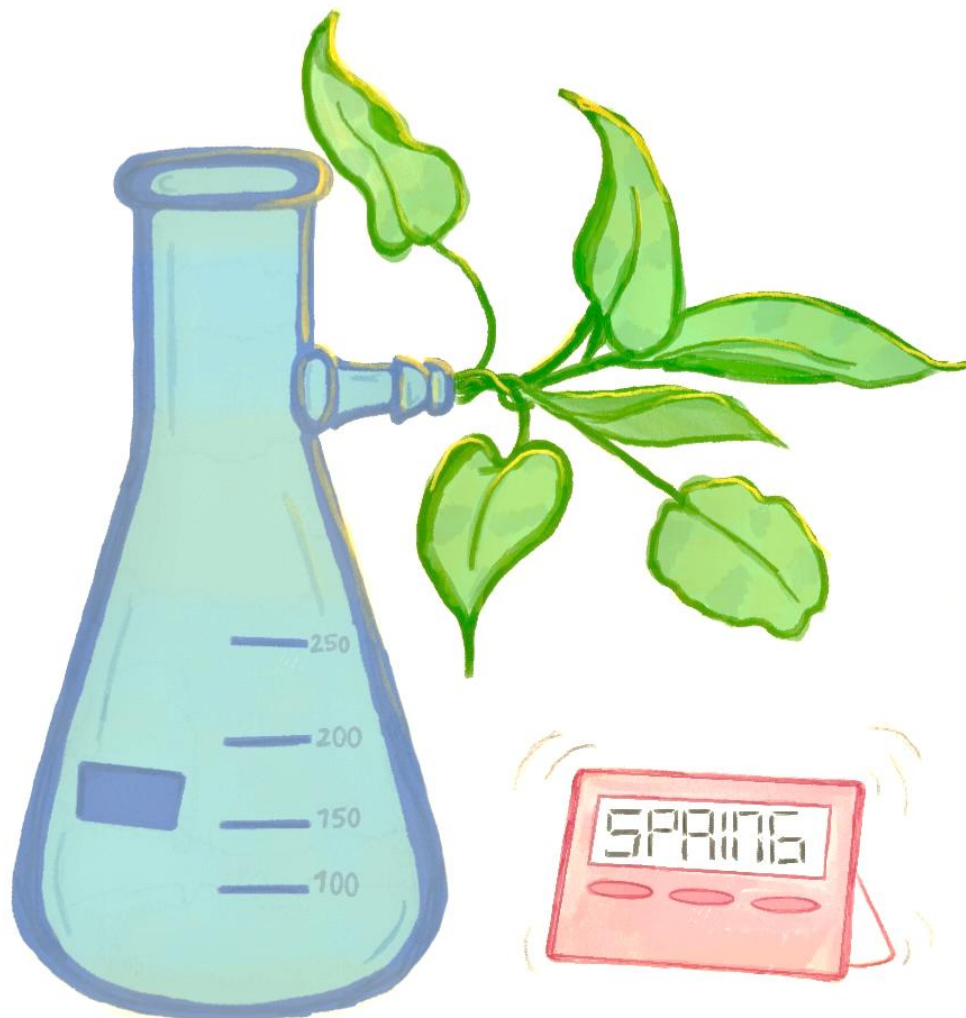


The Lion Ledger

🌸 Spring 2026 🌸



Sweet Spring Cover Art by Allison Krebs, 2nd year Anatomy PhD Student

Note from the Editors:

Nothing says spring like blooming flowers, warmer air, and the arrival of the Spring Edition of the Lion Ledger! So, take a moment to relax, recharge, and enjoy these articles. This season's issue is filled with stories about growth, discovery, and new beginnings. From Habiba's article on the rise in seasonal allergies, to Paige's piece on exploring how trees know when spring has arrived, we are diving into the science of spring! You will also find timely articles on the effects of global warming on bees by Habiba, and the science behind the latest lunar landing by Natale. Looking to get involved? We are spotlighting four pieces where Allison describes a new graduate student organization, Chris gives us another edition of geopolitics focused on radiopharmaceuticals, Jeniece helps us bargain hunt for better groceries, and Julia details the best kept booklovers holiday. If you are hungry for a taste of spring, the featured fresh recipes by Paige, Natale, Gabrielle, and Jeniece are sure to satisfy your seasonal cravings. Lastly, check out Julia's piece on spring hikes to help you enjoy the longer and sunnier days. Have an idea for a future Lion Ledger piece? Be sure to reach out to us at lionstalkscience@gmail.com and we'll be happy to include it in the next (Summer) Edition!

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This Season in Science

Men are from Mars, Pollen is from Your City's Bad Planning

By: Habiba Abdelhalim

Cities are often designed with green spaces to make life healthier and more enjoyable. Parks, trees, and gardens can reduce stress, improve air quality, and make urban areas feel more livable. But [research](#) shows there is an unexpected downside: some of the very plants meant to help us may also be contributing to rising pollen allergies. The issue is not simply that cities have plants; rather, it is how those plants are chosen and managed.

Cities often rely on a limited number of plant species, creating environments where large amounts of the same pollen are released at once. When [biodiversity](#) is low, exposure to a single type of pollen increases, making it more likely for people to develop allergies. People living in urban areas are approximately 20% more likely to suffer airborne pollen allergies than people living in rural areas, a disparity driven largely by the uniformity of [urban planting choices](#). Introducing non-native species compounds the problem: for example, the genus *Casuarina* (Australian pine) has been introduced to many coastal cities as an ornamental tree, and because it is wind-pollinated and produces large amounts of pollen during late summer and autumn, it has created a [new seasonal source of allergic symptoms](#) for local populations. Urban layouts can also concentrate

pollen in certain areas, especially when the same trees are planted in rows along streets or densely clustered in parks.

One widely discussed explanation for increased urban pollen is something called [botanical sexism](#). This concept originates from horticultural epidemiologist Thomas Ogren, who [traces the problem](#) to a 1949 USDA Yearbook of Agriculture recommendation that "when used for street plantings, only male trees should be selected, to avoid the nuisance from the seed." The "seed" refers to fruit, which is only produced by female trees. In an urban setting, fruit production in female plants is associated with problems including litter, undesirable odor, and slippery surfaces. Ogren argues this led to a widespread preference for male trees, dubbed botanical sexism, often selected from pollen-intensive clones (male trees produce pollen, while female trees generally trap it). Then,

once these male trees matured, pollen levels in cities rose sharply.

