THE DCCCD STEM INSTITUTE

Funded by the W.W. Caruth, Jr. Foundation at Communities Foundation of Texas

DCCCD STEM INSTITUTE 2013-14

STEM

SCIENCE TECHNOLOGY ENGINEERING MATH

The DCCCD STEM Institute engages science, technology, engineering, and mathematics (STEM) students from all seven colleges of the DCCCD.

Through scholarship support, mentoring by District STEM faculty members, professional skill development seminars, engagement with like-minded peers, and interaction with university and industry professionals, participating STEM Scholars are comprehensively supported as they pursue their Associate degrees and prepare for transfer to four-year universities.

The DCCCD STEM Institute provides essential tools to help these students prepare to become successful STEM professionals in North Texas after completing their degrees.

SCHOLAR INSIGHTS

"Before the STEM Institute I wasn't focused on my career. I was just studying to get a job.

Now I see I need to approach my career in a more comprehensive way, not just studying but looking at internships and developing myself in other ways.

STEM SCHOLAR SELECTION

Participating students, known as STEM Scholars, are selected through a competitive application process. STEM Scholars are eligible for books and tuition benefits based on meeting participation criteria.

- 109 STEM Scholars selected from across all seven colleges of the DCCCD

3.72 average GPA; 3.0 minimum required GPA

A TRANSFORMATIONAL EXPERIENCE

"A young man dressed in a suit and tie approached me. 'Professor Bailey, how are you doing?' he asked. I didn't recognize him, so I assumed he'd just read my name tag. When I asked which DCCCD college he attended, he chuckled. 'My name is Jorge. You taught me Algebra and Trigonometry last semester,' he said.

I was astonished. The Jorge I remembered had been an excellent student. He was sharp and had asked some insightful questions in class. He'd even corrected my mistakes on the board a time or two. But Jorge had always been very shy and often came to class looking like a typical disheveled college student.

But here was Jorge, now a nicely poised, well dressed young man. His transformation in just one semester was fantastic. This speaks volumes about the power of the STEM Institute on these students. I know that it makes a great difference for students like Jorge, and I look forward to its continued impact on these young people. I feel honored to be a part of the Institute.

Michael Bailey
STEM Faculty Fellow
Brookhaven College

STUDENT MENTORING

STEM Faculty Fellows are highly motivated, full-time members of the science and math departments from each of the colleges of the DCCCD. STEM Faculty Fellows create personalized mentoring plans for their STEM Scholars and participate in Institute activities with them.

- 17 STEM Faculty Fellows mentored 109 STEM Scholars during 2013-14
- STEM Scholars met with their mentors throughout each semester
- A private social media platform enabled STEM Scholars and Faculty Fellows to connect throughout the year engaging in cross-discipline discussions

STEM FACULTY FELLOWS ACADEMY

STEM Faculty Fellows attend professional development sessions each semester. These meetings emphasize instructional and mentoring strategies that benefit both STEM Scholars and the hundreds of additional STEM students that each STEM Faculty Fellow teaches each year. DCCCD partners with the National Alliance for Partnerships in Equity (NAPE) to provide gender equity training as part of these sessions.

- The Academy included sessions on gender micromessaging with NAPE as well as an introduction to problem-based learning
- STEM Faculty Fellows learned valuable insights and trends to use with both their STEM Scholars and the other community college students they teach each semester

UTEACH COMMUNITY COLLEGE MODEL

New for 2013-14

Supported by the Texas Instruments Foundation, DCCCD has partnered with UNT, UT Arlington, and UT Dallas to enable STEM Scholars to participate in UTeach, a science and math teacher preparation program. STEM Scholars interested in a career in STEM education can take the first two UTeach courses (STEP1 and STEP2) at any of these universities at no cost, all while continuing their studies at DCCCD.

