Summary

Due to the ongoing **COVID-19 pandemic**, Penn State provided enhanced flexibility to faculty and students to choose how they wanted to teach and learn during the Spring 2021 semester. While some classes were held in-person, others were entirely online, and many more were hybrid in numerous ways. Due to these changes, the Media Commons, Maker Commons, and Immersive Experiences Lab services had to continue to adapt processes to adjust to the new circumstances. We continued to implement the modified remote and hybrid-adapted resources and instructional methods developed during summer 2020 and Fall 2020 across all services.

As a result, several physically-bound services and technology like the One Button Studios, 3D printing lab, Invention Studio, and the Immersive Experiences Lab's immersive "pinwheel" theater saw significant adjustments. Media Commons facilities, including One Button Studios, remained closed at the majority of Commonwealth campuses. University Park implemented a new plan that centralized the majority of resources at the Pattee Library location, even relocating VR, 360° video, and 3D scanning resources from the IMEX Lab to Pattee. This approach simplified our staffing needs and we adopted a new work schedule that ensured each consultant worked on campus only once per week on a staggered schedule. While open for appointments, new restrictions and guidelines developed in collaboration with the University's Environmental Health and Safety group kept the editing rooms and One Button Studios safe for use. This also allowed us to operate the Maker Commons' 3D printing service, which focused only on printing for approved course assignments and paused personal and exploratory printing for the semester. The partnership with University Libraries allowed us to ship completed 3D prints to students' homes for those that elected to learn remotely.

Despite the challenges and changes to our service model, the Spring 2021 semester was productive and successful in a number of ways, as outlined in the report below.

Spring 2021 saw 3,315 students and faculty use the Media Commons, Maker Commons, and Immersive Experiences Lab initiatives across the Commonwealth. Much of this use was focused in **120 classes** in nearly every discipline offered at Penn State. To facilitate these interactions outside of University Park, traveling consultants **offered 124 remote sessions** to provide instruction, consultations and support.

While the majority of One Button Studios across the Commonwealth were closed, the two studios located in Pattee Library still helped students and faculty create **384 academic videos**, comprising over **7 hours of video**. Students across the Commonwealth created **2,035 3D prints** in pursuit of their course work.

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 Media Commons' 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 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	119
Pollock Building Computer Lab	Closed due to COVID
PAMS Library, Davey Lab	Closed due to COVID
Immersive Experiences Lab, Agricultural Sciences & Industries Building	Closed due to COVID
Media Commons Workshops	682
Maker Commons Workshops and 3D Printing Users	1,166
Immersive Experiences (IMEX) Workshops	15
Media Commons Events	311
University Park Total	**2,293**

University Park Technology Breakdown
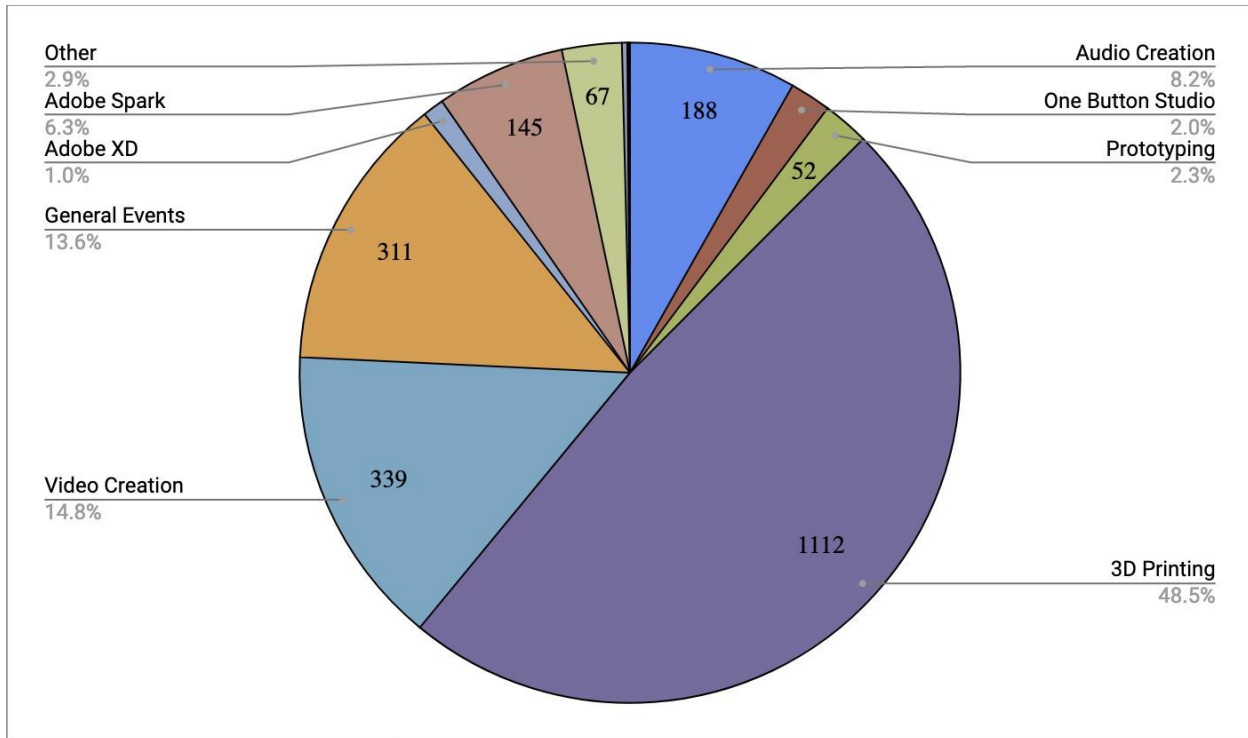
Audio Creation	OBS	Prototyping	3D Printing	Video Creation	General Events	XD	Spark	Other	VR	3D Scanning	Cricut
188	46	52	1,112	339	311	24	145	67	6	1	2

