

Saint Francis University
STEAM Day 2023 Presentations

Tuesday, November 26, 2024

Sessions begin at 9:30 am, 10:30 am, 11:30 am, and 12:30pm

STEAM Day Featured Presentations – JFK Auditorium			
9:30	10:30	11:30	12:30
Feature #1 Exploring Careers in Law: How College Can Help You Get There	Feature #2 Launching Aviation Careers through the Legacy of the Tuskegee Airmen	Feature #3 Day in the Life: STEAM Student Panel	Feature #4 First and Eternity: Is Our Devotion to Sport a Blessing or a Curse?
<i>Keith A. Pesto, Magistrate Judge at United States District Court for the Western District of Pennsylvania</i>	<i>Steve Hellner-Burris, Chief Operating Officer, Hosanna House (Wilkinsburg, PA)</i>	<i>Moderator: Ms. Adrianna Boldizar, History & Secondary Education (2025) Panelists: Ms. Emma Deckard, History & Secondary Education (2028); Mr. Joel Godissart, Aquarium & Zoo Science (2026); Ms. Nicole Himes, Environmental Engineering (2025); Mr. Gavin Ross, Chemistry (2027); and Ms. Camilla Short, Aquarium & Zoo Science (2028)</i>	<i>Rev. Dr. William Whitmore, School Minister, Mercersburg Academy</i>
Join Magistrate Judge Pesto, a former adjunct instructor at Saint Francis University, as he shares insights from over 40 years in the legal field. Discover how the legal profession has evolved, learn about today's most in-demand career paths in law and law enforcement, and get practical advice on how to make college work for you—whether you're aiming for law school, a career in criminal justice, or other law-related professions. Perfect for students curious about law and looking to plan their future!	Discover how the legacy of the Tuskegee Airmen is inspiring the next generation of aviation professionals! Mr. Hellner-Burris will explain how the Tuskegee Airmen Museum, located at the Hosanna House in Wilkinsburg, PA, provides an immersive, hands-on exploration of the heroic WWII pilots. He'll also discuss the museum's partnership with local high schools and the Aircraft Owners and Pilots Association (AOPA) to offer aviation training and career pathways. Whether you're aspiring to be a pilot, engineer, or pursue a role in aerospace, this session will guide you on how to launch a successful career in aviation.	What is it like to be a college student in a STEAM major? What are classes like, the workload, the schedule, the challenges? What clubs and activities are available? How do I prepare for a job, med school, or graduate school? What do you do for fun? Hear answers to these questions and more from current STEAM students and ask your own questions.	Explore the surprising parallels between sport and religion in the USA, from communal identity and ritualistic devotion to stories of meaning and significance. This session will examine the religious elements within American sporting culture and consider what this reveals about our understanding of sport and the meaning it holds in our lives. We will also reflect on whether our deep devotion to sport is a positive or negative influence and discuss its broader implications for the future.

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1. A Guided Tour of the Keirn Family World War II Museum

Ms. Carol Stoltz, Director of the Keirn Family World War II Museum; History student: Mason Hoff, SFU

Explore history up close with a guided tour of the Keirn Family World War II Museum. Led by SFU history majors, this tour features artifacts, photographs, and memorabilia that tell the stories of soldiers and civilians from World War II. Discover rare military equipment and gain a deeper understanding of the global impact of the war through this interactive experience, perfect for high school students interested in history.

2. A Hands-on Primer in Therapeutic Gardening

Dr. Tim Bintrim, Professor of English, and Coordinator of Sustainability Minor; Students, SFU

Research shows that when the elderly have access to gardens, biophilia elevates their mood, reduces the need for medication, and encourages wellness, flexibility, and fine motor skills. For the past three years, students at SFU have been using our high-hoop greenhouse to stock a therapeutic garden at Maple Heights, a skilled nursing facility closeby that is our community partner. This session, held in the SFU Hoophouse near Torvian Dining Hall, will offer a hands-on introduction to sensory plants, vertical gardening, and propagation techniques that we use to make the wheelchair accessible garden bloom. Participants will propagate ice plant and tradescantia, taste edible flowers, and learn how therapeutic gardening intersects with careers in occupational or physical therapy, gerontology, psychology, nursing and physician assistant science, as well as botany, ecology, and teaching.

