Summary

Spring 2023 saw 8,188 students and faculty use the Media Commons, Maker Commons, and Immersive Experiences Lab initiatives across the Commonwealth. Much of this use was focused in **221 classes** in nearly every discipline offered at Penn State. To facilitate these interactions outside of University Park, traveling consultants provided **41 in-person sessions** and **44 remote sessions** for instruction, consultations and support.

One Button Studio 2.0 helped students and faculty create **4,406 academic videos**, comprising over **144 hours of video**. In addition, students from across the Commonwealth created **5,323 3D prints** in pursuit of their course work and their own curiosity.

The Dreamery, operated by the Interactive Experiences team, facilitated **23 innovative learning experiences** during the Spring 2023 semester, engaging courses with technologies ranging from virtual reality, augmented reality, generative AI, playing What The Deck, and exploring simple robotics and sensors.

The report that follows breaks down our interactions with students and faculty and examines engagement levels with services offered, locations, and by individual colleges. Throughout the report we'll draw attention to exciting assignments, surprising class partnerships, and interesting observations from the semester - stories that tell the ways in which Penn State faculty and students are pushing the boundaries of education into the future. We also point out usage and technology trends that draw from the Creative Learning Initiatives group's proven history in supporting multimedia and emerging technology as well as reflect on challenges and opportunities in the coming semesters.
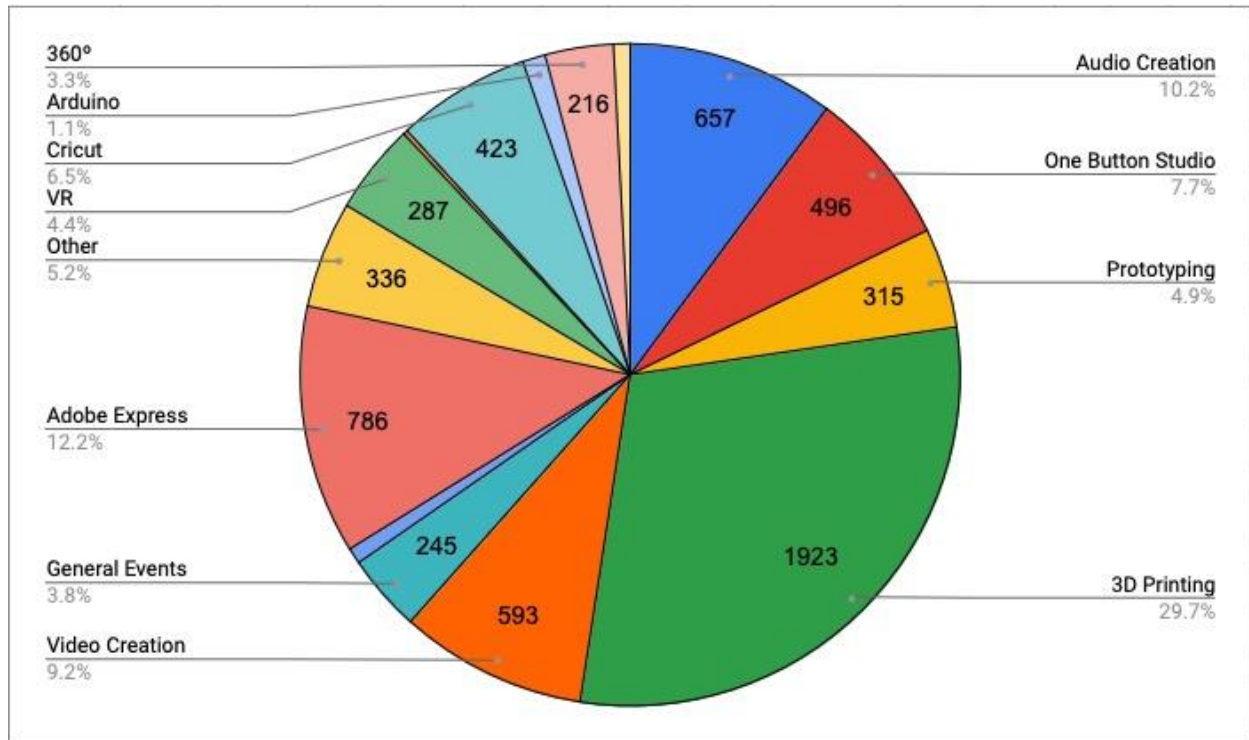
People Helped

Faculty and students used Media Commons, Immersive Experiences Lab and Maker Commons services in a variety of ways in all of our locations over the course of the semester. These charts count how many people were aided by our consultants in either 1-on-1 consultations or in-class workshops.

