

STEM COUNCIL

Science • Technology • Engineering • Math

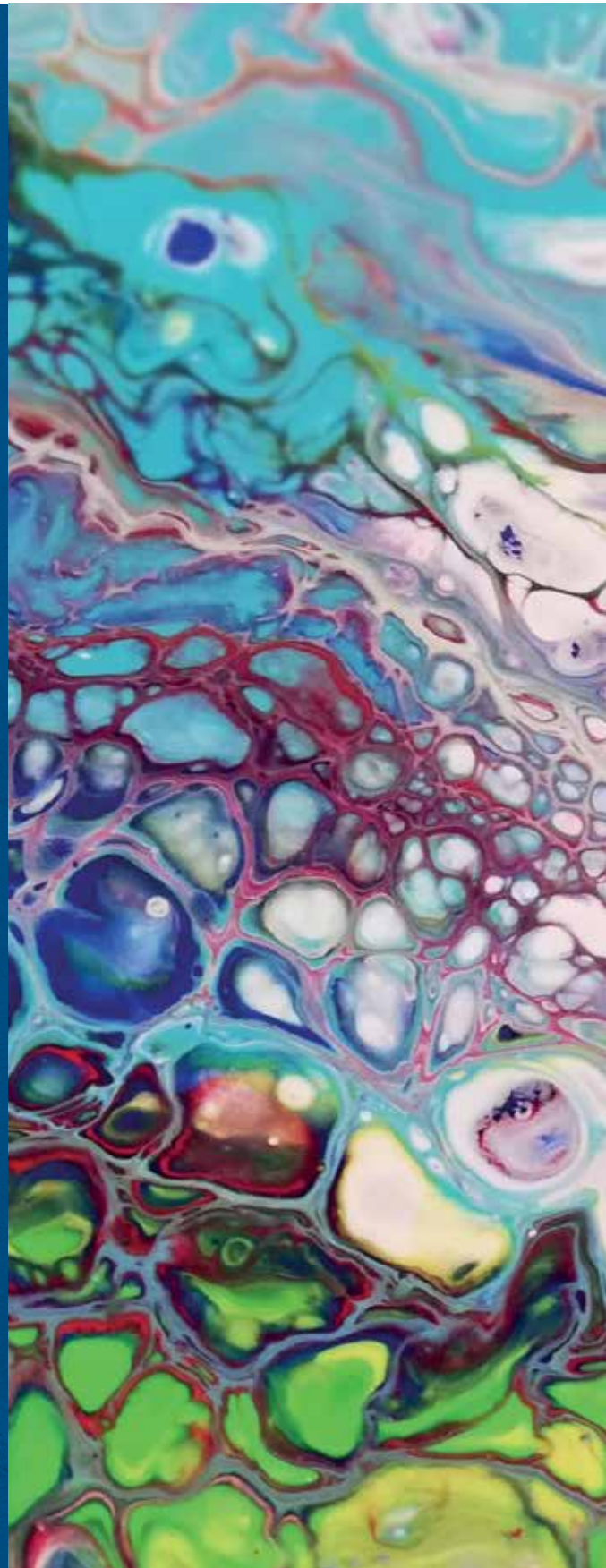
SAN JACINTO COLLEGESM



2022 ANNUAL REPORT

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Letter from STEM Council Co-chairs

Dear San Jacinto College faculty, staff, administrators, and community:

This year the STEM Council celebrates the return to many community-centered events that were impossible during the last two years. Now we can celebrate the accomplishments and advancements of our students, faculty, staff, and administration.

Throughout the year, student success and excellence have led our efforts. As 2022 progressed, on-campus events filled our buildings with energy and amazement, especially when children discovered the wonders of STEM.

In the spring, during the STEM Symposium, high school students toured the South Campus and participated in demonstrations in the Science and Allied Health and the Engineering and Technology buildings. They also met with educational planners and financial aid staff to consider their next steps. For the first time in three years, 100 community members enjoyed a stargazing event. Professor Heather Dalton spent weeks training volunteers to operate the telescopes to prepare for an evening looking at the heavens. Pasadena ISD students also returned to our Central Campus for the annual STEAM Fair. This day included judging by College faculty, culminating in an awards ceremony.

Over the summer, Central Campus opened its doors to host a STEM Open House, where students saw demonstrations, connected with industry, and enrolled in classes. Central Campus also opened the Anderson-Ball Classroom Building, which is the nation's largest mass timber instructional building and new home for the campus robotics lab. North Campus hosted the Girls Rise Up program, pairing dancing with exposure to different STEM careers through talks by female STEM faculty districtwide.

This fall, partnering with Communities in Schools, we hosted more than 750 children and their families

on the North and South Campuses for two nights of faculty- and student-led demonstrations. Kids peered through microscopes to see bacteria that might grow on cell phones, examined their own fingerprints, and uncovered the wonderful world of fossils, minerals, and rocks. They also interacted with robots, let physics demonstrations take them for a ride, and tested whether they have genes that heighten flavor sensitivity.

Our San Jac students look beyond our campuses for research and presentation opportunities. Dr. Radia Redjimi is preparing her students Raul Diaz and Estevan Salinas for an internship at CERN, the European Organization for Nuclear Research. They have completed their safety training through UT Health in the Texas Medical Center and will leave for Switzerland in spring 2023. Our students also excelled nationally, with Muhammad Zain winning the John Britt Poster Presentation Award in STEM at the Great Plain Honors Council annual meeting with his research "The Impact of Monoculture Turfgrasses on Soil Nutrient Content in Southeast Houston." He competed against students from six states and more than 80 honors programs.

San Jac is also building bridges to Rice University through the Take Flight STEM Pathway, which will help students transfer to Rice, and the AIM for STEM Success Program, which provides professional development for our math and college prep faculty.

Through the El Camino al Éxito (The Pathway to Success) Department of Education Title III STEM grant, San Jac welcomed three resource and inclusion specialists at North, Central, and South Campuses. They connect students with resources, professional development, and skill sets before they graduate and transfer. The grant also added a transfer specialist and an external learning coordinator to help students transfer and find internships and co-ops.

Higher Education Emergency Relief Funds helped

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Letter from STEM Council Co-chairs

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purchase five Anatomage tables, advanced 3D anatomy visualization systems and virtual dissection tables, to support biology and health science students. In June, San Jac hosted U.S. Under Secretary of Education James Kvaal for a roundtable discussion and tour of the South Campus Science and Allied Health Building. Kvaal learned how we not only used HEERF funds and 3D-printed face shield brackets for local health care workers but also partner with industries and offer undergraduate research opportunities. We were proud to show the impact community colleges make on our nation.

Science faculty and staff have outdone themselves, earning recognition for their efforts. Dr. Jose Nuñez, South Campus chemistry professor, was San Jac's Minnie Piper nominee and an Excellence Award winner. Another South Campus chemistry professor, Dr. Phuong Doan, also won the Excellence Award and was named the Honors Faculty of the Year. Likewise, James Albritton, South Campus natural sciences division operations coordinator, received the College's Excellence Award for his data-driven decision making. Dr. Ann Cartwright, retired chemistry professor who continues tutoring students, received the American Chemical Society - Greater Houston Section's Mamie W. Moy Distinguished Service Award for sharing chemistry with the community. Although well-deserved, the recognition these STEM faculty and staff have received represents a fraction of the excellence students find in all STEM departments.

We thank Dr. Teddy Farias, North Campus dean of health and natural sciences, for his contributions as STEM Council co-chair. His three-year term ended in August 2022. Under his leadership, he helped maintain normalcy amid pandemic uncertainties and establish an endowment that will provide scholarships for San Jac STEM students for years to come. We appreciate his dedication.

The STEM Council also welcomes Dr. Kelly Mizell, Generation Park director of instructional services, as the new co-chair. She looks forward to advancing the College's STEM goals. Mizell has been with San Jac since 2004. Between 2016 and 2019, she facilitated the college-wide Pathways Initiative to streamline students' progress through the College and remove barriers to their degree completion and successful employment or transfer.

With so many activities College-wide, this letter provides only a snapshot of the work our STEM faculty and staff have undertaken this year. The STEM Council looks forward to the challenge of increasing access for our community and helping students reach success in 2023.

KELLY MIZELL, PH.D.

Director, Instructional Services
Co-chair of STEM Council

LAMBRINI NICOPOULOS, M.S.

Department Chair, Life Sciences
Co-chair of STEM Council

Introduction to STEM Council

WHO WE ARE

The San Jacinto College STEM Council increases awareness of education and career opportunities in science, technology, engineering, and math. Since Houston ranks among the top 10 cities for STEM careers, the council sponsors STEM activities throughout the College and region. The council also works with community members to promote STEM fields, while forging strong partnerships with universities and industries for further education and workforce training.

HOW WE SUPPORT STEM AT SAN JAC

STEM education is a critical part of San Jac's academic focus, and the STEM Council advances student success in STEM throughout the College and community.

Houston's energy, medical, and aerospace industries rely on STEM graduates, and STEM training allows students to achieve solid, high-income careers. In addition, the Texas community college funding model awards Student Success Points for student success in STEM fields.