3. Animal-Assisted Therapy, Education, and Interaction

Dr. Shlomit Flaisher-Grinsberg, Associate Professor of Psychology, SFU

There are many ways for humans to support the well-being of animals, and many ways for animals to improve the lives of people. The session will discuss the different roles of animals within the human-animal bond (working animals, service/disability animals, animal-assisted therapy/education, emotional support animals, and companion animals), the ways animals are integrated into various career paths, and SFU's courses which are dedicated to the rehabilitation of shelter animals.

4. Army Reserve Officers Training Corps - Warrior Battalion

Mr. Brian Vissepo, Assistant Professor of Military Science, Erich Steffens, Professor of Military Science, and Christopher Chavira, Recruiting Operations Officer SFU

Introduction of what Army ROTC is, what it offers, and information on the Warrior Battalion.

5. Art Meets Function: Fabricating Orthotics with Flair

Dr. Andrew Miller, OTR/L, CHT, CFE, ATC/L, Clinical Associate Professor of Occupational Therapy, SFU

This session aims to convey a dynamic and engaging workshop experience focused on creativity and innovation in orthotic fabrication.

6. Axolotls, Turtles, and Geckos! Oh my! Meet the Animals of Our Aquatics Lab

Dr. Justin Merry, Professor of Biology, SFU

The Biology department is home to a variety of critters from around the world! Come learn about and meet some of our ambassador animals, where they live in the wild, their adaptations, and their conservation concerns. Members of SFU Biology club will be there to talk with you and answer questions.

7. Chemical Flavors and Fragrance

Dr. Benjamin Smith, Associate Professor of Chemistry, SFU

Your sense of taste is fairly limited only allowing for you to sense 5 basic flavors: sweet, salty, sour, savory (umami), and bitter. Your nose, however, can detect millions of different odors. In this session, we'll explore different tastes, smells, and flavors. Using pure compounds as our guide, you'll develop your palate before we try to place the flavors in a number of different kombuchas.

8. Chickens, T-Rex, and Phylogenies

Dr. Gail Drus, Associate Professor of Biology, SFU

Students will learn about how evolution works, and how phylogenies (visual depictions of evolution) can be used to trace traits from ancestors to descendants. In this case, the ancestors are dinosaurs and the descendants are birds, specifically chickens. Students will be able to interact with live chickens as a part of the activity. There will be lots of photo-ops available.

9. Cryptography: Making and Breaking Secret Codes

Dr. Kevin Slonka, Associate Professor of Computer Science/Cyber Security, SFU

What if you could send a message that everybody could see but only a few could read? Find out how to encrypt and decrypt basic messages in this session. Coded messages are used by spies, diplomats, and the intelligence community, but also used on almost all Internet transactions. Make and break some simple codes in this session and learn some of the theory behind codes.

10. CSI Loretto: Help Forensic Chemists Solve a Crime

Dr. Ashley Smith-Diemler, Associate Professor of Chemistry, and students: Toby Cree, Abby Seese, Matthew Hargittai, Izzy Lumley, Mikayla Quaid, Josh Koval, Kennedy Kokoski, SFU

Work together with the CSI Loretto team to solve a crime. You will review the evidence collected from the crime scene to identify the suspect who committed the crime. This analysis will require creativity, attention to detail, and collaboration with your peers and the CSI team. Bring your curiosity to compare fiber, hair, and blood (simulated) evidence to help us catch the perpetrator!

11. Disastrous Floods and the Demise of Steel in Johnstown

Dr. Patrick Farabaugh, Professor of Communications, SFU

Learn more about the history of the steel and coal industry in the Johnstown region, as well as the causes and the science behind the three major floods that have hit this city. In this session, author Pat Farabaugh will talk about his latest book - "Disastrous Floods and the Demise of Steel in Johnstown" - and the process of writing and publishing a book.