Media Commons @ University Park	# of People Helped
Pattee Library Knowledge Commons	1,358
Pollock Building Computer Lab	Closed due to staffing
PAMS Library, Davey Lab	125
Immersive Experiences Lab, Agricultural Sciences & Industries Building	142

Media Commons Workshops	1,696
Maker Commons Workshops and 3D Printing Users	2,271
Immersive Experiences (IMEX) Workshops	631
Media Commons Events	245
University Park Total	**6,468**

University Park Technology Breakdown

Technology Name	# of People Helped	Technology Name	# of People Helped
Audio Creation	657	Adobe Express	786
One Button Studio 2.0	496	Virtual Reality	287
Prototyping	315	3D Scanning	14
3D Printing	1,923	Cricut	423

Video Creation	593	Arduino	73
Adobe InDesign+XD	51	General Events	245
360º video	216	Other	336
Adobe Portfolio	53	**TOTAL**	**6,468**

Featured Stories

- Students of **ME 370** had a unique opportunity to use a VR application that was built at Penn State. In the application, students are asked to build a mass spring system and then apply what they have learned in class to solve for a variety of parameters such as natural frequency, frequency in radians per second, and damping ratio. This is the first time we've used an application created specifically for Penn State students at this kind of scale. From April 5-28, 83 students came in to use the application in the IMEX Lab. This was also unique from a support standpoint because it was only possible due to the extra computing power the VR PCs in the IMEX Lab afford.

Campus Engagement

Campuses often don't have their own local Media Commons support and so rely on our consultants to visit campus to work with faculty and provide workshops for students. We host several tailored faculty events each semester to discuss opportunities and visit campuses as often as possible to support class partnerships.

Western Campuses

Campus	# of Penn Staters Helped	# of Classes	Events	In-Person Visits*	Remote Sessions†
Altoona	103	5	-	1	4
Beaver	133	6	1	4	7
Behrend	105	3	1	2	14
DuBois	66	-	3	2	-
Fayette	30	1	-	-	-
Greater Allegheny	45	5	1	4	1
Harrisburg	183	4	-	-	

Mont Alto	28	3	1	2	2
New Kensington	116	3	1	4	2
Pittsburgh Center	-	-	-	-	-
Shenango	-	-	-	1	-
Totals	**809**	**30**	**8**	**20**	**30**

* In-Person Visits include travel to campus for teaching workshops, faculty consultations, meeting with students, hosting events, equipment and computer service and/or One Button Studio tune-ups.
† Remote Sessions denote online teaching workshops, faculty consultations, meeting with students, critiques of project materials uploaded to Canvas, OneDrive, etc

Featured Stories

- Penn State DuBois was the first focus of a broader TLT-wide Commonwealth Campus Outreach initiative meant to reinvigorate relationships between the unit and campus leadership. Following a pair of remote and in-person conversations about challenges and opportunities, **three tailored programming opportunities** were delivered to faculty and staff. Programs kicked off with an all-campus meeting update on available resources, a "mini Symposium" session on the importance of storytelling and a culminating workshop on creating storytelling projects featuring Dr Lauren Jacobson McConnell from Altoona. These events **reached a combined audience of 66** from across disciplines and administrative areas.
- Students in Kate McLean's **CRIMJ 412** used Immersive Headset Pilot devices to explore three stories of mental illness, solitary confinement and reintegration into society. **11 students** completed reflections on how course topics were embodied within these video experiences.

