

# MiraCosta

*Transforming Lives*

*Investing in*  
**SCIENCE EDUCATION**

**Strengthens the  
Economy**

**Connects People  
to Professions**



## DEAR FRIEND OF MIRACOSTA COLLEGE

In the midst of the Great Recession, the coastal North San Diego County corridor—from Carmel Valley to Camp Pendleton—offers hope for future job seekers. Our region's employment opportunities are anticipated to increase by 15% over the next several years—by an additional



**Francisco C. Rodriguez, Ph.D.**  
Superintendent/President  
MiraCosta College

12,740 jobs—and it is clear that MiraCosta College must expand course offerings to meet this growing need. To prepare students for the new jobs of the 21st century, the college plans to update and enhance instructional space and offer new courses in emerging fields, which will position our students for employment at local businesses and help revitalize our local economy.

MiraCosta College's ten-year education and facilities plan—the 2011 Comprehensive Master Plan (CMP)—calls for the modernization and expansion of our science, biotechnology, nursing, and technical health-related careers and job training programs. The CMP presents a clear roadmap to a brighter future, both for our college and the local region. The vision that fuels this plan is centered on the college's commitment to provide exceptional educational opportunities, sound leadership and prudent fiscal stewardship to the North San Diego County

communities we are proud to serve.

In this issue of *Transforming Lives* you will read about the successes of our graduates who have launched promising local careers. We highlight innovative teaching and responsive programs that make MiraCosta College the college of choice for thousands of students entering into the science, nursing and technology fields.

As the community's college, MiraCosta College is committed to providing an outstanding educational experience for our students, responding to the employment needs of our community and demonstrating to you an outstanding return on investment. During an era in which public education is the repeated target of deep and unprecedented budget cuts, we must invest in our community colleges so that we can continue to provide students with high-quality, affordable education and the job training programs they need. At MiraCosta College, we are proud of and reaffirm our values as an open-access institution whose hallmarks of affordability, accessibility and outstanding quality are wrapped around an ethos of care and commitment to the goals of academic excellence, public service and diversity. As the featured stories will attest, our college represents not only a better path for the future; it also serves as a center of hope, possibility and opportunity.

Thank you for your investment in the futures of our students and our college.

Francisco C. Rodriguez, Ph.D.  
Superintendent/President



Military veterans (from left) Charles Restifo, Mario Clay and Thomas Sudnick graduated from MiraCosta College in May 2012