However, this explanation has important limitations. Ogren's citation of the USDA recommendation was incomplete: the [original passage](#) specified only male cottonwood trees to avoid the nuisance of cottony seed, meaning the recommendation applied to one specific species rather than urban planting policy broadly. Furthermore, the majority of plants are [monoecious](#), meaning they carry both male and female reproductive structures, so the concept of botanical sexism does not apply to most species planted in cities. Perhaps most importantly, no empirical data directly establish that an overabundance of male trees is the primary driver of rising urban pollen allergies.

The reality is that multiple factors are at play. The allergenic potential of pollen grains may be enhanced by

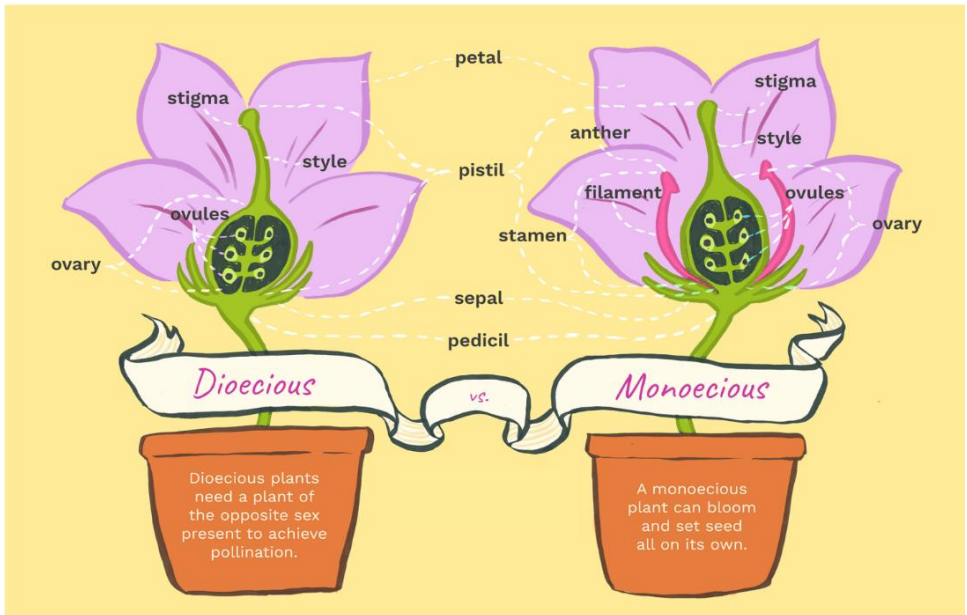


Figure 1: Structural comparison of dioecious and monoecious flowering plants. Dioecious plants (left) possess either male or female reproductive structures, but not both. Monoecious plants (right) carry both the pistil (female structure) and the stamen (male structure) within the same flower, allowing them to bloom and set seed independently.

exposure to air pollutants, and pollen production in species with considerable allergenic potential has actually increased due to [elevated CO₂ levels](#). Climate change also extends the pollen season, allowing plants to begin and end pollination later. [Warmer temperatures](#) mean plants can start pollinating earlier and continue later into the season, prolonging the window of exposure for allergy sufferers.

So, what should cities do? [Key recommendations](#) include increasing plant biodiversity, choosing species with low-to-moderate pollen production, ensuring the controlled and selective introduction of exotic species, and replacing male individuals of dioecious species with females where possible, since this does not alter aesthetics and does not always result in fruit-litter problems. In the absence of well-validated allergenicity data, avoiding monodominant planting and prioritizing greater species diversity appears to be the most practical and evidence-supported approach. Botanical sexism may be a catchy concept, but urban pollen allergies are the product of many overlapping decisions about how we design, plant, and maintain our cities. Unfortunately, fixing them will require more than just planting a few more female trees!

Who Talks to the Trees? How Plants Know When It's Spring

By: Paige Bond

Without the National Weather Service or the cloud-scouting services of groundhog fortune teller Punxsutawney Phil, how do plants sense changes in weather to know when its spring? Plants react to a variety of environmental factors, including light, temperature, water, and nutrient availability. Multiple redundant mechanisms are used to sense changes in these environmental factors to indicate when plants, specifically angiosperms (flowering plants), should start growing and blooming. It is [hypothesized](#) that these redundant mechanisms are important because they allow plants to be more resistant to environmental changes. Although in general this is good for the plant, it can make it difficult to fully understand what genes are important for starting the growth process in the spring.

The simplest explanation, although not the only one, for how plants know when winter turns to spring is through increased duration and strength of sunlight. The duration of light, or [photoperiod](#), is central to many

plants' ability to detect the change in seasons. Photoperiodism plays a role in many plant functions such as vegetative growth and, of course, flowering time. One core mechanism for detecting a photoperiod is through the regulation of the protein CONSTANS (CO). CO is a special protein known as a transcription factor, whose main job is activating other genes within the cell. [Although CO has many functions](#), a key one is to increase expression of a gene known as *FLOWERING LOCUS T*, which, as you might have guessed, causes plants to bloom. Throughout the day, the CO gene is transcribed, which results in production of CO mRNA, an intermediate before the production of CO protein (Figure 1). Much of CO mRNA stability is based off interactions with photoreceptors, or light-responsive proteins. As the seasons transition from winter to spring, the photoperiod increases, which in turn increases the activity of photoreceptors, in part due to increased abundance of photoreceptors [phyA and cry2](#). The increase in activity of the photoreceptors stabilize CO mRNA, increasing CO abundance within the plant and eventually leading to more CO protein. Once the amount of CO surpasses a specific threshold, the plant will flower.

The alignment of the plant circadian rhythm with photoperiodism is known as [the external coincidence model](#).

