Little Shop of Physics
Newsletter

SUMMER
2023

What is covered in snow and chock full of hands-on science experiments? The LSOP Spring Science Extravaganza! Despite the cold weather, we shared science with thousands of visitors and it was our biggest event of the year. LSOP was joined by twelve science partners, including five organizations outside CSU and seven from CSU.

Some of our partners traveled great distances to join us. The Oglala Lakota College Science Department, led by Misty Brave, and Generations Indigenous Ways, led by Helene Gaddie, brought their star dome from South Dakota to teach folks about Lakota star knowledge. Red Cloud High School students, led by Lauren Big Crow, traveled from Pine Ridge, SD to facilitate learning with the public. The Physics Bus crew, led by Liv Vincent and Erik Herman, drove from Ithaca, NY in their purple bus to share their bus load of experiments. A little closer to home, Wellington Middle High School students, led by their teacher Debbie Holman, brought 15 hands-on experiments that they created. From CSU, we were joined by Adaptive Robotics Lab, CSU CVMBS Sci on the Fly, CSU Psychology Department, CSU Chemistry Club, CSU Bug Zoo, BROADN - Explore the Aerobiome, CSU FORT Collins Atmospheric ScientisTs (FORTCAST). For a list of all of the SSE partners, please visit https://col.st/o6HF6.

LSOP piloted a Sensory Friendly Hour for the first hour of SSE; a time where all the hands-on experiments were gentle on the senses. We had a sensory friendly zone that was operating during the entire event and handed out ear plugs and ear muffs. Many parents expressed their appreciation because they felt their child had been thoughtfully included and accommodated in a large-scale event. Some of the science partners opted to be near the sensory friendly zone as well. In the future, we will continue to have a designated time and space for sensory friendly hands-on fun at our events. Many thanks to Cecilia Dauer, LSOP undergraduate intern, who created the sensory friendly zone and the Dauer family (Courtney, Craig, and Nolan) who volunteered all day.

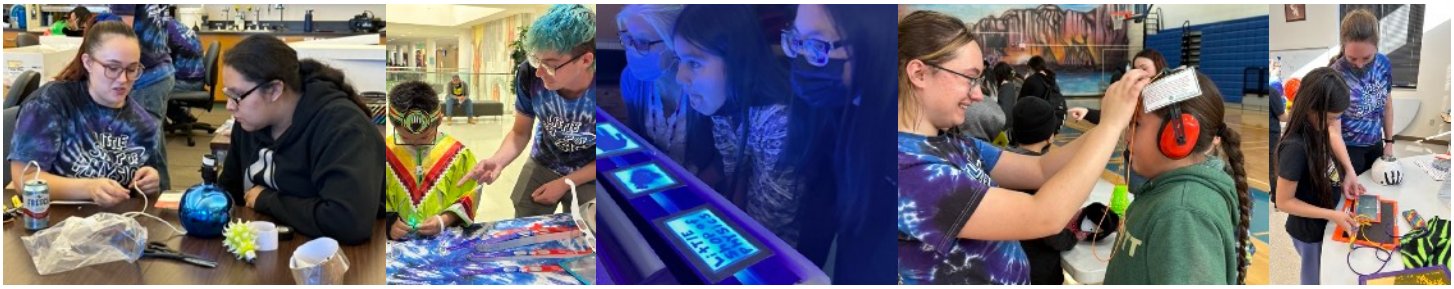
Once again, LSOP teamed up again with Amplify, a CSU undergraduate residential learning community. Amplify sponsored five undergraduates to intern with LSOP during the spring semester. This Amplify cohort built hands-on experiments and designed two zones of activities at SSE: the Amplify Zone (physics of biology experiments) and Bubblepalooza (physics of bubbles).

Many thanks to the Matthew McCausland Memorial Fund that supported this event. We also want to thank the community who came to see us. It is your support inspires us to go extravagant!

COLLEGE OF NATURAL SCIENCES
COLORADO STATE UNIVERSITY

LITTLE SHOP OF PHYSICS

Indigenous Connections



LSOP has a history of connecting with indigenous communities throughout the west and across the world. We work closely with the CSU Native American Cultural Center to build partnerships and conduct meaningful engagement with these groups.