12. Exploring a Future in Pharmacy? SFU Chemistry has a 100% Placement Rate in Pharmacy School. Check Us Out!

Dr. Rose Clark, Professor of Chemistry, SFU

We will discuss how to get to pharmacy school with a 2-year, 3-year, and 4-year plan at SFU. After SFU you move into your PharmD program at the Duquesne, LECOM, or other school of your choosing. We will also do some fun chemistry experiments to liven things up and do a quiz game to win some prizes. Look forward to having fun and learning about our chemistry program.

13. Field Biology of the Coastal Carolinas

Dr. Lane Loya, Professor of Biology; Biology 322 Students, SFU

Learn about alligators, snapping shrimp, endangered woodpeckers, and more as we explore the wildlife and ecosystems of South Carolina in this interactive session. Participants will learn about the SFU Field Biology course, which offers students an exciting opportunity to experience nature first-hand.

14. Game On: Elevate Coordination and Brain Power with Bioness BITS!

Dr. Lorie Rowles, OTD, OTR/L, Associate Professor of Occupational Therapy, SFU

The Bioness Integrated Therapy System (BITS) is an interactive touch screen therapy device to improve hand-eye coordination, reaction time, depth perception and working memory for people of all ages. By playing interactive games students are able to improve their coordination and brain function in an engaging, fun way.

15. Guess Who? Adventures in Password Cracking

Professor Michael Zambotti, Assistant Professor of Computer Science/Cyber Security, SFU

Students will learn about the basics of passwords and how they are stored. We will also investigate some password cracking tools. Students will take away an understanding of how to create strong passwords as well as how to discover if their passwords have been compromised.

16. How Do You Rate as a Critical Thinker?

Dr. Brennan Thomas, Professor of English, Dr. Larissa Clachar, Associate Professor of Spanish, SFU

Can you "think outside the box" to resolve seemingly impossible tasks? Can you use ordinary household items in new ways? Can you solve challenging puzzles in just a few minutes or create your own puzzles in for others to solve? Take our critical thinking challenge to see how you rate as a critical thinker and learn tricks to think even faster and smarter!

17. How the Printing Press Revolutionized the Written Word

Dr. Lisa Beiswenger, Assistant Professor of English, SFU

In this session, participants will learn about the origins of the printing industry in Europe and try their hand at setting print and printing a bookmark on a miniature Gutenberg-style printing press.

18. Insights and Advice from Premedicine Students

Dr. Kate Criswell, Assistant Professor of Biology and Premedicine Advisor, and Dr. Sue Reimer, Professor of Biology, and Premedicine students, SFU

Interested in medicine, optometry, dentistry, veterinary medicine, or pharmacy? Join us as we have a panel discussion featuring Saint Francis University Premedicine students. Learn how they chose a school, what courses they are taking, and how they are planning their path to medical school.

19. Introduction to Aircraft Systems and Maintenance Technician Procedures

Ms. Brianna Pavkovich, Director, Aviation Maintenance Technician Program, Mr. Michael Dipko, Lead Instructor, Students: Liam Kerlin, Michael Folton, Hayden Sutton, Mason Krouse, Joshua Mathis, SFU

Dive into what a career and outlook as a pilot looks like right now and in the future. A shortage exists for commercial pilots and is expected to only grow in the coming years. With a new aviation program, you gain flight experience and a pilot license as you complete your degree in business, criminal justice, engineering, or other majors. Hear about the many opportunities available to you as a pilot and find a possible career direction.

20. It's the Power of the Wind

Mr. Michael Sell, Director of the Institute for Energy, SFU

How much electricity can one wind turbine produce? Why are they built on the tops of mountains? Attend this session to discover one of the world's fastest growing energy resources. Participants will learn about the advantages and disadvantages of wind energy. Use model wind turbines to test different blade designs and see how much electricity you can generate from the power of the wind.

21. Join the Red Flash Family: An Introduction to SFU Admission and Financial Aid

Dr. Bobby Anderson, Director of Admissions, SFU

Saint Francis University is one of the premier institutions in the Northeast touting 1) nationally recognized academic programs, 2) amazing opportunities in internships, study abroad, research, and more, 3) NCAA Division I athletics, and 4) exceptional outcomes for graduates including very impressive graduate school and career success! Getting into SFU is easier than you think and the financial aid is very generous...let us show you how you can "Become that Someone" you always believed you could be...at Saint Francis University!