THE PURPOSE OF THE STEM COUNCIL IS:

- To provide strong leadership to the College and the community in advancing the role of STEM
- To capitalize on STEM efforts already underway at the College
- To serve as a recommending body to the Strategic Leadership Team
- To identify and expand a variety of learning and internship opportunities for P-16 and workforce/industry partnerships
- To identify alignment concerns and gaps in offerings
- To recommend actions to increase student success in STEM programs



Meet the Co-chairs



DR. KELLY MIZELL (Co-chair 2022 - present) serves as director of instructional services at the new Generation Park Campus. Holding a Doctor of Philosophy in wildlife and fisheries sciences from Texas A&M University, she worked as a wildlife biologist for the Florida Fish and Wildlife Conservation Commission before beginning a career in education. Mizell also holds a Master in Biological Sciences and a Bachelor of Business Administration from Stephen F. Austin State University. She taught Advanced Placement biology, chemistry, and oceanography at Sam Rayburn High School in Pasadena. Now in her 17th year at San Jac, she has served as the director of pathways and special initiatives, natural sciences department chair, and biology faculty. She received an NISOD Excellence Award and earned lifetime status in the Distinguished Faculty program. Mizell is passionate about the natural world and the amazing animals with which we share the planet. Hoping to inspire future generations, she has shared this passion with her students and her son.



LAMBRINI NICOPOULOS (Co-chair 2020 - present) is the department chair of life sciences at the South Campus, where she has taught biology since 2005. During her career, she has been recognized for her commitment and excellence in teaching, including earning the NISOD Excellence Award, representing San Jac as its Minnie Piper nominee, and being recognized as a distinguished professor with lifetime status at the College. Nicopoulos is also the co-advisor for the Alpha Gamma Zeta chapter of Phi Theta Kappa Honor Society, which has earned state and national recognition. Her dedication to the College and to students stems from her own past as an Associate of Arts in chemistry alumna. Nicopoulos holds a Bachelor of Science and a Master of Science in biological sciences from the University of Houston-Clear Lake. She is the embodiment of a San Jac student success story.

Campus STEM Coordinators



DR. JEAN NONO, a Central Campus chemistry professor, holds a master's degree and Ph.D. in organic chemistry with a major in medicinal chemistry from the University of Yaoundé 1 in Cameroon. His dissertation focused on identifying selective inhibitors of the glycolytic pathways in the *Trypanosomatidae* parasites that cause sleeping sickness and Chagas disease and discovered new selective inhibitors with known mechanisms of actions through synthesis and extraction from medicinal plants. His professional interests include applying medicinal chemistry to drug discovery, organic synthesis, and chemistry education. He also has a passion for mentoring students. He has taught chemistry for more than a decade and enjoys breaking down abstract concepts for his students.



NEIL JODY, a North Campus mathematics professor, earned his Bachelor of Science and Master of Science degrees from the University of Houston. In addition to working full time at San Jacinto College since 2016, Jody is a proud alumnus, having graduated from the College with an Associate of Science degree in mathematics.



DR. SHEEMA NASIR, a South Campus anatomy and physiology professor, completed her undergraduate studies at St. Joseph's College in New York and received her M.D. from the University of Kansas School of Medicine. She worked as an OB-GYN at her private practice for eight years before working for the Sindh Government Health Department for six years. Nasir received her lab technique certification from the University of Texas Medical Branch at Galveston and participated in breast cancer research studies from 2002 to 2008. Since then, she has taught as an adjunct professor at various Texas institutions from 2009 to 2016, when she began teaching full time at the South Campus.



DR. TYLER OLIVIER, Generation Park Campus STEM department chair and biology faculty member, teaches General Biology I and II to majors and non-majors and is a member of the honors faculty. Olivier received his Ph.D. in evolutionary and environmental biology from the University of Louisiana, where he studied amphidromous shrimp, specifically *Macrobracium ohione*, migrations in the Atchafalaya and Mississippi rivers. His professional interests include ecology, conservation biology, and zoology. Beyond inspiring the next generation of scientists, Olivier focuses on service learning and diversity, equity, and inclusion.

STEM Council Members

NAME	TITLE AND DEPARTMENT	LOCATION
Debra Acuff	Department Chair, Management/Professional Services	North
Rhonda Bell	Dean, Health and Natural Sciences	Central
Danna Benefield	Resource and Inclusion Specialist, Grant Funding	South
Ann Cartwright*	Retired Chemistry Faculty/Tutor	
Danielle Diaz	Resource and Inclusion Specialist, Grant Funding	Central
J.F. Dzuryak	Professor, Geology	Generation Park
Adriana Elizondo	Director, Advising, Career, and Transfer	Central
Teddy Farias	Dean, Health and Natural Sciences	North
Janis Fowler	Director, CPD Aerospace Education and Workforce Development	EDGE Center
Connie Gomez	Department Chair, Physical Sciences	South
Susana Gonzalez	Director, Safety/Health/Environment/Risk Management	District
Scott Hairston	Director, Grants Development	South
Neesha Hosein	Coordinator, Internal Communications	District
Tatyana Ivanova	Professor, Engineering	South
Neil Jody	Professor, Mathematics/STEM Coordinator	North
Marco Lozano	Research Programmer Analyst II, Institutional Research and Data Science	District
Ryan Martinets	Department Chair, Mathematics and Engineering	Central
Kelly Mizell	Director, Instructional Services/STEM Council Co-Chair	Generation Park
Nelson Montelongo	Coordinator, STEM External Learning, Grant Funding	North
Crystal Moreno	Coordinator, Transfer Pathway, Grant Funding	North
Courtney Morris	Senior Coordinator, Communications Projects	District
Sheema Nasir	Professor, Biology/STEM Coordinator	South
Sharon Nelson	Department Chair, Life Sciences	Central
Lambrini Nicopoulos	Department Chair, Life Sciences/STEM Council Co-Chair	South
Jean "Jules" Nono	Professor, Chemistry/STEM Coordinator	Central
Tyler Olivier	Department Chair, STEM/STEM Coordinator	Gen. Park
Yuli Pernia	Professor, Biology	North
Raquel Rodriguez-Asher	Resource and Inclusion Specialist, Grant Funding	North
Diana Shokralla	Director, Student Success Center	South
Sharon Sledge	Professor, Mathematics	Central
Susan Starr	Department Chair, Natural Sciences	North
Earle Thomas	Manager, Financial Aid Services and App Process	Central
Mark Thomas	Project Director, Title III STEM Grant	North
Andrea Vasquez	Manager, Strategic Initiative Projects	Central
Roger Watkins	Department Chair, Business/Computer Tech Services	South
Jackeline Webb	Department Chair, Mathematics	South
Sandra White	Professor, Computer Science	South
Christopher Wild	Dean, Health and Natural Sciences	South

*Honorary member

Partnerships

San Jacinto College partners with many schools, professional organizations, and industries to provide STEM opportunities for students.

EDUCATION PARTNERS: STEM SERVICE LEARNING		
A&M Consolidated High School	Friendswood High School	Palacios Junior High School
Alice Johnson Junior High	Girl Scouts	Pasadena High School
Alief Early College High School	Hamshire-Fannett High School	Quail Valley Middle School
Angleton Christian School	Harmony School of Advancement-Houston	Rubicon Academy
Anthony Aguirre Junior High School	Harmony School of Excellence-Houston	Seadrift Middle School
Attucks Middle School	Harmony School of Innovation-Sugar Land	Sharpstown International Academy
Berry Miller Junior High School	Harmony School of Innovation-Katy	Spurger High School
Black Middle School	Harmony Science Academy-Houston	St. Anthony of Padua Middle School
Brazosport High School	Harmony Science Academy-Sugar Land	St. Cyprian's Episcopal Elementary School
Brazoswood High School	Hildebrandt Intermediate School	St. John XXIII College Preparatory High School
Bridge City High School	Hofius Intermediate School	St. John's High School
Caney Creek High School	Hogg Middle School	Stafford Middle School
Channelview High School	Klein Intermediate School	Stafford STEM Magnet Academy
Cleveland Middle School	Krimmel Intermediate School	Stroman Middle School
Clute Intermediate School	Lake Jackson Intermediate School	The Village School
Cristo Rey Jesuit College Preparatory HS	Legacy Preparatory Christian Academy	The Woodlands High School
Crosby Middle School	Livingston High School	Ulrich Intermediate School
Cypress Park High School	Logos Preparatory Academy	William B. Travis Middle School
Doerre Intermediate School	Lutheran South Academy	Willis High School
Douglass School	Mickey Leland College Preparatory Academy	Worthing High School
Dr. Thomas E. Randle High School	Neighborhood Team	Wunderlich Intermediate School
Dulles High School	Northland Christian School	
Elkins High School	Palacios High School	

PROFESSIONAL ORGANIZATION PARTNERS: EVENTS, SCHOLARSHIPS, AND FUNDING	
American Chemical Society-Greater Houston Section	National Science Foundation
Houston Chemical Association	U.S. FIRST Robotics
Houston Geological Society	

INDUSTRY PARTNERS: EVENTS, SPEAKERS, TOURS, AND FUNDING	
Arkema Inc.	Intuitive Machines
Axiom Space	KHOU-TV - Dr. Neil Frank
Boeing	Lockheed Martin
Cascade MVS	LyondellBasell
ChemTreat	NASA
City of Houston	NASA Langley Research Center
Collins Engineering	Pfeiffer Electrical and Telecommunications
Communities in Schools, Afterschool Centers on Education	Port of Houston
Dow Chemical Company, Texas Operations	Texas Parks and Wildlife, San Jacinto Battleground State Historic Site
Galveston Bay Foundation	Texas Parks and Wildlife, Sea Center Texas
General Electric	U.S. Department of Energy
Houston Museum of Natural Science	Venus Technology
Houston Zoo	

UNIVERSITY PARTNERS	
Baylor College of Medicine	University of Houston
Bradley University	UH College of Engineering
Lamar University College of Engineering	UH College of Natural Sciences and Mathematics
Michigan Technological University	UH-Clear Lake College of Science and Engineering
Rice University	UH-Clear Lake Computer Science and Engineering, Industrial Hygiene and Safety
Texas A&M College of Geosciences	University of Iowa
Texas A&M University at Galveston	University of Texas at El Paso
Texas A&M University-Kingsville	UT MD Anderson Cancer Center School of Health Professions
Texas Tech University Whiteacre	UT Tyler

Outreach and Service Learning

San Jacinto College STEM faculty and staff celebrated the return of more in-person activities in 2022 while still thinking outside the box to provide virtual and hybrid learning opportunities. Working together, they engaged San Jac students and younger students from local school districts through service learning and outreach.