In the fall, we participated in the AISES Pow Wow, which is the headline event for Native American Heritage Month at CSU. Members of the public and CSU community gathered at the Lory Student Center for traditional dance, art, music, and cuisine, and everyone—especially the children—could explore our hands-on science experiment stations.

This school year we were able to restart our visits to indigenous communities, which had been put on hold due to the Covid-19 pandemic. Over the past year, we visited schools and conducted teacher workshops on the Wind River, Pine Ridge, and Southern Ute Reservations.

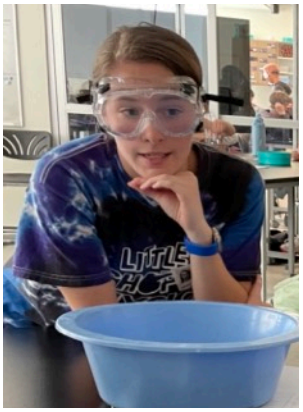
LSOP also hosted groups from the Oglala Lakota Nation at CSU. High school students from Red Cloud School traveled to CSU and built experiments for a future museum in Pine Ridge. Folks from Oglala Lakota College and Generations Indigenous Ways came to participate in our Spring Science Extravaganza. And we are planning a teacher workshop at Oglala Lakota College this summer!

LSOP is excited to renew and continue our relationships with indigenous communities. We met with Patrese Atine, the new Assistant Vice President for Indigenous and Native American Affairs about collaborating on future engagement projects.

Classroom Connections

Little Shop of Physics is well-known in the local community, and we always quickly fill each year visiting schools via requests from local teachers. However, in the effort to be more equitable to all kids in the region, we've partnered with Poudre School District to create a 3-year calendar! We will now visit every elementary school in PSD on a 3-year rotation! That's 33 elementary schools in all, covering a wide geographic range (serving the towns of Wellington, Timnath, Livermore, Red Feather Lakes, Laporte, and Fort Collins), and over 12,000 students!

On Being a LSOP Intern by Madi de Vries



Being an LSOP intern has been one of the coolest and most rewarding opportunities I have ever had. The first day I stepped into LSOP, I repeatedly was told "yikes" when shared my major: Natural Science with a Chemistry Education concentration. The majority of those I talked to specialized in physics, and I was worried I wouldn't be able to keep up. This was not the case and I have become very fond of physics from both my experience in Little Shop and after having both Brian and Adam as a physics instructors.

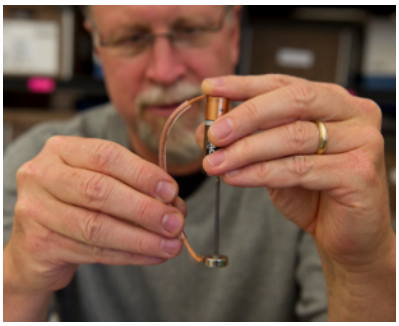
When I started, I was intrigued by the shelves of randomness and how everyone seemed to know where to find everything. Reagan, one of the senior interns, gave me the gist of what we would be working on. She explained the care we take with projects to make them kid-safe and interesting. After we finished that project I was given the challenge of fixing up a project on my own. They put the box on my desk, said what the project was supposed to do, and then sent me on my way. I was intimidated with how open-ended my task was, but that is what I have learned to love about building projects: we have the freedom to add our own touch to it and even make it completely new. Sometimes when I would be challenged with a project, I wouldn't completely understand the physics behind it but someone is always there and happy to answer my question or respond to my confused look. And after completing both Physics 1 and 2, I definitely understand the physics behind most of our experiments.

We have lots of fun in the shop, being safe of course. Whether it's throwing Bearington (our stuffed bear mascot) off the roof, making gallons of oobleck (which is really a workout might I add), or even getting hit in the face by a 3D-printed cat by Cherie trying to model the centripetal force. I am a very organized and Type A person, but the shop is the complete opposite. There is always something random and new to be a part of and that is the best aspect; you never know what you will be doing.