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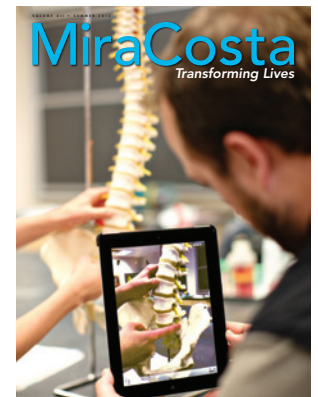
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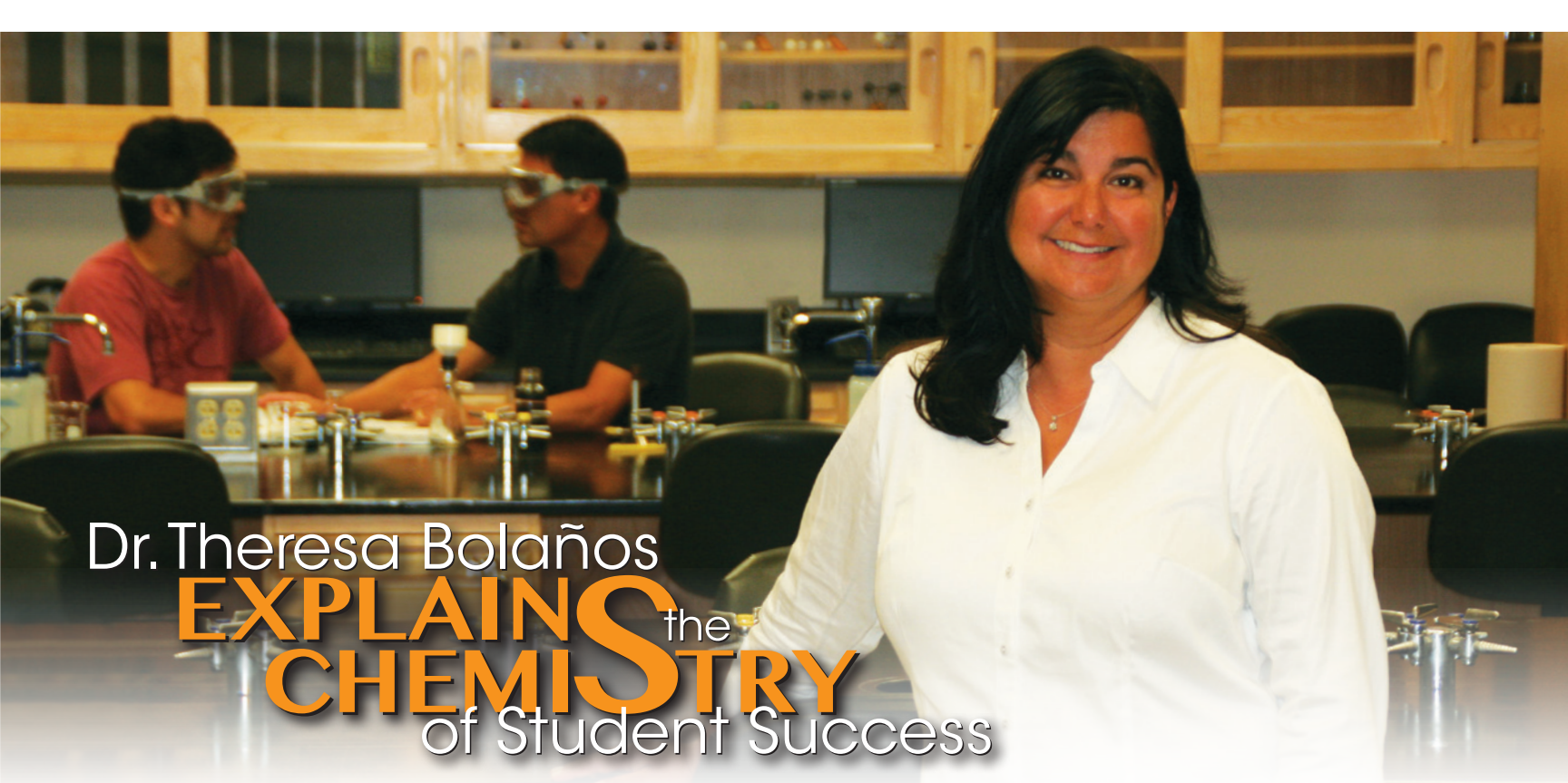
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### On the Cover

In anatomy lab, students use the camera on their cell phones or tablet computers to "take notes," making video recordings for later review.

Photo by Melissa McClure.



Dr. Theresa Bolaños  
**EXPLAINS** the  
**CHEMISTRY**  
of Student Success

“**T**his is my dream job, because it allows me to focus on what’s most important; helping students learn how to study, and how to gain an understanding of the connection between efforts and results,” says MiraCosta College Chemistry Professor Dr. Theresa Bolaños.

Dr. Bolaños, a first generation college student, was educated at the University of Houston and the University of Texas, where she earned a Ph.D. in analytical chemistry. She began her career as a college professor at the esteemed university, Cal Poly San Luis Obispo, but a few years later a career opportunity for her husband meant a move south, bringing Dr. Bolaños in close proximity to MiraCosta College, where she joined the chemistry faculty in 2009.

Dr. Bolaños says she found her dream job here in North San Diego County, where students hoping to begin careers in the region’s burgeoning health and science-related industries seek their preparation at MiraCosta College in record numbers. Dr. Bolaños teaches general and organic chemistry: prerequisites for students aiming to transfer to a university to study one of the sciences, to become a medical professional or to prepare to work in the biotechnology industry.