Service learning allows college students to apply theory and concepts outside the classroom, explore teaching careers, and develop leadership skills and confidence, while outreach engages future college students in STEM education and career opportunities.

The STEM Council supported these activities in 2022:

HABITAT RESTORATION PROJECT

Twenty-two Central Campus biology students volunteered at Heron Park in Shoreacres in March. They conducted habitat restoration in the nature park, including trail maintenance, invasive species removal, and vegetation clearing. The project team included the Central Campus Biology Department, City of Shoreacres Parks Committee, and Armand Bayou Nature Center.



STEAM FAIR

Partnering with Pasadena ISD, the Central Campus hosted 170 intermediate and high school students and their families April 8. Students toured the early college high school, science and health science buildings, and artificial intelligence/robotics labs and presented their STEM and art projects for judging. The day ended with hands-on demos in the science labs.



STEM EXPOS

For the second year in a row, local elementary and intermediate students learned hands-on science through cyberspace with a virtual STEM expo Feb. 17. San Jac faculty and Communities In Schools of Southeast Harris and Brazoria County partnered to record STEM experiments/presentations by San Jac students and two Communities in Schools after-school program campuses, with NASA also sharing a video. About 400 students and parents logged on for the event.

In November, about 750 local elementary and intermediate students and their families returned to STEM expos at the North and South Campuses. Another team effort with Communities in Schools of Southeast Harris and Brazoria County, the expos sparked students' interest in STEM through experiments, demos, and tours of health science labs.



CENTRAL CAMPUS ROBOTICS

Since 2011, San Jac has served as the Southeast Texas FIRST Tech Challenge affiliate partner. The region includes more than 100 teams from high schools, middle schools, and home-school programs. The College's robotics season included a kickoff, workshops, scrimmages, league meets, league/regional championships, state University Interscholastic League championship, and FIRST Tech Challenge state championship. Each year, these 40 events draw more than 1,500 students, coaches, and other participants.

San Jac also supported the U.S. FIRST World Championship in Houston in April 2022, which drew 14,000 competitors from 772 teams worldwide.

In 2022, the Central Campus robotics program hosted:

- FIRST Lego League qualifier in January
- FIRST FTC and FRC regional tournaments in March and April
- Summer robotics internships
- Roboteers Start Here summer camp for middle school students





STEGGY'S INSPIRATION STEMS FROM LEARNING

San Jacinto College is a hotspot for dinosaur sightings. Large and small replicas grace the science and health buildings at the South and North Campuses and geology professors' labs. But Steggy is the only one on the move.

The plush stegosaurus loves kids and STEM.

“Steggy and I joined forces while I was an engineering faculty member at another college,” said Dr. Connie Gomez, South Campus department chair of physical sciences. “When students with small children would come to my office, Steggy entertained the little ones while students and I reviewed concepts or academic plans.”

When the two moved to San Jac, Steggy continued to work in Gomez's office in the same role. After becoming a facilitator (facilitators who also take the course) for an online Association of College and University Educators microcredentials cohort, Gomez showed Steggy on camera while discussing creating inclusive environments. Soon Steggy became the cohort's unofficial mascot.

Steggy often leaves the office to meet students and other departments. Gomez has created videos to document his travels, and others have taken him globetrotting.

Steggy has not only appeared at the Girls Rise Up summer camp, STEM open house/career fair, and STEM Expo but also traveled to Upstate New York, Cancun, and Panama. A children's book titled “Steggy's Adventures on Campus” is in the works, possibly as an honors project.



2022 Event Highlights

JANUARY

Renewal 2024 Project: Generation Park Campus students in Dr. Tyler Olivier's General Biology for Science Majors II began a semester-long project to help Armand Bayou Nature Center. Students reviewed primary literature to find information about the park, habitats, and organisms to help create new interpretive signage. Their work contributed to the Renewal 2024 project, which is revitalizing buildings, exhibits, and interpretive signs throughout the park. Students shared their research about the prairie ecosystem and bayou/wetlands with the park in May 2022.

Pearland High School Course Selection Fair (1/27): South Campus biology, physical science, and engineering faculty shared with Pearland High School students how their high school classes correlate to their college major and how taking the right courses can help them in their career fields.

FEBRUARY

Virtual STEM Expo (2/17): For the second year in a row, local elementary and intermediate students learned hands-on science through cyberspace via San Jac's partnership with Communities In Schools of Southeast Harris and Brazoria County.

MARCH

Careers in Geology from A.S. to Ph.D. (3/2): Generation Park Campus' in-person/Zoom speaker series featured Houston Geological Society members Charles Caughey, Steven Johansen, and Sharma Dronamraju, who shared about petroleum geology and careers. Students also learned about scholarships and transfer paths.

Channelview High School HOSA Tour (3/24): The North Campus hosted 60 high school students for tours of health and natural science programs and discussions about education and career options.

Chemistry Day (3/28): The Center for Petrochemical, Energy, & Technology and Central Campus science faculty partnered with the Deer Park Chamber of Commerce to show how chemistry plays a role in everyday lives. Besides booths from the region's leading chemical industries, Chemistry Day featured science booths with experiments and activities for Deer Park High School juniors and seniors.

Stargazing Night



Roboteers Start Here



Chemistry Day

APRIL

Stargazing Night (4/7): More than 100 community members and San Jac attendees got a close-up look at the moon, Great Orion Nebula, and other celestial wonders during the Stargazing Night at the South Campus observation deck. Before the event, geology professor Heather Dalton trained 15 student, staff, and faculty volunteers how to use the telescopes so they could help attendees. Guests gained a greater appreciation for science and the STEM learning opportunities at San Jac.

STEAM Fair (4/8): Partnering with Pasadena ISD, the Central Campus hosted 170 intermediate and high school students and their families. Students toured the early college high school, science and health science buildings, and artificial intelligence/robotics labs and presented their STEM and art projects for judging. The day ended with hands-on demos in the science labs.

STEM Symposium (4/8): San Jac students enjoyed STEM panels, demos, career information, building tours, and door prizes at the South Campus. The symposium also featured keynote speaker Commissioner Julian Alvarez III of the Texas Workforce Commission. Hands-on activities ranged from robotics and 3D printing to virtual reality bowling and microscope slides of fungi and bacteria.

STEM Challenge (4/9): The “Banh Mi Boys” — South Campus students Aidan Byrne, Cruz Salas, Mozes Dicks, and Brian Quezada — took the prize in the science category during the ninth annual STEM Challenge at University of Houston-Clear Lake, a Pathways to STEM Careers program funded by the Department of Education.

Scholarship Workshop (4/27): STEM students and others applied for scholarships during a workshop in the South Campus Science and Allied Health Building. Faculty teamed with support services staff to share about San Jacinto College Foundation and program-specific scholarships and help students apply.

NASA Meet-up (4/30): Generation Park Campus geology professor J.F. Dzuryak held a meet-up with eight students for some stellar fun at Space Center Houston/Johnson Space Center. They attended an astronaut talk, rode the tram to see the Saturn V rocket, touched a moon rock, and more.

MAY

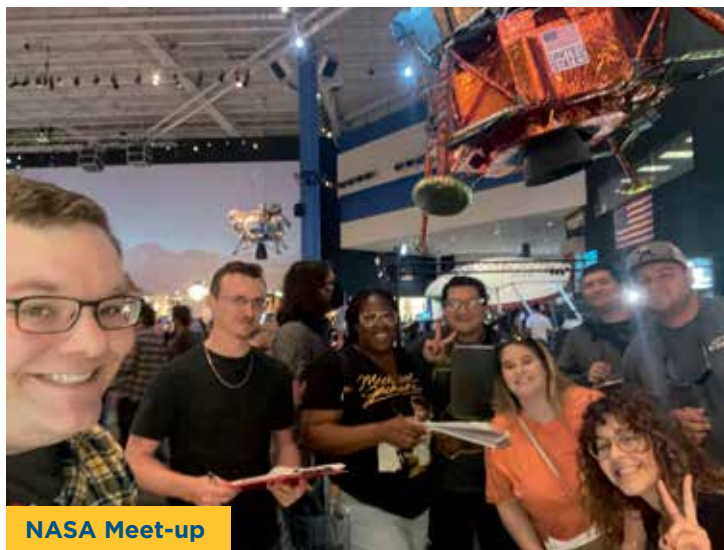
Cinco de Mayo (5/5): The South Campus Natural Science Department exhibited “Mexican Achievements in Science” during the Cinco de Mayo event organized by Todos Juntos.