My favorite part about being an intern is when I get to interact with kids and guide their discovery. Most of the time they don't even read our fancy signs, but that is what I love because they figure it out or come up with their own ideas about the concept. My favorite memory is when a little girl was very quiet and shy when it came to interacting with our projects. She finally stopped at one of my favorite experiments: 'Magnetic Messages'. She read the sign and wrote something on the board, and then when she put the screen over it to see what she wrote, it read "My day is happy". She looked up and had the biggest smile, and then she ran over to a friend and brought them over to show them how it worked. I will never forget that experience. Not every kid will be interested in every single project, but the project that grabs their attention can open so many doors to exploring science. And it is a mutual feeling because my day is always happy when working with the Little Shop of Physics!

Teacher Kits

We have received a grant from GMAG to create a Magnetism Kit for every PSD elementary school! LSOP undergraduate interns with an interest in teaching will share these activities and materials with 3rd grade students during our scheduled school visit, and teachers will get to keep the kit to use with their students year after year!



We are also in the midst of creating a PhysicsQuest kit for APS! We are excited to be partnering with APS to get more materials and resources out to classroom teachers! If you are a classroom teacher, be sure to request your PhysicsQuest kit from APS at: https://www.aps.org/programs/outreach/physicsquest/

Science at CSU Spur



We are so excited to be working with CSU Spur to share science with the schools in the Globesville-Elyria-Swansea (GES) neighborhood in Denver! We both love to share science and this passion culminated in a grant we received from Spur to launch a new program where preK-12 students in the GES neighborhood schools build their own LSOP style hands-on experiments. We hope to kick off this program starting this Fall, and have already done a ton of prep work for it this summer!

We began our partnership with the October takeover in 2022, where we brought nearly 100 hands-on experiments to Spur to announce our new partnership. Since then, we have seen over a thousand kids at Spur between visiting school groups and Second Saturdays!

None of this would be possible without the relationship we are building with the Globesville-Elyria-Swansea (GES) community. We visited Swansea Elementary School and Garden Place Academy this Spring 2023 and are excited to visit Bruce Randolph in Fall 2023! This summer, we are building make-and-take kits so that students can build their very own Little Shop style hands-on experiments over the Fall semester! Please stay tuned to see the awesome creativity of these students showcased at Spur.

Bohemian Neighborhood Science Experiences




We received a grant from Bohemian Foundation to bring Neighborhood Science Experiences to low income communities in Fort Collins. These Neighborhood Science Experiences are essentially a mini-version of Spring Science Extravaganza, big scale science fun packed into a smaller area. During the academic year, we joined the City of Fort Collins Clean-up and Resource Fairs to visit three manufactured home communities: Hickory Village, Pleasant Grove, and Nueva Vida. This was a great way to engage the youth in the community, while their families learned more about resources in our city. This summer, we partnered with CARE Housing to bring Neighborhood Science Experiences to three different community block parties. Many adults from these communities had experienced the LSOP when they were in PreK-12 grades, and a some had attended our large scale events on campus with their children. All took home science activities rainbow glasses and UV bracelets to keep the science experience going!

Featured Faces of LSOP

Olivia Santiago received her MS in Forest Sciences from Colorado State University. She researched ecosystems in Colorado, Florida, and Costa Rica. She loves learning about physics through the hands-on experiments at LSOP and is passionate about making science communities welcome to all. We're excited to have Olivia heading up our work with CSU Spur as our new Stem Engagement Coordinator.

Cherie Bornhorst is not exactly a new face around Little Shop, but we're excited to have her in a new role! Cherie was an undergraduate intern beginning in 2005, after which she went off to Minnesota where she worked as a teacher for many years. Cherie worked with us professionally in 2010 before returning to the classroom as a full time teacher. We're excited to have her back as our new Teacher in Residence!

Patrick Lindsell has been our Director of Videography for many years. Hailing from Zimbabwe, he received his degree in Art and Technique Film Production from London Film School, and he has extensive experience as a freelance camera person on feature films, documentaries, commercials, and educational programs. Patrick always has at least one camera with him, whether he is working in the LSOP studio (Get Your Science On, LSOP Live, Flash Science, and Everyday Science) or out in the field (LSOP in Action, Show Me Some Science, and Now You Know). The videos that Patrick has produced for LSOP have received approximately half a million views on our website and social media.

About This Newsletter

This is our first newsletter and we would love your feedback! Did you enjoy learning about what we have been up to? Do you have questions? Email us at littleshopofphysics@gmail.com!

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