Providing a foundation for further study, introductory level science courses are recognized at many colleges and universities as “gateway” classes—meaning if students get discouraged at this point they will often abandon their academic aspirations. It is Dr. Bolaños’s dedication to helping students succeed in these rigorous courses that make her a standout instructor.

“What I love about MiraCosta College is that our focus

as professors is on quality instruction. My colleagues are passionate about teaching and student learning; they cultivate a fabulous, student-centered environment. That’s why MiraCosta College is a perfect match for me—my heart is in teaching,” Dr. Bolaños says.

Dr. Bolaños explains the unique challenges community college students face as they begin their academic careers: “Our students are entering school at various times in their lives; often they’re already managing work and home. Some students are undertaking college alone with no family support. I see these students getting frustrated; they assume that if they don’t easily solve problems the first time, that they don’t have the capacity to master course material. With hard work,

“My colleagues are passionate about teaching and student learning.”

dedication and supportive faculty and staff, I believe ALL students can succeed. My hope is that my students embrace the process of scientific inquiry; go on to take more science courses; and end up in any of the hundreds of related careers such as materials engineering, forensics, environmental law or regenerative agriculture.”

While Dr. Bolaños takes extra time with students to ensure that they have the best opportunity for success in the classroom, she has also started a chemistry club where students collectively strengthen their identities as science scholars with social, learning and community outreach activities. At least 40 students from the club and chemistry classes staffed an

see [Theresa Bolaños](#) page 6



# MIRACOSTA COLLEGE'S BIOTECH & MEDICAL



It took a trip back to college for marine biologist Kristin Rauscher (pictured with son Dane, daughter Kendra and husband Mark) to gain the local advantage on employment. Working in a lab focused on drug discovery, Kristin's efforts could lead to the development of effective treatments for life-threatening diseases.

**KRISTIN RAUSCHER** Unlike many Americans who are struggling in this tough economy, Kristin Rauscher often finds herself in the enviable position of having to turn away recruiters. They are drawn to her skills and experience in the biotechnology field and her Certificate of Achievement in Research & Development from MiraCosta College, but Kristin already has a job. And it's a good one.

Kristin, who is also a mother of two, works as a staff research associate at one of the most esteemed marine research institutions in the world: the University of California, San Diego's Scripps Institution of Oceanography (SIO). Although she also has an undergraduate degree in marine biology from the University of North Carolina at Wilmington, it was ultimately her education at MiraCosta College that led her into the lab at SIO, where she examines sediment from the ocean to isolate bacteria in search of compounds that fight drug-resistant staph and cancer.

"I had been having trouble finding full-time work as a marine biologist after moving to San Diego because what I'd been studying on the East Coast isn't what tends to get funded on the West Coast," Kristin explains. "I heard from a friend that one of the really big industries in San Diego is biotech, and then I learned that (Oceanside biotech company) Genentech was helping to fund state-of-the-art biotechnology teaching labs at MiraCosta College. I knew this wasn't just going to

be a classroom where we'd be learning a bunch of theory and just pull out some pipettes once in a while. I knew I'd be learning hands-on applications."

A parallel collaboration between MiraCosta College, Miramar College, California State University San Marcos and the California Institute for Regenerative Medicine (CIRM) led to the formation of a "Bridges to Stem Cell Research" internship program. The program was created

from funds allocated for stem cell research after Proposition 71 was approved by California voters in 2004. It allows for 10 promising students to spend one year working for some of the region's premier research laboratories, including the Scripps Research Institute, Sanford-Burnham Medical Research Institute and the UC San Diego School of Medicine, where Kristin earned a \$30,000 salary (plus \$8,000 for supplies) modeling neurological diseases using induced pluripotent stem cells (stem cells that can transform into other types of cells).

Mike Fino, coordinator of the Biotechnology Program at MiraCosta College, says its focus on contextualized learning is "crucial for developing a home-grown workforce.