22. Luke Trotz Esports Arena Open Play

Mr. Ethan Wingard, Esports Coordinator, SFU

Students can visit the state-of-the-art Luke Trotz Esports Arena and play a variety of games including Super Smash Bros. Ultimate, Rocket League, Valorant, and more! In addition, staff and students will be present and available to discuss the Collegiate Esports experience (including possible scholarships) and steps to join the team.

23. Make College Count: Experiences that Set You Apart from the Crowd

Dr. Bobby Anderson, Director of Admissions, SFU

All students choose a college major to lead to their first job. What you learn will in part determine which job you get, the impact you make, and how much you can earn. Learning includes both the content in your courses and the portfolio of experiences you acquire during your four years of college. In selecting a college, look for opportunities that transform you from just another graduate to someone that employers and communities are seeking.

24. Making Sense of Our Sensory Systems

Dr. Julie Nagle OTR/L, Associate Professor of Occupational Therapy, and Dr. Erin Long OTR/L, Assistant Professor of Occupational Therapy, SFU

This session will include a brief overview of the 8 sensory systems, what happens when our body's sensory needs are not met, and what we can do about it. This session is filled with hands-on learning experiences with several SENSEational take-aways! You might consider a career in occupational therapy after attending.

25. Music and Mindfulness Strategies for Anxiety

Mr. James Donovan, Assistant Professor of Fine Arts, SFU; TEDx Speaker, Multi-Platinum Recording Artist

Music based self-care activities have been shown to improve your mood, relieve stress, increase mental focus and to build social connections. Beginners are warmly welcomed, and instruments are provided for all to use during the program. During the session participants will experience how to use music making to energize your body, clear your mind and become deeply relaxed; practice techniques to use rhythm to slow your brainwaves to prepare for sleep; use music to raise your energy and lift your mood; and connect with each other through musical social games

26. Science Fiction Becomes Reality in the Experiential Learning Commons

Ms. Brenda Guzik, Director of Experiential Learning Commons; Dr. Jessica Gregg, Assistant Professor of Nursing; Ms. Kara Coleman, Instructor of Nursing; Ms. Carly Mikolich, Instructor of Nursing; Mr. David Wolfe, Simulation Operation Specialist, SFU

Visit our Virtual Reality Anatomy Lab for hands-on experience with our virtual dissection/science Anatomage Tables and our mixed reality HoloAnatomy Lenses. In the virtual reality lab, you can swipe your finger to soar through the inside of the ear or view a beating heart. You will see life-size images of human bodies that can be turned or even flipped to get clear images of the body as well as internal organs and bone structure. You can see cadaver images of dogs, cats, small rodents, birds, reptiles, and farm and aquatic animals with regular or diseased anatomy such as a two-headed calf. You can conduct virtual biology, physics and chemistry experiments. You will have a 3D perspective of every part of the body. The mixed sensory experiences enable users to study human anatomy with a high level of detail and interactivity that is revolutionary in the field of medical education.

27. Shut Up and Drive!

Dr. Amy Hudkins, Clinical Associate Professor of Occupational Therapy, SFU

Check out the occupational therapy department's high fidelity driving simulator. Driving is a complex occupation. When a person wants or needs to return to driving after sustaining a medical condition, such as a stroke, occupational therapists can help assess if the person has the skills necessary to drive. Participants will have a chance to experience the driving simulator with a variety of conditions. Caution, this can cause motion sickness.

28. Space Science and Engineering

Dr. Timothy F. Miller, Associate Professor of General Engineering, SFU

See what Saint Francis is doing in space! Learn all about our current space-based efforts at SFU, including CubeSat, Radio Astronomy, and Stratospheric Ballooning. It will be out of this world!

29. STEAM Careers and You!

Ms. Beth McGregor, Director of Career Services; Ms. Becky Cacciotti, Assistant Director of Career Services; Mr. Andrew Stopko, Assistant Director of Employer Relations/Internships, SFU

Today's STEAM professionals create virtual worlds, design amazing machines, invent new materials, construct earth-friendly buildings, and engineer cutting-edge air vehicles. Over the next 20 years, the science, technology, engineering, arts, and math (STEAM) field is projected to grow significantly. You have the chance to be the innovators, educators, and researchers who will change the world. In this session we'll explore careers and majors in the STEAM field and how your personality, interests, skills, and values might fit in a STEAM career. Get started on exploring and preparing for a STEAM career of the future!

