarship for Graduate Studies at UTA.

"We wanted to help another generation pursue their dreams," he says. "Unless you have rich parents, you can feel like giving up because there are too many things stacked against you. You know the cost, but the benefits are a bit harder to see. Our country needs more scientific literacy and more people with advanced degrees in the STEM areas."

Ray served on the College of Science Advisory Council from 2017-24, including the last five years as chair. In 2019, his contributions to the University and to society were recognized with the UTA Distinguished Alumni Award.

"I was thrilled to be named as a recipient, but at the same time it was quite humbling to have been chosen," Ray says. "It was truly an honor I did not expect."

After retiring from ExxonMobil in 2017, Ray continued to advise on special projects. He is now fully retired, but since last year has been a member of the UT System Chancellor's Council Executive Committee, which serves as a strategic advisory group for the chancellor.

He encourages students to never stop learning and says UTA is the perfect starting point to help them realize their dreams—whether utilizing mathematics as he did or pursuing another STEM field.

"A lot of the innovations today occur at the intersection of disciplines," he says. "A degree in the sciences, and in particular mathematics, provides the type of education you need for a firm foundation to make those unexpected connections. UTA is a great school to get that foundation, with lots of opportunities to connect across a very diverse group of faculty and students and see things from multiple perspectives.

"Going into a STEM area means a lifetime of learning—true of all areas, but certainly more extensive in STEM," he adds. "What you learn is important, but even more important is learning how to learn."