"We created these partnerships to develop a technical curriculum that teaches the fundamentals of biotech," he adds. "What a community college really should be is responsive to the workforce needs in



"This program was designed by working scientists and biotechnology companies. Students learn in an instructional laboratory and bioprocessing suite that mimic what they'll find in a real-world work environment."  
**Mike Fino**, MiraCosta College  
Biotechnology Program Coordinator

see **Kristin Rauscher** page 6



# PROGRAMS: A DIRECT ROUTE TO LIFE-SAVING WORK

**ISRAEL HUGHART** Ask Associate Dean Sandy Comstock what she's looking for in students who want to join the Nursing Program at MiraCosta College and she doesn't hesitate to answer.

"The students who succeed are highly organized, highly motivated individuals," she says. "We also like to see someone with a positive attitude, and someone who is empathetic. They also have to be lifelong learners. Nursing isn't a profession where you get your degree and then you're finished. There's always some new skill or new technology that needs to be mastered."

Although she was speaking in general terms, Sandy could be describing Israel Hughart, a 35-year-old single father who recently graduated from MiraCosta College with an associate degree in nursing. Israel has worked in emergency medicine for 16 years, mainly as an emergency medical technician. He comes from a family of medical practitioners—his father is a registered nurse and his brothers are paramedics—but he debated for a number of years if he also wanted to become an R.N.

In the end, it was MiraCosta College's supportive environment and one-on-one time with instructors that convinced Israel to pursue his degree, which meant one year just completing

Israel Hughart, now an R.N. in Tri-City Medical Center's emergency department, is well suited to the rigors of nursing.



prerequisites (including 16 units of science) before he could start the program.

"I've been nothing but pleased with the program at MiraCosta," adds Israel. "It's very broad spectrum in that they don't really focus on one specific aspect of nursing. You do labor and delivery, clinical, the psychiatric ward, ICU rotations...being able to experience it all while a student gives you the ability to see where you want to end up."

Students also experience hands-on instruction in the program's nursing lab, which is outfitted with equipment that includes high-fidelity mannequins that can simulate many medical conditions, teaching students, for example, what to look for in terms of breath and heart sounds.

Of further benefit is MiraCosta College's collaboration with the California State University San Marcos School of Nursing. Students gain from the sharing of resources and a broader range of instructor experience. A transfer pathway is

in place for MiraCosta College nursing graduates to earn bachelor's degrees. However, Sandy notes, those who choose to go directly into the workforce usually have no trouble finding a job, be it in California (which is expected to experience another nursing shortage in 2014) or out of state.

Although Sandy recommends that students work no more than 20 hours while enrolled in the nursing program, Israel says it was through "sheer determination and being stubborn" that he was able to balance working three weekly 12-hour shifts in the emergency room with his responsibilities both as a student and

see **Israel Hughart** page 6

educational booth at the San Diego Science Expo, demonstrating to visitors how a balloon can be skewered with a sharpened stick without popping. The club is planning to visit area middle schools to increase youngsters' exposure to and excitement for learning science topics.

In addition, the MiraCosta College Chemistry Department took on a leadership role in community college science education this spring when it hosted more than 80 chemistry instructors from two-year colleges for the national conference, *Innovations in Teaching Chemistry*. Says Dr. Bolaños, "It was a chance to showcase what we do and learn from colleagues what we can do to become better instructors."

All of MiraCosta College's lab-based science classes, such as chemistry, are typically filled within a few days of open registration, thus creating a significant backlog of students whose plans for a degree in nursing or transfer to a university are impeded because they are unable to enroll in the required prerequisites. In order to ease this bottleneck, MiraCosta College has developed a 10-year master plan that calls for the refurbishing of the college's out-of-date labs and construction of new ones.

"If we have two new labs at the San Elijo Campus, we would be able to offer organic chemistry there and better serve students that live in the southern area of the district. The labs will be outfitted with new and unique kinds of instruments for analysis that are in place in science laboratories and hospitals. Giving students early exposure to advanced technology inspires them and familiarizes them with what actually happens in the workplace," Dr. Bolaños says.