Eastern Campuses

Campus	# of Penn Staters Helped	# of Classes	Events	In-Person Visits*	Remote Sessions[†]
Abington	6	2	-	1	1
Berks	556	5	-	1	3
Brandywine	258	13	-	8	5
Great Valley	1	-	-	1	-
Hazleton	13	1	-	-	1
Lehigh Valley	1	-	-	-	-
Schuylkill	10	1	1	-	1
Scranton	34	1	-	-	1
Wilkes-Barre	1	-	-	-	-
York	42	2	1	-	2
Totals	**911**	**25**	**2**	**11**	**14**

* In-Person Visits include travel to campus for teaching workshops, faculty consultations, meeting with students, hosting events, equipment and computer service and/or One Button Studio tune-ups.
[†] Remote Sessions denote online teaching workshops, faculty consultations, meeting with students, critiques of project materials uploaded to Canvas, OneDrive, etc

Featured Stories

- Bill Cantor from Penn State York had his **Management Information Systems 404** class participate in the Immersive Headset Pilot program. Students from **York**, **Abington**, and **Harrisburg** were provided with Meta Quest 2 headsets and used Horizon Workrooms to meet online for class. The students were able to work as a class and in breakout groups. They were able to listen to lectures and conduct marketing and sales simulations.
- As part of Dr. Laura Guertin's **EARTH 104N** course at **Penn State Brandywine**, students took part in a one-day field trip to Atlantic City. They explored the coastal shoreline structures preventing shoreline erosion as well as learn about the cultural history of the coast. Students participated in Media Commons Immersive Tours Pilot and used 360º cameras to collect photos of the shoreline. The students brought the photos into ThingLink to add more interaction and historical information to the 360º photos.

Class Partnerships Across Colleges

Media Commons consultants partner with faculty from every college at Penn State to help design multimedia and making assignments, provide workshops for students, and 1-on-1 consultations as the students complete their work. This table represents how many classes were worked with in which colleges during the semester.

Partnered Service Key: Media Commons = MeC, Maker Commons = MaC, Immersive Experiences Lab = IMEX

Colleges	University Park				Western Campuses				Eastern Campuses				Grand Totals
	MeC	MaC	IMEX	Total	MeC	MaC	IMEX	Total	MeC	MaC	IMEX	Total	
Agricultural Sciences	1	-	4	5	-	-	-	-	-	-	-	-	5
Arts & Architecture	-	5	2	7	-	-	3	3	3	-	-	3	13
Business	2	2	2	6	1	-	-	1	-	-	-	-	7
Communications	1	-	-	1	1	1	-	2	6	-	-	6	9
Earth & Mineral Sciences	2	2	1	5	-	-	-	-	-	-	-	-	5
Education	-	7	4	11	-	-	-	-	1	-	-	1	12
Engineering	1	33	1	35	1	-	1	2	2	-	-	2	39
Graduate	-	-	-	-	-	-	-	-	-	-	-	-	-
Health & Human Development	2	-	-	2	6	-	-	6	3	-	1	4	12
Information Sciences & Technology	-	3	-	3	2	-	5	7	-	-	1	1	11
Liberal Arts	59	18	12	89	6	-	1	7	5	-	-	5	101
Medicine	-	-	-	-	-	-	-	-	-	-	-	-	-
Nursing	-	-	-	-	1	-	1	2	-	-	-	-	2
Sciences	2	-	-	2	-	-	1	1	-	-	1	1	4
LaunchBox	-	-	-	-	1	-	-	1	-	-	-	-	1
Totals	**70**	**70**	**26**	**166**	**19**	**1**	**12**	**32**	**20**	**-**	**3**	**23**	**221**

Featured Stories

- **Faculty from four campuses** (Penn State Beaver, Behrend, Mont Alto and Shenango) participated in a small pilot **offering of Human Anatomy VR** from Virtual Medicine. These instructors integrated dynamic models into Psychology, Physical Therapy and Anatomy & Physiology courses, **impacting 165 students** with novel learning opportunities in multiple facilitated lab sections.
- Jennifer Singletary's **CAMS 70 Prophecy in the Bible and the Ancient Near East** students created a "museum exhibit" as their final project for the course, with each student producing a 3D printed replica of an existing artifact related to prophecy or creating an original artifact, as well as writing interpretive signage.
- New instructor in the Information Technology program, Liz Denlea hit the ground running by taking part in the Immersive Tours Pilot with her **IST 331** students. Students practiced working with various "clients" from campus leadership to University archives to

collaborate as a class on an [informative, interactive campus tour](#). They presented their work and findings at the campus Research Fair, **taking home the Informational Exhibits first prize**.