- One STEM Scholar piloted this new project by successfully completing STEP1 at UT Dallas while continuing her studies at DCCCD
- Additional STEM Scholars interested in a career in STEM education are expected to participate this fall

EFFECTS OF MENTORING WITH FACULTY FELLOWS

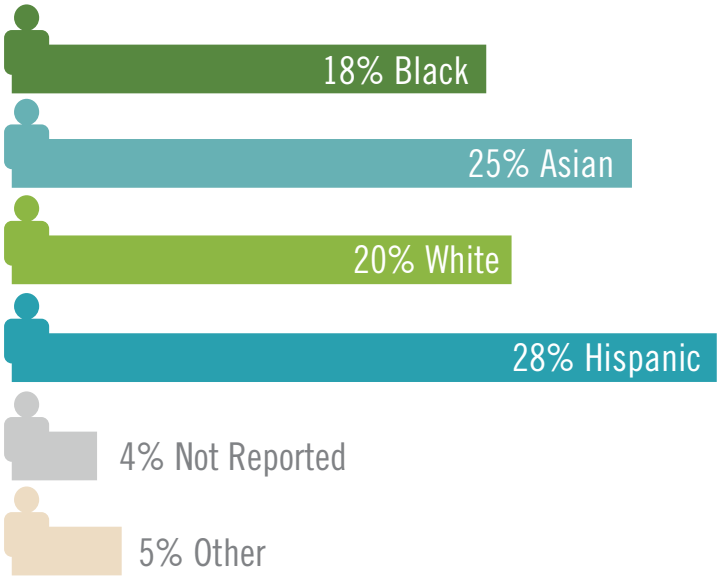
"The mentor program undoubtedly had the most impact on me. My mentor was able to provide help in attaining some of my short-term education goals like transferring and acquiring an internship.

The mentoring also benefited me by increasing my communication skills. I believe that I am now able to speak effectively to a STEM professional, and as a result of this, I now feel confident in my presentation and speaking skills.

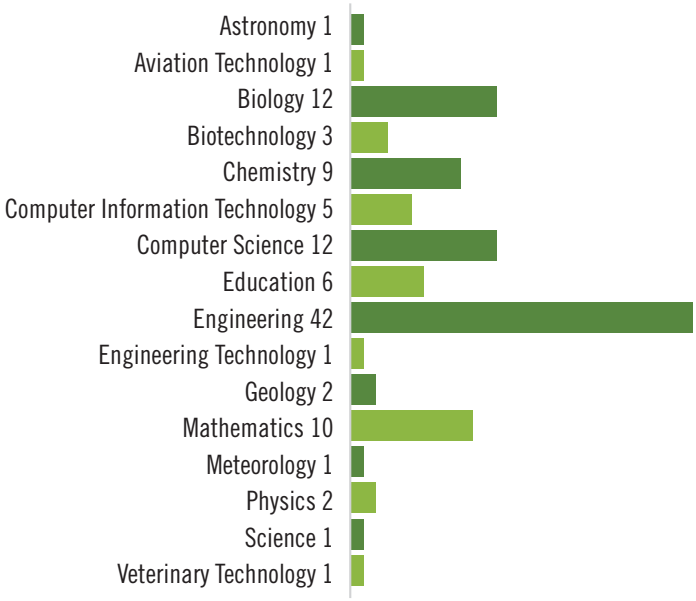
"My mentor had the biggest impact on me. She supported my goals and celebrated my accomplishments. It meant a lot to me because my family does not really understand how important some of my accomplishments are.

2013-14 STEM SCHOLARS PROFILE

ETHNICITY

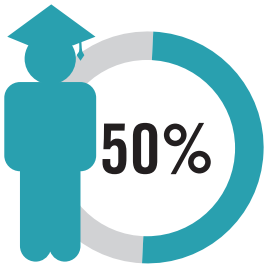


PROGRAM OF STUDY



GENDER

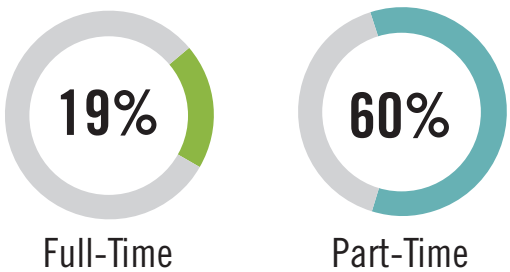
Of the 40 female students, 31 were minority.