In Theresa Bolaños, MiraCosta College found an inspirational and dedicated instructor who is now helping students prepare for their own dream jobs. ■

our area, so that was the initial motivation. We wanted to serve two purposes: help the vocationally oriented develop skills and abilities to work in a technical lab or technical life science position, and help those who are on a degree path transfer to a four-year university."

For her part, Kristin says the experience she gained in the lab at MiraCosta College and through its internship program "completely opened up the door" for her, "and not just in stem cell science.

"All the techniques I learned from this program, such as sterile or aseptic technique, are standard to any biotech profession," she explains. "What this program and internship did for me was bring me back to my original start with marine biology. Now I'm culturing bacteria instead of stem cells. And for the next five to 10 years at least, I only see the demand for these skills growing." ■

father of his five-year-old son, Hunter.

"Don't get me wrong—it's a ton of work," Israel admits, "but the instructors really want you to succeed."

Israel is one of many well prepared for success: MiraCosta College's student pass rate on the National Council Licensure Examination (a requirement for becoming a registered nurse) is 96.5 percent.

"It was a very long road," says Israel of his quest to become a registered nurse. "From start to finish it's taken me the better part of 10 years to make it happen. But when it comes down to it, we've all got nothing but time." ■

## Charitable Gift Annuities: A Reliable Investment with Great Returns to You and Your Community

**A gift annuity is a simple contract between a person like you and a charitable organization like ours.** With a gift annuity you can make a gift of cash, stock or other asset to the MiraCosta College Foundation. In exchange, we will pay you fixed income at a fixed rate that never changes—no matter what the economy does.

**How much you will be paid is based on your age at the time you make the gift.** And after a lifetime of payments to you, any remaining funds automatically go to support our mission to transform lives in our community through education. Because the gift annuity ultimately supports the foundation, you receive an income tax deduction for your gift.

**Charitable gift annuities pack a lot of advantages for you:** attractive fixed payment rates that last a lifetime, options that include funding for one or two people, income tax benefits, possible capital gains benefits if funded with stock and the option to defer for a higher rate. Gift annuities replace the uncertainty of stocks and CDs with the reliability you deserve.

To learn more contact Linda Fogerson at 760.795.6775 or [lfogerson@miracosta.edu](mailto:lfogerson@miracosta.edu) or go to our website [www.miracostalegacy.org](http://www.miracostalegacy.org).



Theresa Heyden found that charitable gift annuity benefits were too good to pass up.