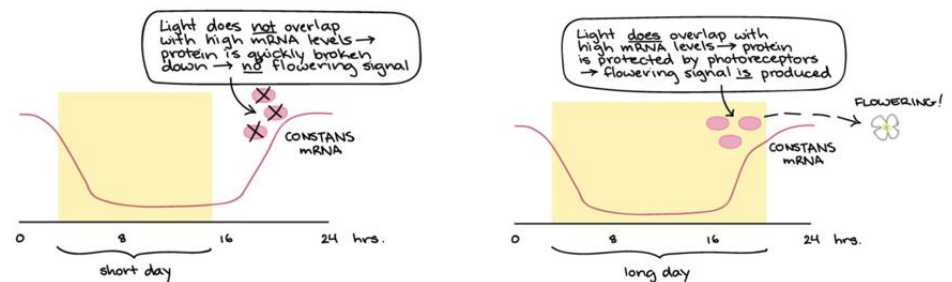


Figure 1: [Levels of CONSTANS mRNA](#) increase with increasing day time.

Although it aligns with many species of plant, most research has been conducted on *Arabidopsis*, which belong to the mustard family. [Importantly, the external coincidence model extends to wheat, barely, and rice, making it extremely important in our food supply.](#) Research into understanding photoperiodism is essential for the successful cultivation of these crops in various latitudes and regions, as the length of day can vary drastically throughout the season depending on distance from the equator. In addition to photoperiodism, other factors such as temperature, water, and nutrient availability affect plant flowering and thus must also be considered. Through increased research and understanding of these processes, scientists can develop crops that are less sensitive to changes in light and temperature, an increasing necessity to contend with climate change.



Science in the News

Why Your Local Bees May Be Terrible at Handling a Heat Wave

By: Habiba Abdelhalim

[Climate change](#) is pushing temperatures to new extremes, disrupting ecosystems worldwide. Insects — from the bees that pollinate

our crops to the wasps that keep pest populations in check — are caught in the middle. A new [study](#) set out to understand whether bees and wasps can adjust to warmer temperatures, and if where they grew up makes a difference. The answer turns out to be surprisingly nuanced! Both species emerge earlier as temperatures rise, but some pay a far higher price than others, and the species bearing the greatest costs may be the spring-emerging bees we can least afford to lose.

To test how bees and wasps respond to rising temperatures, and whether their home climate shapes that response, the researchers designed an interesting experiment. The researchers collected cavity-nesting bees and wasps from 161 sites across southern Germany, a region that spans a range of winter climates, from chilly mountain zones to relatively warm lowlands. If the bees were left in their natural habitat and just compared when they emerged in spring, researchers wouldn't know whether any differences observed were due to genetics or simply because some sites had a warmer winter than others. To get around this problem, the researchers brought all

the insects together and had them experience the exact same winter conditions regardless of where they originally came from. Then, they placed them into climate chambers set to three different temperature regimes: cool (reflecting current cold sites), warm (reflecting current warm sites), and hot (a projected future climate scenario roughly 5°C warmer) (Figure 1). They then tracked two things, first, when the insects emerged from their cocoons in spring or summer, and second, how much body mass they had after emerging.

All species emerged earlier in warmer chambers. This is a form of [phenotypic plasticity](#), the ability to adjust behavior or physiology in response to environmental conditions without any change in genetics. On one hand, this is good news because bees and wasps are not rigidly locked into a fixed schedule. However, this is where it gets interesting! The researchers found that where an insect came from also shaped when it emerged, specifically, the typical climate of its home site over many decades. This long-term average temperature is a fingerprint of the conditions a population has been adapting to for

Year	2019	2019	2019/2020	2020	2020
Season	Spring	Summer	Fall/winter	Spring	Summer
Spring insects	Adults emerge/egg laying	Development and prepupal diapause	Diapause (adult in cocoon or pupa)	Adults emerge	
Summer insects	Development	Adults emerge/egg laying	Diapause (prepupa)	Development	Adults emerge
Experimental design	Pre-emergence year temperature (natural conditions)		Common winter temperature (outdoors in Würzburg, Germany)	Temperature treatments (common garden experiment)	

Figure 1: Spring- and summer-emerging cavity-nesting insects were collected in autumn. All insects were brought together to spend the winter under the same outdoor conditions, ensuring any differences in emergence could be attributed to their climate of origin, not variation in local winter weather. They were then exposed to variable post-winter temperature treatments in climate chambers.

generations, meaning differences in emergence timing tied to it are likely baked into the insects' genetics, not just a response to last year's weather. This points to local genetic adaptation, not changes happening within a single insect's lifetime. These differences have been built up over many generations of natural selection, with insects better suited to their local climate surviving and reproducing more successfully. You can think of it as evolution quietly sculpting each population to match its home environment! Layered on top of that plasticity, spring-emerging species showed what scientists call [cogradient variation](#): bees from warmer home climates emerged even earlier when placed in warm chambers, compounding their plastic response. Cold-adapted spring bees, by contrast, held back a little, likely an evolved safeguard against emerging before flowers are ready or before late frosts have passed. The summer-emerging bee *Heriades truncorum* showed the reverse pattern, called [countergradient variation](#): individuals from cooler climates emerged earlier than their warm-climate counterparts when conditions were cool, suggesting they have evolved faster internal development to compensate for their shorter seasons.

The fitness consequences of warming temperatures, measured through body mass, told a cautionary tale. [Body mass](#) measurements are essential because fat reserves at emergence are directly tied to survival, reproduction, and overall fitness. The researcher found that later emergence consistently meant lower mass and bees that lingered in their cocoons burned through fat reserves before ever taking their first flight. In the hottest treatment, summer bee females lost up to 34% of their body mass if they failed to

emerge promptly. For spring species, the picture was equally troubling: cool-adapted bees placed in warm conditions lost significantly more mass than their warm-adapted counterparts. The warm-adapted bees appeared better physiologically equipped to handle higher temperatures without burning through energy reserves. This asymmetry is the study's most important warning. Cool-climate spring bees are doubly vulnerable because they are less prepared for warmth physiologically and live in the very regions experiencing some of the [fastest temperature increases](#). These populations face strong selective pressures and potentially severe fitness losses under continued warming, and since body condition affects reproduction, those losses could ripple through local pollinator populations for generations.

The study ultimately paints a picture of resilience and fragility existing side by side within the same insect communities. Plasticity buys time, but it cannot fully compensate for a climate shifting faster than local adaptation can follow.