STEM Symposium



STEM Expo



NASA Meet-up

2022 Event Highlights

JUNE - JULY

Summer Camps: Local youth got a break from the heat with air-conditioned indoor summer camps at San Jac. Entertaining and educational STEM campus included EnergyVenture, STEMPACT 2.0, Roboteers Start Here, Pathways to Careers – IT, and Girls Rise Up: STEM from Dance.

Undersecretary Visit (6/28): U.S. Undersecretary of Education James Kvaal visited the South Campus for a roundtable discussion and interactive tour of the Science and Allied Health Building. Kvaal learned how San Jac had spent Higher Education Emergency Relief Funds, partners with industry, and provides undergraduate research opportunities to STEM students.

AUGUST

Anderson-Ball Classroom Building Grand Opening (8/16): San Jacinto College boasted the nation's largest mass timber instructional building with its new Anderson-Ball Classroom Building at the Central Campus. Not only does the building feature innovative technology like electrochromic windows, tubular daylighting, and Internet of Things connectivity, but it also houses the campus robotics lab.

SEPTEMBER

Humble High School San Jac College Career Education Fair (9/22): North Campus health and science faculty supported this recruiting event for more than 2,500 potential students.

Scholarship Workshop (9/30): STEM students and others applied for scholarships during a workshop at the Generation Park Campus. Dr. Shannon Solis, distinguished faculty scholarship ambassador, teamed with support services staff to inform students about San Jacinto College Foundation and program-specific scholarships.



Girls Rise Up



Undersecretary Visit



AIM for STEM Luncheon



STEM Expo



STEM Expo

OCTOBER

STEM Alumni Success Stories (10/4): During this North Campus in-person/Zoom speaker series, alumnus Robin Torres, now a medical student at Texas Tech University Health Science Center Medical School, encouraged current students to persist through hardships to achieve their dreams.

Fisher Elementary STEM Night (10/11): San Jac outreach and recruitment and Communities in Schools organized this event for approximately 150 elementary students and their families. Central and South Campus faculty and staff offered science stations for students, including geology, biology, and genetics activities.

Robotics Outreach (10/22): The San Jacinto College Robotics Program hosted a booth at the Society of Women Engineers Conference at the George R. Brown Convention Center.

Science Talks Speaker Series (10/25): During this in-person/Zoom event at the Central Campus, Dr. Lynn Frostman, Syzygy Plasmonics vice president of sustainability and corporate social responsibility, highlighted ways sustainability-focused innovators and entrepreneurs bring robust solutions to the global market while creating new jobs.

STEM Alumni Success Stories (10/27): During this North Campus in-person/Zoom speaker series, alumnus Pablo Lopez ('09) shared about his journey from San Jac to Texas A&M University, including his undergraduate work for NASA's microgravity project. He works as a quality control analyst at a biotechnology research company.

Scholarship Workshop (10/28): Dr. Shannon Solis, distinguished faculty scholarship ambassador and math professor, held another scholarship workshop for STEM and Generation Park Campus students.

NOVEMBER

Pathways to Your Future — STEM (11/1): Current and prospective students got an inside look at San Jac STEM programs at the South Campus. Guests enjoyed a mix-and-mingle with faculty and student support resources staff and hands-on science demos. Student ambassadors led building tours that featured dissection and microscope specimens, Anatomage digital cadaver tables, the undergraduate research center, and computer programming facilities.

STEM Expos (11/10 & 11/17): About 750 local elementary and intermediate students and their families returned to hands-on science with STEM expos at the North and South Campuses. San Jac partnered with Communities in Schools of Southeast Harris and Brazoria County afterschool programs to offer both in-person expos.

DECEMBER

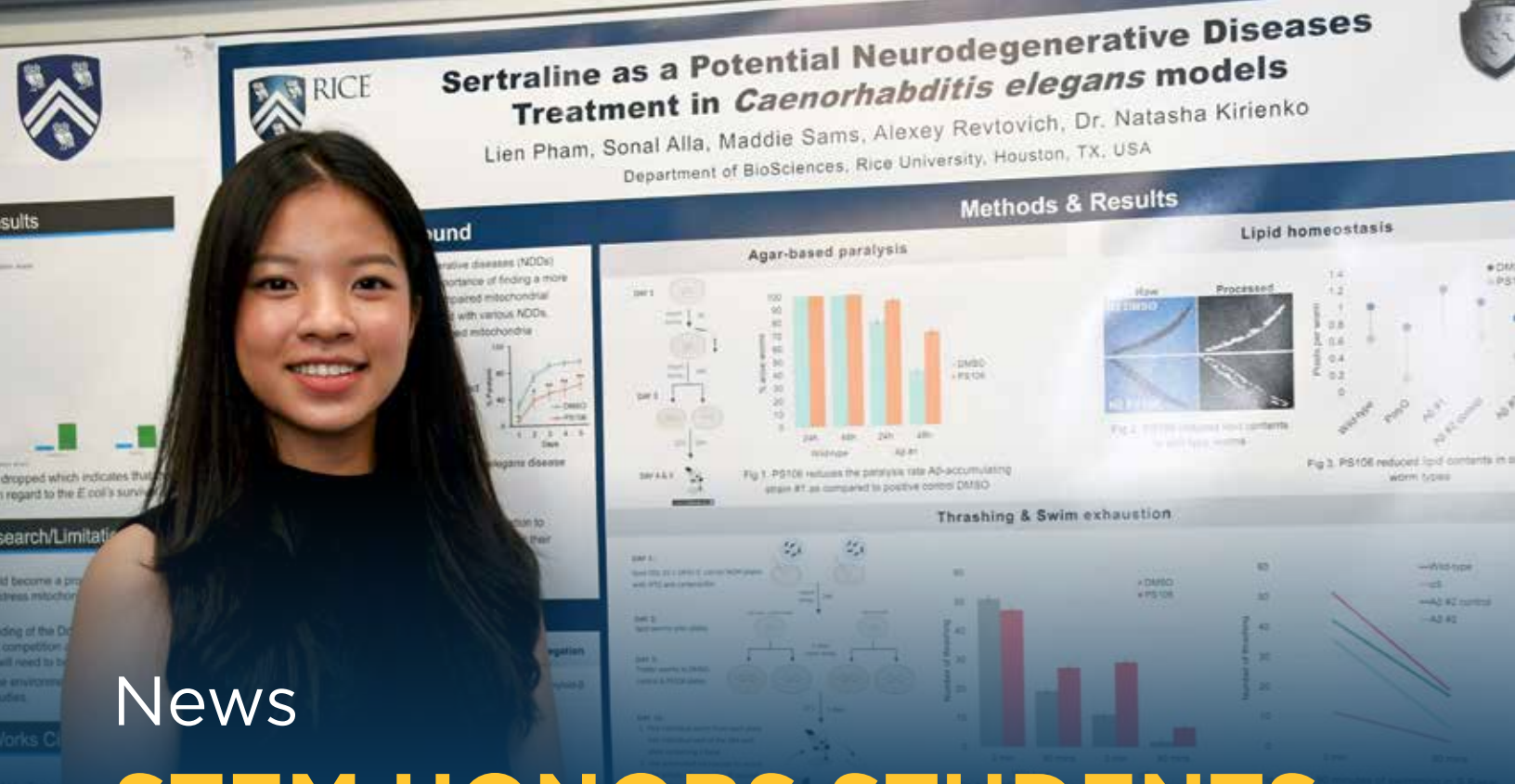
Males, Money, and More (12/9): Faculty hosted interactive STEM demonstrations during a financial literacy and college/career awareness event at the Generation Park Campus for 250 Channelview ISD middle schoolers. Presented by Comerica Bank, the event included a financial literacy workshop, a campus tour, breakout sessions, a career panel, and more. Partners also included East Harris County Empowerment Council and Port Houston.

STEM Expo



STEM Expo





News

STEM HONORS STUDENTS NOW SET SIGHTS ON RICE

San Jacinto College STEM honors students will get the boost to finish their associate degrees and transfer to top-tier institutions through the College's new partnership with Rice University.

Launched in spring 2022, Rice's Take Flight STEM Pathway is for high-achieving San Jac and Lone Star College students exploring science, technology, engineering, and math fields. It aims to increase STEM engagement and position community college students to pursue higher degrees at top universities.

Although Rice doesn't have transfer agreements with other institutions, it could establish one with San Jac by spring 2023.

Beginning with the fall 2022 class, the College's honors program will identify strong freshmen in STEM programs to pursue Take Flight. Together, San Jac and Rice will expand these students' horizons in STEM.