- Mariah Kupfner's **AMST/ARTH 307N** used ThingLink through the Immersive Tours Pilot for students' final projects. "[Students] were asked to choose a central image that they found compelling, but that we did not discuss in class. They then had to place it in 'conversation' with 6 images (at least 4 of which we did discuss in class). Several students [used](#) [materials](#) from the Penn State Harrisburg Archives & Special Collections (especially their fabulous array of pro- and anti- woman suffrage materials)."

Interactive Experiences

Dreamery Experiences

The Interactive Experiences team facilitated 23 experiences across 10 courses and events. The team currently offers five main experiences: virtual reality, augmented reality, robotics with LEGO Spike, Generative AI, and a cooperative, discussion-based card game that focuses on empathy, diversity, and technology.

Experience Key: Virtual Reality = VR, Augmented Reality = AR, Lego Robotics = Robo, WTD = What The Deck

Colleges	Dreamery Experiences					
	VR	AR	WTD	Rob	AI	Total
Agricultural Sciences	-	-	-	-	-	-
Arts & Architecture	-	-	-	-	-	-
Business	-	-	-	-	-	-
Communications	7	7	-	-	-	**14**
Earth & Mineral Sciences	-	-	-	-	-	-
Education	-	-	-	-	-	-
Engineering	-	-	-	-	-	-
Health & Human Development	-	-	-	-	-	-
Information Sciences & Technology	-	-	-	-	-	-
Liberal Arts	1	1	-	1	-	**3**
Medicine	-	-	-	-	-	-
Nursing	-	-	-	-	-	-
Sciences	-	-	-	-	-	-
Events	2	1	-	1	2	**6**
Totals	**10**	**9**	**-**	**2**	**2**	**23**

Featured Stories

- Interactive Experiences hosted two sections of international students from the **Intensive English Communications Program (IECP)**, which offers courses in academic English to prepare learners for the expectations of studies at an American university. The Dreamery exposed these students to emerging technologies such as Virtual Reality (VR), Augmented Reality (AR), and simple robotics. Through hands-on, interactive activities students explored the potential

impact of these technologies on future classroom experiences and potential professions.

- The Interactive Experiences team at the Dreamery launched the **ARTificial Intelligence wall display** in Spring 2023. This new feature curates AI-generated text-to-image photos crafted by faculty, staff and student visitors to the space. The wall display is serving as the focus of **Wonders of A.I.** programming in development that will introduce students to artificial intelligence in the real world.

One Button Studio: On Campus + At Home

Media Commons supports the One Button Studio project across campuses and students in remote locations. The One Button Studio allows students and faculty to simply create quality academic videos, often for recording presentations, lectures, and demonstrations, or completing class assignments - both in-person and via best practices to apply at home via Zoom.

In-Person

Location	# of Videos Created	Total Duration of Videos H:M:S
Pattee Library Knowledge Commons (2 studios)	1,449	65:47:00
Pollock Building Computer Lab (2 studios)	Closed	Due to Staffing
PAMS Library, Davey Lab	860	42:01:21
University Park Total	**2,309**	**107:48:21**
Abington	118	3:50:00
Altoona	232	4:08:00
Beaver	346	3:17:00
Behrend	88	1:17:00
Berks	19	0:11:00
Brandywine	177	3:13:00
DuBois	86	0:42:00
Fayette	100	3:54:00
Great Valley	4	0:02:00
Greater Allegheny	7	0:03:00
Harrisburg	122	0:48:00
Hazleton	9	0:14:00
Lehigh Valley	49	0:25:00
Mont Alto	11	0:02:00
New Kensington	405	6:47:00

Penn State Center	0	0:00:00
Schuylkill	9	0:02:00
Scranton	159	3:15:00
Shenango	10	0:03:00
York	146	2:02:00
Commonwealth Total	**2,097**	**34:15:00**
Total One Button Studio Use	**4,406**	**144:03:21**

OBS Online Resources

Page	# Unique Visits	Avg Time on Site
Using Your One Button Studio (faculty)	565	00:01:18
One Button Studio at Home	266	00:03:26
One Button Studio Best Practices	255	00:01:16
Kaltura Based Assignments	93	00:02:29

One Button Studio 2.0 Updates

Two updates for OBS 2.0 were released to studios in January and March 2023. These updates featured the following changes:

Version 0.10.10 (March 2023)

Bug Fixes

• 3rd party libraries were updated.
• Fix to compile time checking for Kaltura library.
• Support for latest versions of macOS and iOS.