Beyond the Flyby: The Hidden Science of Artemis II

By: Natale Hall

When I opened Instagram on the evening of April 1st, I was inundated with videos and photos of a spacecraft lifting off from Cape Canaveral, Florida. My first thought was, "Is this an April Fool's joke?" quickly followed by, "I didn't realize this many people cared about space missions," and "What's the big deal?" When I learned the spacecraft was

taking four astronauts on what sounded like a joyride around the moon, I was even more puzzled by all the hype. My confusion led me on a deep dive into this journey to deep space, and I quickly realized that this mission was much more than a joyride.

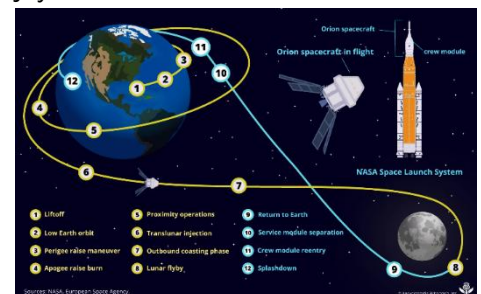


Figure 1: [Artemis II flight path](#).

In fact, Artemis II marked humanity's first journey beyond [low Earth orbit](#), or a distance greater than 2,000 km from Earth's surface, since the [Apollo 17 mission](#) more than fifty years ago. The mission was also the first crewed test flight of NASA's new Orion spacecraft, meant to usher in a new era of space travel through collecting critical data on how both spacecraft systems and the human body perform in deep space.

Orion and the Moon's Hidden Hemisphere

First and foremost, Artemis II was a [massive stress test of Orion's](#) life-support, propulsion, power, thermal, and navigation systems. Deep space exposes spacecraft to harsher radiation, greater temperature swings, and longer communication delays than low Earth orbit. Verifying that Orion can sustain a crew safely through these conditions is essential before astronauts return to the lunar surface.

Although Artemis II did not land on the moon, the crew recorded detailed observations of the far side, or south

pole, which faces away from Earth. The Moon's south pole contains geological features that will shape the planning and safety of future planned moon landings and even the construction of moon bases. Using high-resolution imaging and spectral measurements, the astronauts aboard carefully documented crater structures, potential landing hazards, and regions where water ice may be trapped in permanently shadowed areas. These data will guide navigation, landing site selection, and scientific priorities for future crews.

Understanding How Humans Survive Beyond Earth's Orbit

Without Earth's magnetic field, astronauts too experience significantly higher radiation exposure. They also face prolonged physiological stressors, including altered sleep cycles, fluid shifts, immune changes, and the psychological demands of isolation. To understand these effects, Artemis II conducted several biological and behavioral studies focused on how the human body responds to deep-space conditions.

Immune Biomarkers

[Previous studies](#) have shown that dormant viruses—such as Herpes Simplex Virus or Varicella-Zoster—can reactivate during spaceflight. These viruses remain latent in the body long after initial infection, “asleep” inside cells until physiological stress triggers their return. To investigate this reactivation, in addition to [other documented immune changes](#) with spaceflight like increased infection and allergies, [researchers collected blood, saliva, and urine samples](#) from the crew before, during, and after the mission to track stress hormones, viral activity, and immune cell behavior. The findings will help shape future countermeasures to keep

astronauts healthy on longer missions.

ARChER: Monitoring Behavior and Performance

The [Artemis Research for Crew Health and Readiness](#) (ARChER) study equipped astronauts with wrist-worn sensors that continuously tracked movement and sleep. Combined with cognitive and behavioral assessments before and after flight, ARChER provides insight into how deep-space travel affects alertness, teamwork, decision-making, and overall performance, which are all key factors for successful, long-term space missions.

AVATAR: Organs-on-Chips in Deep Space

Artemis II also carried out an experiment dubbed [A Virtual Astronaut Tissue Analog Response](#), or AVATAR, which uses tiny [organ-on-a-chip devices](#) that mimic the function of human tissues such as heart, lung, and brain. These chips contained bone marrow cells taken from the Artemis II crew members themselves. By exposing these tissues to deep-space radiation and analyzing changes in gene expression with [single-cell RNA sequencing](#), scientists can observe how human cells respond to DNA-damaging conditions in real time. The results will inform not only astronaut health but also our understanding of radiation effects on Earth, such as the impacts of UV exposure or chemotherapy.

Looking Ahead

The science of Artemis II lays the foundation for sustained lunar and space exploration. By understanding the Moon's terrain, validating Orion's systems, and studying how the human body adapts to deep space,

NASA is preparing for longer missions, future lunar bases, and eventually, crewed journeys to Mars.



Get Involved

Student Organization Spotlight: FOSSA Brings Anatomy Outreach to Life

By: Allison Krebs

What started as a conversation among students involved in anatomy outreach efforts has now grown into the College of Medicine's newest student organization: the Fellowship for Outreach and Study of Structural Anatomy (FOSSA).

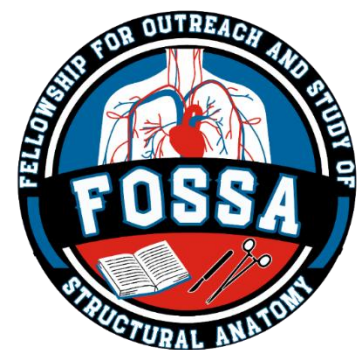


Figure 1: FOSSA Logo

The idea for FOSSA grew naturally out of work that many graduate and professional students were already doing. For a little over a year, students have been initiating, hosting, and traveling for anatomy and healthcare-

focused outreach events, and one question kept coming up: “What if we made this official?” What began as shared enthusiasm for service, anatomy education, and community engagement quickly turned into a vision for a student organization that could bring these efforts together under one roof.

Recent community outreach efforts have included hands-on training workshops with local firefighters and EMS personnel, where students led interactive stations focused on cardiac and pulmonary emergencies. These sessions featured cadaveric heart and lung specimens, histology demonstrations using microscopes, CPR training, cardiac point-of-care ultrasound (PoCUS), and ambulance-based emergency response demonstrations (Figure 2). Students have also participated in healthcare career-focused programming locally at the Milton Hershey School and statewide at the Pennsylvania Health Occupation Students of America (HOSA) State Competition, helping inspire the next generation to explore careers in medicine and science.