First-Generation College Students

75% Received Financial Aid

EMPLOYMENT STATUS



VALERIA LUJAN
Eastfield College

Valeria Lujan joined the DCCCD STEM Institute in fall 2013, which she says has provided her with an incredibly diverse set of skills. In fact, she used many of the lessons she learned from her STEM Faculty Fellow to present a research project and receive the top award at a recent scientific competition.

This summer, Valeria will pursue her interests in chemical and environmental engineering by working with a team of seven other DCCCD students (three of whom are also STEM Scholars) in the NASA Reduced Gravity Program.

Their group project on aspects of crystal growth was one of only four community college proposals selected for the program nationwide. This fall, Valeria will continue her participation in the DCCCD STEM Institute at Eastfield College. She plans to transfer to Texas A&M University in spring 2015.

2013-14 STEM SCHOLARS OUTCOMES

OUTCOMES

95% Maintained a GPA of 3.0 or above

57% Transferred or plan to transfer to a four-year university by fall 2014

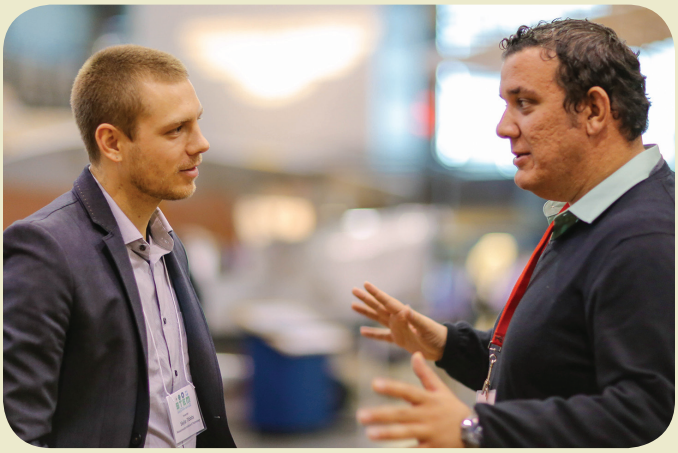
29% Plan to continue their studies at DCCCD during the 2014-15 academic year

29% Graduated with a DCCCD Associate STEM degree by May 2014

SEMINARS AND PROFESSIONAL DEVELOPMENT EXPERIENCES

STEM Scholars attend Institute-specific seminars designed to expand their professional skills, introduce them to STEM career possibilities, and connect them with internship and summer research opportunities.

- Key topics included transferring to four-year universities, career opportunity awareness, and information on networking and professional skills
- Smaller groups attended field-specific visits to corporations and four-year universities
- The spring STEM Summit featured keynote speaker Skylar Tibbits, Director of the Self-Assembly Lab at MIT



Skylar Tibbits (left), Director of the Self Assembly Lab at MIT, chats with a STEM Scholar following his keynote address at the DCCCD STEM Summit in April 2014.

OMAR ROA
Brookhaven College

Omar Roa's passion for computer science and software engineering drew him to begin his studies at Brookhaven College. He was doing well when he joined the DCCCD STEM Institute, but he has flourished as a STEM Scholar.

Support from the DCCCD STEM Institute has enabled him to attend school full-time and dedicate himself to opportunities that will enhance his academic career, including serving as a laboratory assistant at Brookhaven College and actively participating in the college's Future Extreme Engineers Club.

This summer he's working as an information technology intern at Hunt Oil, an opportunity that Dr. Peggy Shadduck first encouraged him to pursue. Omar is currently deciding which four-year university he'll transfer to in fall 2014.

The DCCCD STEM Institute, he says, has inspired him to pursue building his own software company.

19 scholars are participating in internships and research opportunities in summer 2014