Version 0.10.9 (January 2023)

Bug Fixes

• Kaltura errors are now identified and handled.

Features

• Error handling framework has been implemented with guidance strings, dismissal states, and device synchronization.

Featured Stories

- Marc McCann's HDFS 490 "**Introduction to Internship Experience**" course had 20 students recording elevator pitches in the One Button Studios. These 18 recordings were used to introduce students to each other but also to help prepare students for their internships and careers in human services.

Maker Technologies

The Maker Commons offers students at University Park, the Commonwealth Campuses, and World Campus access to 30 3D printers through an online submission process. The printers are located at University Park but, through a partnership with University Libraries, are able to ship prints to any student for easy pick-up.

Registered 3D Printing Projects	43
Registered 3D Printing Project Students	1,489
Hours of Print Time *Registered and Personal 3D Printing*	16,814.3 Hours (701 days)
Successful Prints	5,323
Filament Used	177.54kg (38.6miles)

Featured Stories

- Maggie Condit-Summerson's WMNST 106 asked students to create a **"Stitch & Glitch" quilt** that presented a picture of the life experiences of the entire class in textile. These 40 students, divided into 6 maker groups, designed individual quilt squares in Photoshop in advance of dye sublimation printing workshops at the Maker Commons.

Websites and Social Media

Overall, CLI site traffic is down across the board, potentially reflecting more reliance on in-person assistance and just-in-time hotline-based support (phone, chat, email). This could also point to an overall higher level of confidence for students - or a drop in search engine traffic from outside the University. A continued trend towards support for physical resources is present, as evidenced by the popularity of tutorials centered on 360º cameras and 3D printed objects. The nearly equal (year over year) viewership of PSA content on the Media Commons site also points to a return to traditional, complex video assignments in many classes that had shifted to lighter, online-friendly tools like Adobe Express. Illustrator tutorials being at the top of the heap also point in this direction.

- The number of unique visitors was **97,490 across all three services**:
    - 79,111 via Media Commons (-32%)
    - 7,977 via IMEX Lab (-31%)
    - 10,511 via Maker Commons (-3%)
- The pageviews for Media Commons reached 121,298 encompassing popular content including:
    - **Public Service Announcement** (-10%)
    - **Using the Line Tool and Applying Stroke in Illustrator** (+4290%)
    - **Changing the Opacity of Objects in Illustrator** (-32%)
- IMEX Lab pageviews reached 16,274, representing popular content including:
    - **National Civil Rights Museum Tour** (+1%)
    - **How Do I Factory Reset Quest 2** (-87%)
    - **Using GoPro MAX Manually** (+191%)
- Maker Commons pageviews reached 73,197, representing views of the following content:
    - **3D Printing** (-8%)
    - **3D Printing Information** (-9%)
    - **Picking Up Your Print** (-6%)

A renewed effort to engage with our various audiences through social media channels continued in the Spring semester. In addition to our solid core audiences on Facebook and Instagram, the team added a LinkedIn presence, recognizing that this may connect us to a more faculty/staff focused group. Notable trends from Spring semester include:

- **Engagement for Facebook is up 36%** in 90 days
- **Instagram followers are up 56%** since January
- **1,200 video views on LinkedIn** in the month following page creation

Challenges, Opportunities & Notable Trends

Looking at some of our key performance indicators when compared to 1, 2, 5 and 10 years ago will help us identify areas of growth and change. There is an ebb and flow to each semester, but by analyzing in this way we will be better able to identify trends worthy of further investment or of reassigning resources.

KPI	1 Year Ago	2 Years Ago	5 Years Ago	10 Years Ago
Overall People Helped	+10%	+147%	-20%	+32%
University Park Partnered Courses	+4%	+141%	-21%	+269%
Commonwealth Campuses Partnered Courses	+8%	+8%	+8%	+38%
One Button Studio videos	+57%	+1,047%	-66%	+108%
Successful 3D Prints	-8%	+162%	+97%	N/A