Figure 2: Penn State COM students, physicians, and anatomists assisting with pulmonary emergency outreach at Fivepointville Fire Company.

From the momentum and motivation of these events, and yes, a little extra paperwork, FOSSA was officially formed as a space to bring together students with a shared interest in

anatomy, service, education, and professional connection. Fittingly, the name “FOSSA” was chosen in part because a fossa is an anatomical depression in a bone or other structure; it seemed like the perfect nod to the group’s central focus.

FOSSA’s mission is to promote appreciation for anatomy across the College of Medicine while also extending that enthusiasm into the broader community through outreach initiatives. Planned activities for the upcoming academic year include a supplemental anatomy seminar series aligned with medical and physician assistant coursework, clinically oriented discussions, and continued outreach opportunities with local schools, first responders, and community partners.

Whether your interests lie in medicine, teaching, research, or service, FOSSA welcomes all students at the College of Medicine who want to explore anatomy beyond the classroom and connect with others who share that enthusiasm.

Global Politics for Scientists: Iranian Scientists Persist

By: Chris Pallés

[Salaam](#) and welcome back for the third installment of my *Global Politics for Scientists* series! This time, we’ll learn about Iran and the nuclear medicine of radiopharmaceuticals used to diagnose some diseases and treat others like cancer. Despite, or perhaps because of, the many intense sanctions on Iran throughout recent decades, Iran has developed a remarkable level of self-sufficiency with [particular focus on medical](#)

[treatments and scientific and technological advancements](#).

[In 1925, Reza Khan Pahlavi became the Shah](#), or ruler, of the famously intellectual Persia, and renamed the country to Iran. He [pursued modernization](#) through Westernization and secularization to keep up with a rapidly industrializing world and improve their technological progress, [fueled largely by oil profits](#). Invasions by Britain and the USSR forced Reza Khan to abdicate, succeeded by his son, [Mohammed Reza Pahlavi](#). In 1951, [Mohammad Mosaddegh](#) was democratically elected Prime Minister and [tried to nationalize the oil industry](#), taking control of the industry from the US and Britain private companies and putting the money and control into the hands of the Iranian government. However, the US and Britain were suspicious of Iran’s potential ties to the USSR and worried about the threat to Western oil profits. The [US coordinated Operation Ajax to remove Prime Minister Mosaddegh from power in 1953](#) and reinstated former Shah Mohammed Reza Pahlavi. Although allied with the US, the Shah’s brutal authoritarianism and failing health forced him into exile, triggering the [Islamic Revolution in 1979](#), led by students and [Ayatollah Ruhollah Khomeini](#), who named himself Supreme Leader of the renamed Islamic Republic of Iran.

In what’s known as the [Iranian Hostage Crisis](#), Iranian students took 66 Americans hostage at the US Embassy to demand that the Shah return to Iran and face justice from his people. Rescue missions failed and hostages were held for more than a year, until they were released in 1981. Attempts to improve our relationship were also marred by the [Iran-Contra affair](#). [Under the POTUS Ronald Reagan](#), military supplies

were sold to Iran and the money funneled to Venezuelan revolutionaries who allied with the US. In 1989, Ayatollah Khomeini died, and [Ali Khamenei](#) became the new Supreme Leader, with [Ali Akbar Hashemi-Rafsanjani](#) sworn in as the new president to rule underneath Khamenei. They established the religious Islamic Revolutionary Council, bringing back severe religious-based restrictions on their people, [even while education expanded](#). 1995 saw embargoes placed on Iran because of nuclear weaponization and terrorism accusations. In 1997, liberal [Mohammad Khatami](#) was elected as president. Under him, reformists were consistently and violently punished during repeated uprisings challenging Khamenei's rule. [International Atomic Energy Agency](#) investigations in conjunction with the UN found no evidence of a nuclear weapons program, but later refusal to comply with IAEA rules led to Iran being declared in violation of the [Nuclear Non-Proliferation Treaty](#). This led to external attempts at stopping any and all nuclear research in Iran—including radiopharmaceutical development. In 2005, [Mahmoud Ahmadinejad](#), a strongly conservative clerical figure, became president but was accused of rigging the election. In 2013, reformist-supported [Hassan Rouhani](#) won the presidential election. International embargoes on Iran lessened when President Barack Obama negotiated the [Joint Comprehensive Plan of Action \(JCPOA\) nuclear deal](#), which intensified nuclear program restrictions and international monitoring, though [radiopharmaceutical and other scientific progress continued](#). In 2018, President Donald Trump withdrew from this agreement and brought back sanctions. Protests,

which never truly went away, erupted again in 2025 with vast numbers of citizens facing brutally violent crackdowns. [In February of 2026, the US-Israeli joint military forces killed Supreme Leader Ayatollah Ali Khamenei](#).

Despite the turmoil, [Iran ranks among the top 3 producers](#) worldwide. Iranian students exhibit prowess at global events like [the International Science Olympiads](#). At renowned [international science and technological expositions](#), they have now demonstrated about [70 radioisotopes](#) used for diagnosing diseases and treating many types of cancer. With [more than 6,500 nuclear medicine centers](#), Iran has pioneered and significantly progressed in the combination of diagnostic and therapeutic radiopharmaceuticals resulting in a novel field known as [theranostics](#). Targeted tracers for bone, heart, and oncologic diseases are used frequently for personalized medicine and are often used in conjunction with advanced technological therapies like [electrochemotherapy ablative devices, a device produced by Iran and few other countries](#). [Cancer rates](#) in Iran are increasing, and it currently the [third leading cause of death](#). Even through all of the [conflict](#), Iran's scientists are [resilient](#) and dedicated to helping their fellow people. Within the scientific community, we also must not forsake them, from their [universities](#) to their academics. Remember, you can speak out for them, too: just check out this [letter](#) published in *Nature*!