PREPARING FOR TAKEOFF

For the past 15 years, Rice has brought talented community college students on campus for summer research experiences for undergraduates, or REUs. Rice

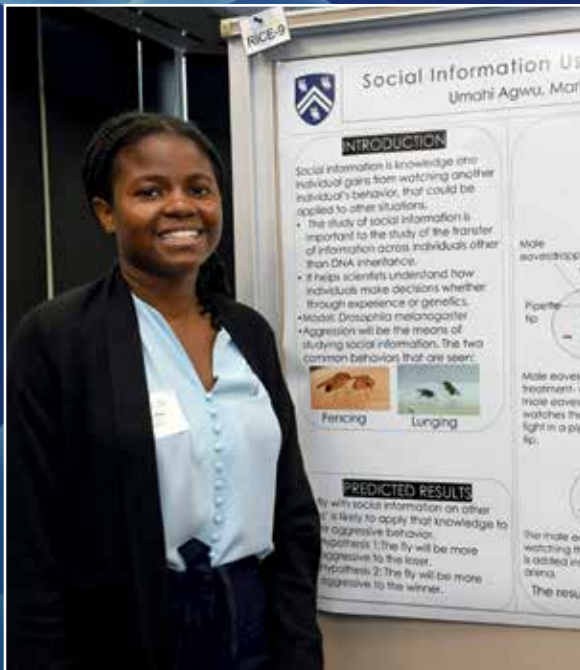
faculty who head these REUs encouraged university leaders to expand that partnership. In fall 2020, Rice and San Jac began discussing how they could team to meet the national need for more STEM graduates.

"Not getting accepted into a four-year school is a common misconception about why students choose community college," said Dr. Rachel Garcia, San Jac's associate vice chancellor of teaching and learning. "We have high-achieving students with 4.0 GPAs whom we need to serve and help achieve their academic goals."

The conversation went from growing students' research skills to preparing them to transfer to institutions like Rice, which has accepted few transfers from community colleges.

"What the board, provost, and I have put at the forefront is getting the talent from our own backyard," Dr. Matthew Taylor, Rice's associate provost, said. "We have good community colleges in town with good honors programs and first-generation, low-income students. We should look for that talent and develop that talent."

Enter Take Flight.



LAUNCHING INTO HIGHER DEGREES, CAREERS

While completing their associate degrees, San Jac Take Flight students will participate in ...

- Virtual information sessions with Rice admissions, engineering and natural science schools, transfer students, and STEM student organizations
- Summer seminars on STEM inquiry and communication skills
- Academic conferences with industry networking opportunities
- A Take Flight day at Rice with visits to a classroom, a residential college, and an undergraduate research symposium
- Research presentation opportunities

Strong students who want to apply to Rice will also complete ...

- Core STEM courses and an associate degree at San Jac with advising from both schools' faculty and staff
- A summer research experience for undergraduates, or REU, and summer transition program at Rice

While Rice might seem financially out of reach for San Jac graduates, the Rice Investment financial aid program covers tuition, fees, room, and board for qualifying students and 100% of demonstrated need for those with families outside qualifying income ranges.

"If Rice admits you, that means we believe in you and are committed to removing financial barriers to your ability to afford coming to Rice," Taylor said.

Learn more about Take Flight at sanjac.edu/honors or stempathway.rice.edu. ■



DIGITAL CADAVER TABLES TAKE LEARNING TO NEW HEIGHTS

Cadavers rarely appear in community college science labs, but San Jacinto College has secured the next best thing for learning anatomy: Anatomage digital cadaver dissection tables.

In summer 2022, the Central Campus received two tables, and the North, South, and Generation Park Campuses one each, thanks to Higher Education Emergency Relief Funds.

WHAT IS ANATOMAGE?

The Anatomage tabletop, an interactive touch screen, comes loaded with four life-sized 3D cadavers based on real male and female bodies imaged in 1-millimeter slices from head to toe. When users touch the screen, the table displays related words and information.

Dr. Teddy Farias, North Campus dean of health and natural sciences, describes the table as a giant iPad.

“The tables have high-resolution pictures of these cadavers,” Farias said. “We can’t replace working with a real cadaver, but this is very close and a lot more cost-effective.”

BELLS AND WHISTLES

Besides cadavers, the Anatomage table displays animals for digital dissection and other useful images for science and health science students.

“The company synthesized other specimens that are not based on a real cadaver but were created based on our knowledge of anatomy,” Farias said.

Examples include a baby in utero, a gunshot wound, an inflamed lung, heart disease, MRI and CT scans, and thousands of other case studies.

Beyond its many learning applications, the table can accommodate online classes, virtual tests and quizzes, and Zoom demonstrations. Because the table is on wheels, it can also move from its designated lab to other classrooms and stand upright for easier display.

WHO WILL USE THE TABLES?

While essential for anatomy and physiology classes, the Anatomage tables are a valuable interdisciplinary resource.

“The material is relevant for many programs,” Farias said. “The benefit of having it is that students can engage with it for hands-on learning, remediation, or tutoring sessions. It’s a useful visual tool.”

Professors will integrate the Anatomage tables into their course curriculum starting in spring 2023. ■



Faculty Spotlight

DR. TYLER OLIVIER: SCIENCE EDUCATOR MAKES BIOLOGY MATTER

From biology major to educator — and a lot in between — San Jacinto College's Dr. Tyler Olivier brings experience and inspiration to the classroom.

Currently the STEM department chair at the Generation Park Campus, Olivier has taught general biology for science and non-science majors and served as an honors faculty member and Service Learning Council member.

"As a scientist, I'm interested in zoology (inverts) and ecology," he said. "As an educator, I advocate for diversity, equity, and inclusion in higher education and service learning."

Throughout his own educational journey, Olivier never had a Black science teacher. Being someone students can see themselves in is an exponential reward. Case in point: A former student — also an African American male — texted Olivier that he was graduating with his Bachelor of Science in biology.

"He told me he appreciated the help I had given him and that without me as a professor he would not have pursued a degree in biology," Olivier said.

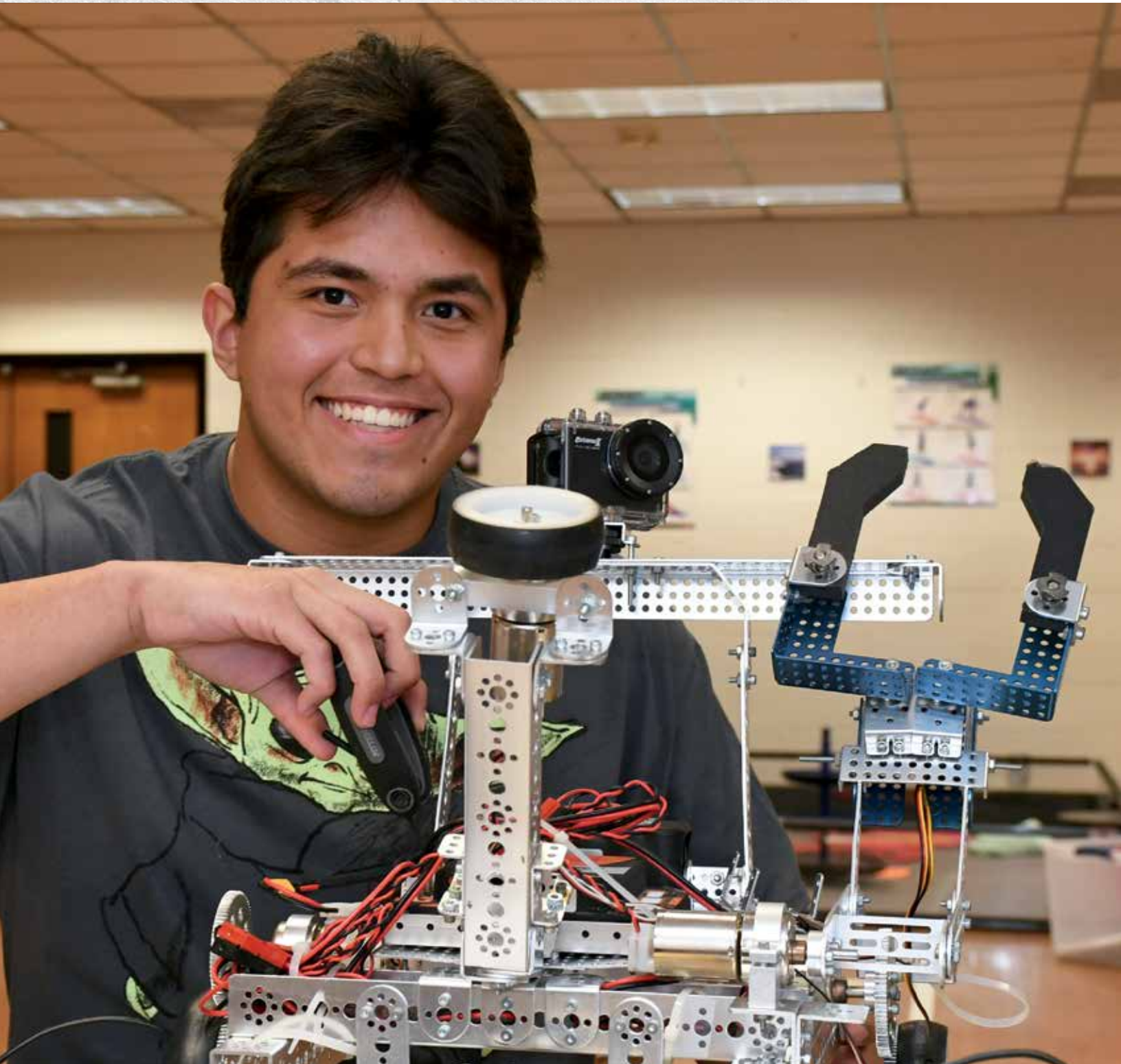
After graduating from Louisiana State University, Olivier earned his Ph.D. in environmental and evolutionary biology from the University of Louisiana Lafayette, where he studied amphidromous shrimp migrations in the Mississippi and Atchafalaya rivers. He fell in love with teaching after his first week as a biology lab teaching assistant. From that moment, he aspired to share his passion for science with everyone.