30. The Lighter Side of Chemistry: Let's R.O.C.K.

Dr. Edward Zovinka, Professor of Chemistry; R.O.C.K Student Leaders, SFU

Make and enjoy liquid nitrogen ice cream and explore fun, yet easy to do experiments that teach you about the world around you! Be prepared to have relax and enjoy chemistry.

31. The Mathematics of MC Escher

Dr. Brendon LaBuz, Professor of Mathematics, SFU

MC Escher is famous for his stunning works like Relativity which shows an impossible staircase and Drawing Hands which shows two hands drawing each other. Later in his career, he used a model of hyperbolic geometry to create his Circle Limit series. We will explore hyperbolic geometry through these four beautiful woodcuts and then create our own tilings of the hyperbolic plane.

32. The Science of Exercise and Human Movement

Dr. Kristofer S. Wisniewski, Associate Professor of Exercise Physiology; Dr. Michelle Stehman, Assistant Professor of Exercise Physiology; Mr. Tyke Steiner, Instructor of Exercise Physiology; and Dr. Mark Boland, Clinical Associate Professor of Physical Therapy, SFU

During exercise, the heart beats to move blood and oxygen so muscles can move. Blood pressure and breathing rates rise. Muscles produce acid and carbon dioxide. What does all this mean? What does it look like? How do you do it correctly to avoid injury or increase your performance? See all of this live in the Human Performance Laboratory, and know how your body is able to move. Let us show you the science of exercise and movement!

33. Theatrical Improvisation for Your Life

Dr. Lance Mekeel, Assistant Professor of Theatre, SFU

Many are familiar with the skills theatrical improvisers have: thinking on one's feet; being flexible; saying "Yes, and..." But improv teaches more than that, and, in fact, grew out of social workers trying to help impoverished communities improve their own lives. Come play in some fun improv exercises and learn how the skills can help you in your everyday life!

34. Tour of the Saint Francis University Campus

Ms. Victoria Ivock, Associate Director of Admissions, and Bell Tower Student Ambassadors, SFU

SFU students will lead a walking tour of the Saint Francis University Campus including classrooms, Library and Learning Commons, DiSepio Institute for Rural Health and Wellness, Science Center, residence hall, and other key locations on campus. During the tour, they will talk about college experience and life on campus.

35. Try SCUBA Diving

Dr. Matthew Birk, Director of the Academic Diving Program; Dr. Amanda Martino, Associate Professor of Biology; Mr. Andrew Scanlan, Instructor of Biology, SFU

Ever wanted to try out SCUBA diving, but wasn't sure if it was for you? Now's your chance! Join our Try SCUBA Diving event! You can try out scuba diving right here on campus at the Stokes pool. All equipment is provided. All you need is a swimsuit and towel. Enjoy some fun underwater activities and learn how you can get SCUBA certified at SFU.

36. Where the World's Water Is (And How We Treat It)

Dr. Rachel Wagner, Professor of Environmental Engineering, SFU

A conversation about where we get our water and an activity showing some of the ways we use to treat it.

37. "Why not add a language to that?"

Dr. Larissa Clachar, Associate Professor of Spanish, SFU

Consider the benefits of pairing Spanish with other areas of interest like teaching, law enforcement, social work, business, or healthcare. Over 40 million people in the United States speak Spanish, making it the most spoken foreign language in our society. Imagine the doors learning Spanish could open! Learn about opportunities for service and employment and the benefits of bilingualism for our brains and longevity.

38. Zentangle

Ms. Jessica Campbell, Assistant Professor of Visual Arts, SFU

Zentangle drawing is a way to practice focused art meditation through drawing by using repetitive lines, marks, circles, and shapes. Advocates note that it has multiple benefits including calming an anxious mind, increasing self-confidence, and cultivating moment-to-moment awareness in a similar way as mindfulness meditation.