Small Business Spotlight: BB's Grocery Outlet

By: Jeniece Regan

Grocery prices are rising, and it's hard to make ends meet on our stipend that barely misses the food stamp income cut off. One of the ways I reduce expenses is through shopping at BB's [Grocery Outlet](#). I discovered this place way back in 2021, and it's been my happy place. BB's is an Amish-run local dented can discount outlet that is cheaper than Grocery Outlet. As a dented can discount outlet, BB's business model is to purchase returns and leftovers from traditional grocery stores, drugstores, and online retailers, including pantry items, personal care items, and refrigerated/freezer items. Some of these items may be expired or have cosmetic damage. BB's then sells these items at a discount to the public at one of their five stores in the area.

As a graduate student, these stores give me a way to stock my pantry and try new items, while lowering my grocery bill. I recommend shopping with a general list and an open mind as you never know what you might find. Always check items over carefully and expiration dates to make sure something isn't excessively expired.

Each of the five stores has slightly different offerings, but they all have dry goods, personal care items, a refrigerated/freezer section and produce. The closest store to campus (430 N. Market Street Myerstown, PA) has a smaller selection overall, but you can often find things like King Arthur's Measure for Measure gluten free flour for \$1.25, 28-ounce Cento San Marzano diced tomatoes for

\$0.50 (Costco sells these 3 for \$11.99), and my favorite Spindrift sparkling water for \$0.25 a can. This location is also close to Horning's Market 9905 S College St, Myerstown, PA) which is a regular grocery store that has great prices on produce such as 2 raspberry packages for \$1 in the summer and bulk food items.



Sampling of items available at the BB's in Myerstown, about 40 minutes from the Medical Center.

The BB's in Quarryville (581 Camargo Road, Quarryville, PA) has a larger produce and freezer section, along with a little consignment/thrift store next to it. Closer to the Maryland border the BB's in Oxford (2176 Baltimore Pike, Oxford, PA) has the largest refrigerated section, but a smaller personal care section. Towards the west, the BB's in Newburg (18 Quigley Road, Newburg, PA) has an excellent drink and personal care section. At the corner of the parking lot, there is a farm stand that has the cheapest tomatoes in the area and good chicken eggs. The area is a cell phone dead zone, so it's a good idea to have a general memory of how you got there in case you can't get cell reception as you leave.

The BB's in Morgantown (150 Morview Boulevard, Morgantown, PA) is the largest store, with an excellent selection of produce along with another small thrift store. It's nice but likely not worth the drive unless you are going by there anyway. With the price of gas also on the rise and the

closest BB's being 22 miles away, these stores are a bit of a drive but well worth it if you carpool and stock up for a month or two.

All BB's locations accept credit cards, debit cards, cash, EBT, and checks with a valid driver's license. Their hours are generally 8am-8pm M-F, 8am-5pm on Saturday and closed on Sunday. There are a few religious holidays observed, and their website lists the store closure dates. Overall, BB's provides great options for stretching your grocery budget with a fun treasure hunt element.

Independent Bookstore Day: The Best Holiday You've Never Heard Of

By: Julia Simpson

Do you love books? How about supporting local businesses? Connecting with other like-minded literary enthusiasts? Oh boy, do I have a holiday for you: behold, [National Independent Bookstore Day!](#)



Julia kicking off the Keystone Literacy Association's Independent Bookstore Trail at [Book Bar](#) in Palmyra, Pennsylvania.

The celebration's origins [date back to 2014](#), when [Samantha Schoech](#) and [Pete Mulville](#), co-owners of Green

Apple Books, launched California Bookstore Day, modeled after the widely popular [Record Store Day](#) event that annually brought a surge of excitement and business to vinyl vendors large and small. After seeing smashing success, Bookstore Day went nationwide and is now in its thirteenth year of bringing booksellers, collectors, vendors, readers, writers, and artisans together in a joyful expression of appreciation and community.

Last year, I marked the holiday, which falls on the last Saturday in April, by cobbling together a miniature "bookstore crawl," in which I visited three indie bookstores on one day: I started out at Bookshelf Shenanigans in Elizabethtown, then drove down to Pocket Books in Lancaster, and lastly looped back to end at Book Bar in Palmyra. This year, I was delighted to see that there was an official version of this little pilgrimage that I could participate in: the Keystone Literacy Association's inaugural [Independent Bookstore Trail](#). The Trail collected sixteen central-Pennsylvania bookstores together and challenged readers to visit as many as possible between April 1st and the 25th (Indie Bookstore Day). A map with icons for all the bookstores was available at any participating shop, and stickers were given to visitors to place by the icons and fill their maps. Submitting the map – even partially completed! – at a participating bookstore by the 25th entered visitors for a prize drawing.

Through this initiative, I learned of and visited new bookstores – some, like The Underground Yarn and Bookstore, were familiar names that I had yet to explore; others, like Nooks Gallery & Bookshop in Lancaster and Aaron's Books out in Lititz, were new discoveries that made for fun, novel (ha!) adventures. If you've never heard of Independent Bookstore Day, today begins a new chapter in your bookish journey: turn a new page and mark your calendars, and next year,

become a character in the vibrant story of this charming literary holiday!



Spring Recipes

Sundrop Cake

By: Paige Bond

There's no better way to celebrate the increasing sunlight and rising temperatures of spring than with a citrus sweet treat. As the name suggests, Sundrop cake is a dessert with a not-so-secret special ingredient: Sundrop soda. Sundrop is a lemon-lime soda that is available primarily in the south. Although I failed on my quest to find Sundrop in Pennsylvania, it can be shipped to your door. Technically, any lemon-lime soda, such as 7UP or Sprite, will do. Easy, refreshing, and moist, Sundrop cake is the perfect dessert for any spring occasion!



Image Credits: [margin making mom](#)

Ingredients:

Cake base:

- 1 box of lemon cake mix
- 1 small box of instant pudding

- 1 12-ounce can of Sundrop (or any lemon-lime soda)
- 3 eggs
- ¾ cup oil

Glaze:

- 1 cup powdered sugar
- 2 tablespoons water
- 1 teaspoon vanilla

Instructions:

1. Preheat oven to 375^o F.
2. Add all cake ingredients to a large bowl, use hand mixer on high until all the ingredients are incorporated.
3. Pour into a well-floured or well-oiled bundt pan.
4. Bake for 35-40 minutes.
5. Let cake cool for at least 15 minutes before flipping it out of the bundt pan. Do not let the cake completely cool or it may be difficult to remove from the pan.
6. In a small bowl, add all the ingredients for the glaze together.
7. Pour glaze on top of the cake until it is well coated.
8. Wait for glaze to harden and add zest from one lemon (optional).