At San Jac since 2015, Olivier has grown as an educator and a leader. As a professor, he enjoyed interacting with students and seeing them grow throughout the semester. Today, as a department chair, he enjoys problem-solving and impacting student success at the department and program level. As a bonus, Houston is only a four-hour drive from his southern Louisiana hometown.

"It's relatively easy for me to get back to a bowl of gumbo or a table full of crawfish," he said.

Olivier grows his students' appreciation for life "from microbes to blue whales." He approaches students as partners in the learning experience so he is less a gatekeeper and more a "facilitator of learning."

"I continually ask my students to think critically about what is being discussed and to explain the practical application of the knowledge we learn," he said. "As a result, I believe they leave my class with a foundation of skills that can be expanded upon and a working knowledge of general biology." ■



Student Spotlight

VALEDICTORIAN, ASSOCIATE DEGREE, AND A&M FULL RIDE: ZAMBRANO IS THE 'HIGH SCHOOL KID' WHO COULD

"Where's the math tutor?"

At a table inside San Jacinto College's Student Success Center, Anthony Zambrano lifted his head from his Calculus III textbook. The tutoring center assistant pointed at him, and the student who had asked the question started.

"Oh, my gosh! I thought he was a high school kid."

Truth be told, Zambrano was still in high school, tutoring students up to five decades older.

Today — polite, quiet, but well-spoken — the high school valedictorian and National Merit Scholar shows maturity beyond his 18 years. With a San Jac associate degree and full-ride scholarship to Texas A&M University, he is also making fast strides toward an electrical engineering career.

BE PREPARED

Zambrano credits his career inspiration to his dad, a former Air Force plane technician and NASA pyrotechnic who worked alongside engineers.

"With my dad pointing me in the right direction, I got to be a part of programs and events that allowed me to see what electrical engineering was about," he said. "Those opportunities made my desire for the career even greater."

After his sophomore year, Zambrano began attending San Jac as an accelerated dual credit student. The first in his family to attend college, he welcomed the chance to get ahead while easing his parents' financial load.

An even bigger perk was the training ground for a university. Already a top student, Zambrano stepped up his study skills even more. Each syllabus was different, and so was each professor's expectations. In scouting lingo, he had to be prepared.

"It made me into a better student," he said. "I had to know how to use textbooks and resources."

BE ENGAGED

At San Jac, Zambrano took advanced math classes to prepare for engineering. Other students tapped him when they had questions, piquing math professor Sharon Sledge's curiosity.

"I started calling on him and checking on him during class, and he did know the answers," Sledge said.

With leadership skills and a knack for problem solving, Zambrano became a tutor. In summer 2022, Sledge mentored him in the Louis Stokes Alliances for Minority Participation Bridge to Baccalaureate robotics program.

During the eight-week internship, he dove into coding, JavaScript, CAD, 3D printing, and more. He also helped run the Roboteers Start Here summer camp, teaching kids about circuits and 3D modeling.

"I got to put [engineering] into action," he said.

BE FOCUSED

Now Zambrano is laser-focused on Aggie academics. But don't think he's all work and no play. He is eyeing a Formula 1 racing club and playing double bass for Texas A&M's orchestra.

The secret to his success? Beyond his parents, who are his biggest supporters, he points to his single-minded focus.

"Life has lots of hiccups," he said. "Keeping your focus, not procrastinating, and knowing what you want to accomplish can take you far." ■

Grants

San Jacinto College manages federal and state grants from the National Science Foundation, the Texas Higher Education Coordinating Board, the Texas Governor's Office, and more. These grants provide professional development for STEM faculty and scholarships, undergraduate research opportunities, industry guest speaker events, field trips, and outreach opportunities for students.

GRANTS AWARDED OR CONTINUING IN 2022

New STEM Academic Grant Awards				
Award Date	Title	Agency	Description/Focus	Amount*
10/1/2022	Louis Stokes B2B Alliance: Harris County Community College Alliance	National Science Foundation	Prepares students from underrepresented minority populations for successful transfer to four-year institutions in STEM degree programs	\$1,478,965
TOTAL				\$1,478,965

Continuing STEM Academic Grant Awards				
Award Date	Title	Agency	Description/Focus	Amount*
7/27/2021	HSI Implementation and Evaluation Project: Incorporating Research-related Activities in Developmental Math to Increase A.S. STEM Graduates	National Science Foundation	STEM faculty professional development	\$995,417
9/17/2021	Title III – HSI STEM	Dept. of Education	Outreach to K-12 students for dual credit STEM courses and career exploration	\$4,654,279
TOTAL				\$5,649,696

New or Continuing STEM Academic Awards with Scholarship Funds				
Award Date	Title	Agency	Description/Focus	Amount*
10/1/2022	Louis Stokes B2B Alliance: Harris County Community College Alliance	National Science Foundation	Scholarships/stipends for minority STEM students	\$744,000 (as part of \$1,478,965 award program-wide)
TOTAL				\$744,000

New Crossover STEM (Nursing) or Middle-Skill STEM Grant Awards				
Award Date	Title	Agency	Description/Focus	Amount*
6/6/2022	Reg NSRP (Nursing Shortage)	THECB	Nursing program support funds	\$510,019
7/15/2022	Perkins Basic V	Dept. of Education	Support for career and technical education programs	\$1,226,655
11/21/2022	CNC/Manufacturing	Gene Haas Foundation	Advanced manufacturing program support	\$12,000
TOTAL				\$1,748,674

Continuing Crossover STEM (Nursing) or Middle-Skill STEM Grant Awards				
Award Date	Title	Agency	Description/Focus	Amount*
10/17/2018	NSRP 2019 (Nursing Shortage)	THECB	Nursing program support funds	\$23,995
4/1/2020	NSRP 2020 (Nursing Shortage)	THECB	Nursing program support funds	\$24,474
5/6/2020	NSRP 20-21 (Nursing Shortage)	THECB	Nursing program support funds	\$24,673
5/1/2020	NSRP 20-21 070 (Nursing Shortage)	THECB	Nursing program support funds	\$21,520
5/1/2020	NSRP 21-22 (Nursing Shortage)	THECB	Nursing program support funds	\$205,337
5/1/2020	NSRP 21-22 SC (Nursing Shortage)	THECB	Nursing program support funds	\$42,121
1/21/2021	EDGE Center Renovation	Dept. of Commerce/ EDA	Center remodel to accommodate STEM tech training	\$1,000,000
TOTAL				\$1,342,120

*Note: Totals represent the full award amount.

Scholarships and Stipends

Student success is San Jacinto College’s mission. Scholarships remove financial barriers that keep students from pursuing higher education, while stipends fund undergraduate research, growing students’ inquiry skills. Thanks to these opportunities, STEM students can finish their degrees, transfer, and pursue fulfilling careers.

Established in 2022, the STEM Endowed Scholarship Fund through the San Jacinto College Foundation will begin awarding scholarships to STEM students in 2023-2024.

STEM SCHOLARSHIPS 2022

SPRING 2022 SEMESTER	NUMBER	SOURCE	ROUNDED AVG. AWARD	AMOUNT
LSAMP Scholars*	43	Grant Funded	\$1,168	\$50,250
SUMMER 2022 SEMESTER	NUMBER	SOURCE	ROUNDED AVG. AWARD	AMOUNT
LSAMP Scholars*	13	Grant Funded	\$4,038	\$52,500
FALL 2022 SEMESTER	NUMBER	SOURCE	ROUNDED AVG. AWARD	AMOUNT
LSAMP Scholars*	31	Grant Funded	\$2,080	\$64,500
2021 TOTAL STEM SCHOLARSHIPS				\$167,250

*Note: Louis Stokes Alliance for Minority Participation Bridge to Baccalaureate Scholar count has duplicated students from spring to fall.