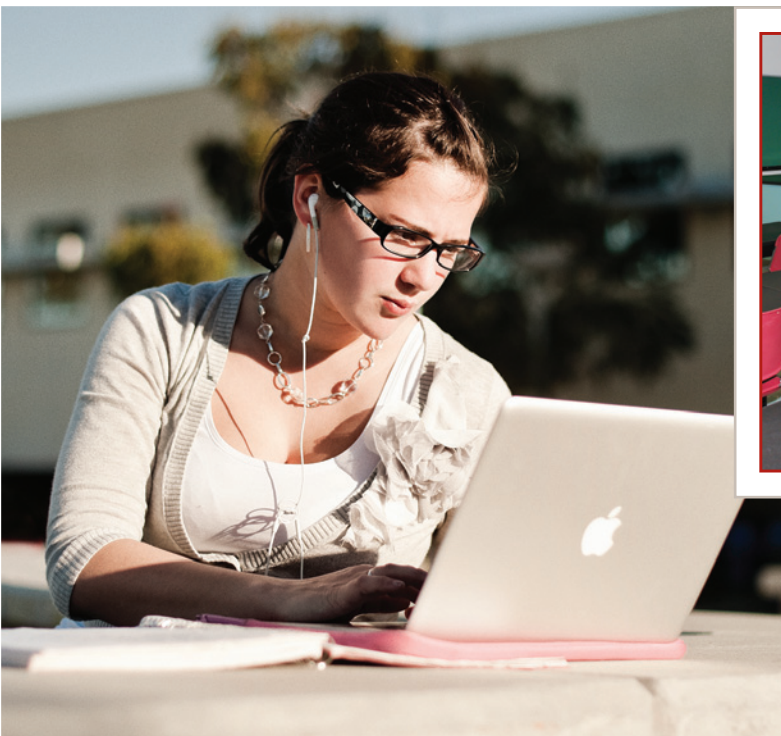
### Sample Gift Annuity Rates

Age	Rate
70	5.1%
75	5.8%
80	6.8%
85	7.8%
90	9.0%

# Preparing Students with Affordable High Quality Education for High Quality Jobs in our Community



Upgrades to classrooms, labs and equipment will improve our capacity to support students in achieving their goals.



**The planning process prompted MiraCosta College to strategically realign the college's plans to better meet community needs:**

**Transfer Education.** The college will improve its course offerings in the fields that will best support our region's employment needs and

facilitate timely transfer to a four-year university. The plan calls for adding and upgrading existing classroom space and converting the San Elijo Campus into a transfer academy. This will provide local high school graduates and returning students with the resources they need to easily transfer to a California State University or University of California.

**Affordable Education.** Students and their families are getting squeezed by the ever-increasing costs of attending college and diminishing state support for public higher education. Students attending MiraCosta College can save as much as \$35,000 on their way to a four-year degree. This plan will increase opportunities for local students to earn college credits specifically in the areas of science, health-related careers, biotechnology, nursing and technical job training programs.

**Veterans Services.** The college currently has more than 800 military veterans and 340 active duty military attending classes. Many veterans returning from war zones face a host of challenges, including post-traumatic stress disorder and permanent disabilities. Our plan allows for an upgrade and expansion of veteran services so that our service members have the support they need to complete their education and enter the civilian workforce.

**Technology Updates.** Today a prerequisite for any employment is fluency in modern technology. To better prepare our students, we will be updating obsolete electrical systems, wiring and equipment for computer technology and Internet access; upgrading career and vocational classrooms, labs and equipment; and upgrading technology and facilities to improve and expand online classes for local students.

Our region's employment growth in high-wage professional, scientific and technical service jobs has increased a remarkable 22 percent over the past eight years. These sectors together with real estate, health care, social assistance and finance will continue to grow in double digits into 2020.

"We collected this information as we prepared the college's 2011 Comprehensive Master Plan," explains college President Francisco Rodriguez. "The plan sets MiraCosta College on a 10-year course to most effectively and efficiently meet the region's educational needs."

By identifying and quantifying these issues, the college is now in position to proactively partner with the region's employers and respond to our students' demands for course offerings that will prepare them for the new jobs of the 21st century.

The college is working with its Board of Trustees and community stakeholders to develop a fiscally responsible plan to address these needs. To learn more about the plan's development in the coming months, visit our website at [www.miracosta.edu/ourplan](http://www.miracosta.edu/ourplan). ■



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**P**resident's Circle members were invited to celebrate the holiday season at Carlsbad's Museum of Making Music, where they enjoyed touring the museum, bidding in a fundraising auction, and a concert by MiraCosta College's own Matt Falker and Earth, Wind and Fire saxophonist Gary Bias.

MiraCosta College President Francisco Rodriguez (right) and Joe Minner



Peter York, publisher, *North County Times* (left) and wife Merlene, MiraCosta College Foundation board president



## The President's Circle: Making a Difference for MiraCosta College

The President's Circle was formed to help provide a source of unrestricted support to aid the college president in sustaining programs vital to our mission such as funding scholarships for deserving students, stimulating new academic programs and enhancing college outreach to the community.

Members of the President's Circle are alumni, parents, friends, and business and community leaders who form a circle of support for MiraCosta College with a minimum gift of \$1,000.

For more information, contact MiraCosta College Development Officer Cynthia Rice at 760.795.6652 or [crice@miracosta.edu](mailto:crice@miracosta.edu).



Linda Fogerson, the foundation's executive director (left) with college patrons Bob and Elaine Algeo



Bruce Bandemer, foundation board member with wife Kelly and children