Roasted Poblano and White Bean Chili

By: Natale Hall

As the weather shifts from frigid winter to fickle spring, I find myself craving meals that still feel warm and comforting, but a little lighter and more refreshing. This vegetarian (vegan if you omit the optional sour cream or Greek yogurt topping) dish is perfect for the season. Filling and delicious with a hint of spice and a citrusy tang, this zesty chili has been one of my recent spring staples!



Image Credits: [America's Test Kitchen](#)

Ingredients:

- 5 poblano chiles, seeds and stem removed, halved lengthwise
- 3 Anaheim chiles, seeds and stem removed, halved lengthwise (If you can't find Anaheim chiles, substitute two additional poblanos and one additional jalapeño)
- 3 tablespoons vegetable oil
- 2 cans corn, rinsed and dried
- 2 onions, cut into large pieces
- 2 jalapeño chiles, stemmed, seeded, and chopped
- 2 15-ounce cans cannellini beans, rinsed
- 4 cups vegetable broth
- 6 garlic cloves, minced
- 1 tablespoon tomato paste
- 1 tablespoon ground cumin
- Salt and pepper
- 1 15-ounce can pinto beans, rinsed
- 4 scallions, green parts only, sliced thin
- ¼ cup minced fresh cilantro
- 1 tablespoon lime juice
- Optional add-ons: Sour cream or Greek yogurt, more cilantro for topping, tortilla chips.

Instructions:

1. Adjust oven rack 6 inches from broiler element and heat broiler.
2. Toss poblanos and Anaheims with 1 tablespoon oil and arrange, skin side up, on aluminum foil-lined baking sheet.
3. Broil until chiles begin to blacken and soften, about 10 minutes,

rotating pan halfway through broiling.

4. Transfer broiled chiles to bowl, cover with plastic wrap, and let steam 10 to 15 minutes.
5. As chiles steam, toss corn kernels with 1 tablespoon oil, spread evenly over foil-lined baking sheet, and broil, stirring occasionally, until beginning to brown, 5 to 10 minutes; let cool on baking sheet.
6. Peel skin off the broiled chiles, then cut into ½-inch pieces, reserving any accumulated juice.
7. In food processor, pulse onions and jalapeños together to consistency of chunky salsa, 6 to 8 pulses.
8. Heat 1 tablespoon oil in a large pot over medium heat until shimmering.
9. Add onion-jalapeño mixture and cook until softened, 5 to 7 minutes.
10. Stir in garlic, tomato paste, cumin, coriander, and ½ teaspoon salt and cook until tomato paste begins to darken, about 2 minutes.
11. As the onion-jalapeño mixture cooks, use food processor to process 1 cup cannellini beans, 1 cup broth, and ½ cup chopped roasted chiles and any accumulated juice until smooth, about 45 seconds.
12. Stir 3 cups broth into onion-jalapeño mixture, scraping up any browned bits.
13. Stir in pureed chile-bean mixture, remaining roasted chiles, remaining cannellini beans, and pinto beans.
14. Bring to simmer, then reduce heat to low and simmer gently until thickened and flavorful, about 40 minutes.
15. Off heat, stir in broiled corn kernels, scallions, cilantro, and

lime juice and season with salt and pepper to taste. Enjoy!

Mexican Inspired Street Corn Dip

By: Gabrielle Peruggia

This street corn dip is the kind of appetizer that disappears the moment it hits the table. What started as a spring favorite quickly became a year-round request from my family and friends – they insist I bring it to every gathering. It's packed with bright, fresh flavors: sweet corn, crisp jalapeño, vibrant cilantro, and a creamy, tangy sauce that ties everything together. Serve it with chips as an irresistible dip or spoon it over rice and chicken for a delicious twist on dinner. Fair warning: make it once, and you'll be asked to make it forever!



Ingredients (serves 6):

- 3 cups corn kernels (frozen or fresh)
- 1 tablespoon butter
- 1 4–5-inch jalapeño pepper, minced
- ¼ cup diced red onion
- 1 ½ teaspoon chili powder (smoked chili powder is my favorite for this recipe!)
- ¼ mayonnaise
- ¼ cup Greek yogurt (or sour cream)
- 1 ½ tablespoons lime juice (about 1 lime)

- ½ cup crumbled cotija cheese
- 3 tablespoons chopped cilantro
- Salt to taste

Instructions:

1. In a skillet (cast iron works best), melt butter over medium-high heat. Add corn, stir occasionally. Once corn is cooked through, turn heat up to high to get that blackened/char look on your corn, stir frequently at this step.
2. While corn is cooking add jalapeño, red onion, chili powder, mayonnaise, Greek yogurt, lime juice, cotija cheese, and cilantro to a bowl and mix well.
3. When corn is charred, remove from heat and directly add it to the bowl containing the ingredients from the step above.
4. Mix well and season with salt to taste.
5. Serve warm, room temperature, or cold!

Tom Kha Gai (Thai Coconut Chicken Soup)

By: Jeniece Regan

With spring arriving, I like trying new recipes with exciting flavors. And for those healthy eating goals, this soup is packed with protein. What I appreciate about this soup is that it's forgiving and easy to double so you have leftovers for the week. I've made it without lime leaves, mushrooms, and cilantro, and have forgotten a few steps here and there, but it always turns out delicious! For the recipe below, which is modified from The Woks of Life, I've added tips to make it vegan/vegetarian, and most of the ingredients can be found at San Yang Supermarket located inside Asia Mall

at 1030 S 13th St. Harrisburg, PA 17104.