STUDENTS AWARDED LSAMP SCHOLARSHIPS IN 2022

- | | |
|-------------------------|---------------------|
| Jose Amieva | Victoria Moreno |
| Kevin Bariya | Rachel Myers |
| Aidan Byrne | Ali Nassar |
| Jonathan Cardenas | Juan Ortiz |
| Ian Cisneros | Rickkall Paulin |
| Abigail Cody | Carlos Pedroza |
| Laura Cuayahuitl | Rodolfo Pena |
| Oscar De Jesus | Joe-Patrick Perlera |
| Samira De Leon | Hailey Privat |
| Maritza Diaz | Travis Provence |
| Aniah Evans | Genesis Ramos |
| Constantine Ewan | Fernando Renovato |
| Sahar Fahmy | Olivia Rodriguez |
| Mason Field | Brandon Rodriguez |
| Ethan Fitzpatrick | Destyn Scales |
| Javier Flores | Iza Sheikh |
| Sergio Garcia | Jordyn Sibert |
| Ivon Garibay | Ricardo Sierra |
| Benjamin Greigg | Anthony Smith |
| Thomas Gullick | Jan Vasquez |
| Sunniva Guzman | Julissa Vega |
| Oscar James Heysquierdo | Dalyn Velazquez |
| Bruno Iniguez | Eliana Vilchis |
| Emily Jacob | Marisela Villarreal |
| Charlotte Kostecka | Isaac Villarreal |
| Cecilia Leauvano | Melissa Wells |
| Sophia Lopas | Jared White |
| Ivan Medina | Marianella Williams |
| Sakinah Meite | Anthony Zambrano |
| John Mendoza | Hunter Zambrano |

STUDENTS AWARDED STIPENDS FOR RESEARCH EXPERIENCES FOR UNDERGRADUATES IN 2022

- Umahi Agwu
- Christopher Avalos
- Beatriz Cespedes
- Briana Ibarra
- Kevin Juarez
- Briana Loreda
- Jorge Medellin
- Nhi Pham



STEM Enrollment

To meet state goals, San Jacinto College determines appropriate thresholds for enrollment by aligning with the targets outlined in the Texas Higher Education Strategic Plan: 2015-2030 (60x30TX). The 2030 goal is for at least 60% of Texans ages 25-34 to have a certificate or degree. Because increasing enrollment is an institutional goal, the STEM Council helps increase enrollment districtwide through its outreach efforts.

STEM Retention

The STEM Council identifies and implements student success strategies to improve retention and success in STEM programs. Nationwide, a disparity exists between the ratio of students who enroll in STEM programs and the number of students who graduate. According to the National Center for Education Statistics, 69% of associate degree students who entered STEM fields between 2003 and 2009 had left these fields by the 2009 spring semester. About half these students switched to a non-STEM field, and the rest left college before graduating or earning a certificate. By implementing and improving these student success programs and strategies, the STEM Council and STEM faculty continue to see retention and success rates increase.

FALL SUCCESS OF STEM COURSES COLLEGE-WIDE

Term	Enrollment	Completer Enrollment (A-F)	Retention		Pass (A-D)		Success (A-C)		Completer Success (A-C)	
	N	N	N	%	N	%	N	%	N	%
Fall 2018	24,376	20,198	21,158	86.8%	18,637	76.5%	16,699	68.5%	16,699	82.7%
Fall 2019	25,553	21,159	22,216	86.9%	19,339	75.7%	17,334	67.8%	17,334	81.9%
Fall 2020	26,014	21,940	23,211	89.2%	20,333	78.2%	18,859	72.5%	18,859	86%
Fall 2021	24,001	19,541	20,928	87.2%	17,763	74%	15,959	66.5%	15,959	81.7%
Fall 2022	23,627	19,686	21,047	89.1%	17,900	75.8%	16,180	68.5%	16,180	82.2%

SPRING SUCCESS OF STEM COURSES COLLEGE-WIDE

Term	Enrollment	Completer Enrollment (A-F)	Retention		Pass (A-D)		Success (A-C)		Completer Success (A-C)	
	N	N	N	%	N	%	N	%	N	%
Spring 2018	22,600	18,273	19,116	84.6%	16,796	74.3%	15,093	66.8%	15,093	82.6%
Spring 2019	23,306	19,005	19,990	85.8%	17,495	75.1%	15,650	67.2%	15,650	82.3%
Spring 2020	24,266	20,931	22,137	91.2%	19,747	81.4%	18,401	75.8%	18,401	87.9%
Spring 2021	24,630	20,420	21,538	87.4%	18,884	76.7%	17,346	70.4%	17,346	84.9%
Spring 2022	21,657	17,694	18,791	86.8%	16,060	74.2%	14,478	66.9%	14,478	81.8%

SUCCESS OF STEM COURSES COLLEGE-WIDE BY CALENDAR YEAR

Calendar Year	Term	Enrollment	Completer Enrollment (A-F)	Retention		Pass (A-D)		Success (A-C)		Completer Success (A-C)	
		N	N	N	%	N	%	N	%	N	%
2018	Spring 2018	22,600	18,273	19,116	84.6%	16,796	74.3%	15,093	66.8%	15,093	82.6%
	Fall 2018	24,376	20,198	21,158	86.8%	18,637	76.5%	16,699	68.5%	16,699	82.7%
2019	Spring 2019	23,306	19,005	19,990	85.8%	17,495	75.1%	15,650	67.2%	15,650	82.3%
	Fall 2019	25,553	21,159	22,216	86.9%	19,339	75.7%	17,334	67.8%	17,334	81.9%
2020	Spring 2020	24,266	20,931	22,137	91.2%	19,747	81.4%	18,401	75.8%	18,401	87.9%
	Fall 2020	26,014	21,940	23,211	89.2%	20,333	78.2%	18,859	72.5%	18,859	86%
2021	Spring 2021	24,630	20,420	21,538	87.4%	18,884	76.7%	17,346	70.4%	17,346	84.9%
	Fall 2021	24,001	19,541	20,928	87.2%	17,763	74%	15,959	66.5%	15,959	81.7%
2022	Spring 2022	21,657	17,694	18,791	86.8%	16,060	74.2%	14,478	66.9%	14,478	81.8%
	Fall 2022	24,001	19,541	20,928	87.2%	17,763	74%	16,180	67.4%	16,180	82.8%

Source: LP_ENDCRSE



STEM Degrees

The Associate of Science is designed for students to transfer to four-year or upper-level institutions and major in math, science (biology, chemistry, geology, physics, or related field), engineering, or computer science or pursue a bachelor's degree in a health science field. The A.S. differs from an Associate of Arts in the amount or level of math and science required for degree completion.

A minimum of 12 hours in math, 12 hours in science, 12 hours in engineering, or 12 hours in computer science beyond the core requirement is required for the degree. Students seeking an A.S. take science courses designed for majors rather than non-majors. San Jacinto College offers the following A.S. degrees:

- **NATURAL SCIENCE** (2NATSCI)*
- **COMPUTER SCIENCE** (2COSCI)
- **MATHEMATICS** (2MATH)
- **ENGINEERING** (2ENGINEER)

**Note: Effective fall 2021, the College combined life and physical sciences into the natural science A.S. degree.*

In 2013, the Texas Legislature approved the use of Success Points for determining part of the state funding for the College. The Student Success Points Model assigns additional points to students who complete a degree or certificate in STEM or allied health.



STEM AA AND AS DEGREES EARNED BY ACADEMIC YEAR

Academic Year	Major	Headcount	
		N	%
2017-2018	Biology, Biological Sciences, Life Sciences, Biotechnology AS	410	61%
	Computer Programming, General AS	69	10.3%
	Engineering, General + Mechanical AS	39	5.8%
	Mathematics, General AS	115	17.1%
	Physical Sciences AS	39	5.8%
	Total	672	100%
	2018-2019	Biology, Biological Sciences, Life Sciences, Biotechnology AA	1
Biology, Biological Sciences, Life Sciences, Biotechnology AS		432	61.1%
Computer Programming, General AA		1	0.1%
Computer Programming, General AS		86	12.2%
Engineering, General + Mechanical AS		52	7.4%
Mathematics, General AS		107	15.1%
Physical Sciences AS		28	4%
Total		707	100%
2019-2020	Biology, Biological Sciences, Life Sciences, Biotechnology AS	543	64.2%
	Computer Programming, General AS	100	11.8%
	Engineering, General + Mechanical AS	50	5.9%
	Mathematics, General AS	123	14.5%
	Physical Sciences AS	30	3.5%
	Total	846	100%
2020-2021	Biology, Biological Sciences, Life Sciences, Biotechnology AS	492	59.6%
	Computer Programming, General AS	87	10.5%
	Engineering, General + Mechanical AS	45	5.5%
	Mathematics, General AS	174	21.1%
	Physical Sciences AS	27	3.3%
	Total	825	100%
2021-2022	Biology, Biological Sciences, Life Sciences, Biotechnology AS	506	63.5%
	Computer Programming, General AS	92	11.5%
	Engineering, General + Mechanical AS	52	6.5%
	Mathematics, General AS	117	14.7%
	Physical Sciences AS	30	3.8%
	Total	797	100%

Source: CBM009

STEM AA AND AS DEGREES EARNED BY CALENDAR YEAR

Calendar Year	Major	Headcount	
		N	%
2018	Biology, Biological Sciences, Life Sciences, Biotechnology AS	399	61.9%
	Computer Programming, General AA	1	0.2%
	Computer Programming, General AS	68	10.5%
	Engineering, General + Mechanical AS	36	5.6%
	Mathematics, General AS	109	16.9%
	Physical Sciences AS	32	5%
	Total	645	100%
	2019	Biology, Biological Sciences, Life Sciences, Biotechnology AS	482
Computer Programming, General AS		104	13.4%
Engineering, General + Mechanical AS		53	6.8%
Mathematics, General AS		109	14%
Physical Sciences AS		28	3.6%
Total		776	100%
2020	Biology, Biological Sciences, Life Sciences, Biotechnology AS	530	64.3%
	Computer Programming, General AS	99	12%
	Engineering, General + Mechanical AS	52	6.3%
	Mathematics, General AS	113	13.7%
	Physical Sciences AS	30	3.6%
Total	824	100%	
2021	Biology, Biological Sciences, Life Sciences, Biotechnology AS	465	58.9%
	Computer Programming, General AS	75	9.5%
	Engineering, General + Mechanical AS	46	5.8%
	Mathematics, General AS	183	23.2%
	Physical Sciences AS	20	2.5%
Total	789	100%	
2022	Biology, Biological Sciences, Life Sciences, Biotechnology AS	369	57.9%
	Computer Programming, General AS	117	18.4%
	Engineering, General + Mechanical AS	45	7.1%
	Mathematics, General AS	84	13.2%
	Physical Sciences AS	22	3.5%
Total	637	100%	

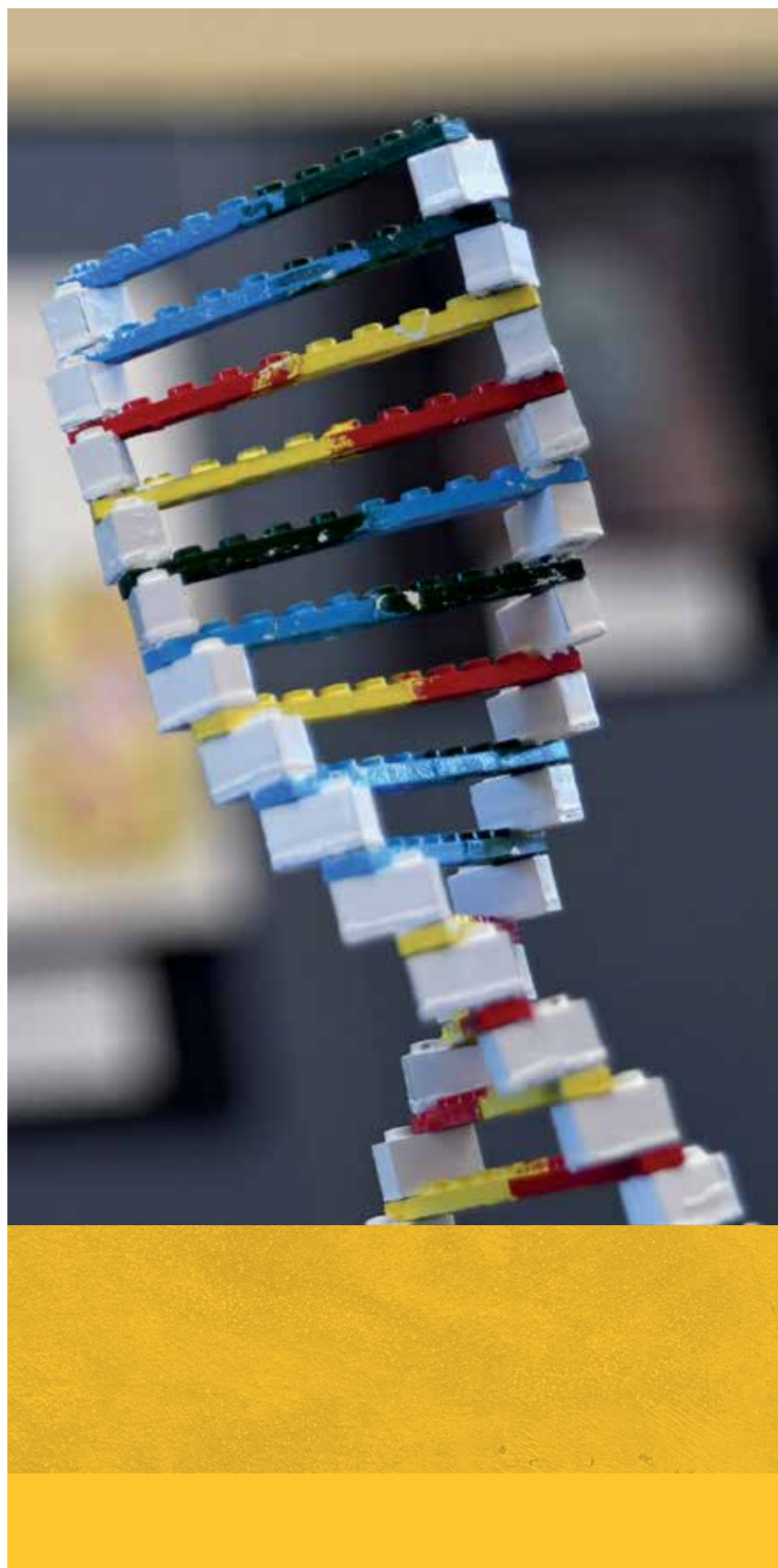
Source: SHRDGMR, STVMAJR, SPRIDEN, & STVDEGC
Note: CY2022 Preliminary as of 1/5/2023

Student Success Interventions

Peer support and learning communities continue to be the most successful approaches for student success in San Jacinto College STEM programs. The College has implemented supplemental instruction, or SI, programs in numerous STEM subjects that provide peer support by having students who have succeeded in traditionally difficult courses (e.g., chemistry, biology, physics, etc.) help other students complete these courses. SI, a responsive approach, provides regular review sessions outside class. Students collaborate by discussing readings, comparing notes, predicting test items, and sharing ideas for improving class material.

Courses selected for SI tend to be gatekeeper classes, or those that have a 30% or higher proportion of students who receive a D, fail, or withdraw (the DFW rate) from the course. SI leaders and students who previously excelled in the class schedule and lead review sessions outside class time. This structured peer-to-peer mentoring has benefited San Jac students.

SI occurs only at the South Campus, and the STEM Council is recommending that the SI program be implemented College-wide. According to data from the office of institutional research and effectiveness, the retention and success percentage of those who visited at least one SI session is statistically significantly higher than that of those who did not attend an SI session — at a 95% confidence level.



OPEN LAB VISITS FOR FALL 2021 AND SPRING 2022

Term	Class Group	Enrollment	Unduplicated Students		Total Visits
		N	N	%	N
Fall 2021	BIOL 1306/1106	179	34	19%	42
	BIOL 1307/1107	81	18	22.2%	24
	BIOL 2301/2101	322	39	12.1%	82
	BIOL 2302/2102	256	24	9.4%	54
Spring 2022	BIOL 1306/1106	190	26	13.7%	34
	BIOL 1307/1107	320	49	15.3%	98
	BIOL 2301/2101	366	49	13.4%	98
	BIOL 2302/2102	258	38	14.7%	94

FALL OPEN LAB SUCCESS

Term	Visited SI Center	Enrollment	Retention		Success	
		N	N	%	N	%
Fall 2018	No	1,645	1,404	85.3%	1,129	68.6%
	Yes	304	283	93.1%	244	80.3%
Fall 2019	No	1,334	1,138	85.3%	878	65.8%
	Yes	230	220	95.7%	193	83.9%
Fall 2020	No	-	-	-	-	-
	Yes	-	-	-	-	-
Fall 2021	No	723	608	84.1%	456	63.1%
	Yes	115	113	98.3%	97	84.3%

SPRING OPEN LAB SUCCESS

Term	Visited SI Center	Enrollment	Retention		Success	
		N	N	%	N	%
Spring 2018	No	1,713	1,383	80.7%	1,011	59%
	Yes	367	328	89.4%	278	75.7%
Spring 2019	No	1,647	1,343	81.5%	1,012	61.4%
	Yes	285	256	89.8%	221	77.5%
Spring 2020	No	1,046	957	91.5%	835	79.8%
	Yes	146	141	96.6%	137	93.8%
Spring 2021	No	-	-	-	-	-
	Yes	-	-	-	-	-
Spring 2022	No	969	825	85.1%	623	64.3%
	Yes	165	162	98.2%	141	85.5%


OPEN LAB SUCCESS BY ACADEMIC YEAR

Calendar Year	Term	Visited SI Center	Enrollment	Retention		Success	
			N	N	%	N	%
2018	Spring 2018	No	1,713	1,383	80.7%	1,011	59%
		Yes	367	328	89.4%	278	75.7%
	Fall 2018	No	1,645	1,404	85.3%	1,129	68.6%
		Yes	304	283	93.1%	244	80.3%
2019	Spring 2019	No	1,647	1,343	81.5%	1,012	61.4%
		Yes	285	256	89.8%	221	77.5%
	Fall 2019	No	1,334	1,138	85.3%	878	65.8%
		Yes	230	220	95.7%	193	83.9%
2020	Spring 2020	No	1,046	957	91.5%	835	79.8%
		Yes	146	141	96.6%	137	93.8%
	Fall 2020	No	-	-	-	-	-
		Yes	-	-	-	-	-
2021	Spring 2021	No	-	-	-	-	-
		Yes	-	-	-	-	-
	Fall 2021	No	723	608	84.1%	456	63.1%
		Yes	115	113	98.3%	97	84.3%
2022	Spring 2022	No	969	825	85.1%	623	64.3%
		Yes	165	162	98.2%	141	85.5%
	Fall 2022	No	-	-	-	-	-
		Yes	-	-	-	-	-

Source: LP_ENDCRSE & TutorTrac

Note: Students selected Natural Science - South at center and selected BIOL1106, BIOL1306, BIOL1107, BIOL1307, BIOL2301, BIOL2101, BIOL2302, BIOL2102, GEOL1103, GEOL1303, GEOL1104, GEOL1304 as course.

Note: Students who did not attend open lab center are students from the same class sections as those who did attend at least one open lab session.

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