Image Credits: [The Woks of Life](#)

Ingredients (makes 4 servings):

- 12-ounces boneless skinless chicken thighs or breasts, cut into thin strips. Vegan/vegetarian substitution: 12-14 ounces of extra firm tofu, cubed
- 2 teaspoons cornstarch
- 2 teaspoons plus 1 tablespoon neutral oil
- 2 teaspoons plus 2 tablespoons fish sauce. Vegan/vegetarian substitution: skip and add extra salt to taste at the end
- 8-ounces button mushrooms, thinly sliced
- 3 cups chicken stock. Vegan/vegetarian substitution: vegetable broth
- 1 stalk lemongrass, bottom half only, tough outer layers removed and scored in half lengthwise, or lemongrass paste
- 2-3 inches of galangal (preferred) or ginger root cut into 8 slices
- 3 fresh or dried makrut lime leaves (or zest of 1 lime)
- 1-2 Thai chilies, cut in half
- 1 tablespoon Thai red curry paste. Vegan/vegetarian note: look for a vegetarian version, as the original paste often has shrimp.
- 1 tablespoon palm sugar or light brown sugar
- 14-ounces canned coconut milk
- 3 tablespoons lime juice

- 1/4 cup cilantro or scallions, roughly chopped

Instructions:

1. Combine the sliced chicken or tofu chunks with cornstarch, and 2 teaspoons each of neutral oil and fish sauce. Set aside.
2. To a medium soup pot over medium-high heat, add the remaining 1 tablespoon of oil and the mushrooms. Fry the mushrooms for about 5 minutes, or until tender.
3. Add the chicken stock, lemongrass, galangal, lime leaves or zest, chilies, red curry paste, and sugar and bring to a boil. Cover, lower the heat, and simmer for 6 minutes.
4. Stir in the coconut milk and bring back up to a simmer over medium-high heat—watch the pot and don't let it come up to a rolling boil, or the coconut milk could split.
5. Add the chicken or tofu. Bring back up to a simmer, lower the heat to medium-low, cover, and cook for 8 minutes, until the chicken is cooked through.
6. Turn off the heat, and stir in the remaining fish sauce, lime juice, and fresh cilantro or scallions.
7. Remove the lemongrass, lime leaves, and galangal/ginger roots.
8. Season with salt to taste.
9. Ladle into bowls and serve on its own or with some steamed jasmine rice!



Reviews & Recommendations

Hikes to Put a Spring in Your Step

By: Julia Simpson

Stick season's in the rearview mirror – the time of wildflowers (and soon May-showers!) has arrived! When it comes to vibrancy, fall gets all the hype, but spring paints the landscape in a bright color palette all its own. From a budding underbrush of ferns and wild garlic to the pink petals preceding the leaves on the trees, spring color is in full flush! When not under the red lighting of the confocal microscope room, my feet find a hiking trail as often as they can. Want to explore what spring has to offer central Pennsylvania? Here are awesome hikes – of varying distances from Hershey, ranging from a quick morning jaunt to a weekend day-trip – that dress to impress for this wonderful season!

Clarence Schock Memorial Park / Governor Dick Tower



Merely a brisk 26-minute drive from Hershey, this gem of a local park features ~15 miles of trails through forested woodlands, many of which loop and intersect, making it perfect

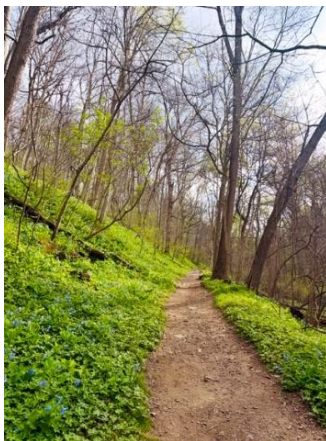
for a choose-your-own hiking adventure! For a short but rewarding outing, walk the ~0.75-mile (~1.5 miles total) out-and-back trail to Governor Dick Hill. At the top you'll find a historic tower, and if you brave the narrow series of vertical ladders, you'll be rewarded with a stunning 360-degree view of the surrounding landscape. If that works up an appetite, nearby Mt. Gretna has many charming spots to round out the day with a quick bite!

Joseph E. Ibberson Conservation Area



Though just 40 minutes from Hershey, this one flies under the radar even for avid hikers, but I'm highlighting it now because it deserves the shout-out. This tract of land is technically under the state park system, and covers a small mountainous area crisscrossed by trails, one of which is the Appalachian Trail. If you use one of the local trails to connect with the AT, you can reach the Table Rock Overlook from the opposite direction as it's typically approached – but that makes for an 8-mile round trip! Many shorter loops can be made – I recommend the Evergreen, Whitetail, and Victorial Trail Loop for an afternoon of peaceful forest exploration with a good mix of level ground and challenging elevation!

Shenks Ferry Wildflower Preserve



Willing to drive an hour for some beautiful flowers? I know I am, and one of the best spots to do it for is this wonderful preserve managed by the Lancaster Conservancy. It's a naturalist's dream – hillsides dotted with bluebells and phlox, lilies and violets and springbeauties adding flecks of color amongst an undertow of ferns and mayapples. Of course, the identities of flowers in bloom shifts throughout the season – but that just means there's always something new to discover, at least until summer fully sets in! Much of this flat, ~1.5-mile (3-mile round-trip) out-and-back hike follows a creek, making for a fairy-tale like forest scene. Stop in Lancaster on the way back to round out the adventure!

Greenwood Furnace State Park



If you're itching to get out of Hershey and you have a whole day wide open to do it, wake up early, drive 90

minutes northwest, and forget the meaning of things like “pipettes” and “p-values” as you explore the beautiful Greenwood Furnace State Park. For a day-trip destination, this place has it all – a lovely little lake with a swimming beach; picnic tables by the water; and – of course – hiking trails galore! If you're up for a challenge, you'll find it well worth the effort to tackle the Monsell, Lorence, Turkey, and Standing Stone Trail Loop, which starts and ends at the parking lot by the park office and carries you through the woods and up a nearby mountain to reach the Stone Valley Vista, offering grand, sweeping mountain views. Come down from that hiking-high through trails lined with mountain laurel and rhododendron, and while away the rest of the day by the lake. Enjoy!



Thank you for reading the Spring 2026 Edition of the Lion Ledger! If you have something you'd like to contribute to the next edition, email us at lionstalkscience@gmail.com
- The LTS Team: Julia, Paige, Jay, Natale, Sarah, Zoe & Jenny