Featured Stories

- Adobe Rush workshops became a popular choice over iMovie for video editing this past year because Penn State students could access the software for free and also for its collaboration features. One example assignment from the College of Health and Human Development is **Bing Pan's Recreation, Park, & Tourism Management (RPTM 410) at University Park** requirement to interview a local State College resident to tell a "Happy Valley" story and work collaboratively to create a video with attention-grabbing "viral" potential, including interesting, funny, relevant, emotional, or surprising elements. Judges from the Happy Valley Adventure Bureau selected a [winning video](#) out of the eight entries based on quality and viral potential and shared it on their social media outlets. A second video assignment example comes from **Derek Lewis'** assignment for his **CAS 415** class at **University Park** in which students were tasked to work collaboratively on a [short, rough horror production](#) and to incorporate the essential material taught in class: script, video, and key.
- Working with **Randall McEntaffer, TLT faculty fellow from the Eberly College of Science at University Park**, Media Commons hosted a VR research station for participants to view the VR experience Titans of Space with the goal to "overcome the

physical limitations of engaging with astronomy course materials" and to enhance learning in the Astro 001 course.
- Adobe Spark was a great fit for our **English 15 at University Park** Infographics workshops. These three excellent student submission examples, [1], [2], [3], fulfill **Sierra Miller's and Nanami Kobayashi's** requests to present a simple, focused message about a compelling issue in a visual format that included an original data visualization to express complex ideas concisely and accurately. Adobe Spark Pages and Video played an integral role in **Brandi Robinson's EME 466 at University Park** capstone projects. The semester-long digital story assignment was to collaborate with a business and research ways to help them become more sustainable. Example submission topics included foodprints, solar energy, and cleaner energy.

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	105	4	-	-	22
Beaver	156	7	-	-	27
Behrend	101	1	-	-	28
DuBois	-	-	-	-	-
Fayette	-	-	-	-	-
Greater Allegheny	12	3	1	-	3
Harrisburg	-	-	-	-	-
Mont Alto	-	-	-	-	-
New Kensington	28	4	1	-	6
Pittsburgh Center	31	1	-	-	13

Shenango	-	-	-	-	-
Totals	**433**	**19**	**2**	**-**	**99**

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

Featured Stories

- In its second remote semester, **Penn State Center Pittsburgh's City Semester** program asked a record 10 students to create masterful short films demonstrating their experiential understanding of sustainability as applied by each of their community partners. Working with Media Commons and a scaffolded approach, students were onboarded to video production at home and supported with a series of storytelling consultations in both group and individual settings.
- Students in **Kelly Munly's HDFS 249N** course at **Altoona** leveraged video tutorials to share enrichment activities and exercises with seniors living in care homes that they would ordinarily have visited in person. 23 students worked individually or in small groups to create 13 video-based lessons.

Eastern Campuses

Campus	# of Penn Staters Helped	# of Classes	Events	In-Person Visits*	Remote Sessions†
Abington	160	4	-	-	7
Berks	175	5	-	-	5
Brandywine	181	9	-	-	9
Great Valley	16	1	-	-	1
Hazleton	-	-	1	-	1
Lehigh Valley	1	-	-	-	-
Schuylkill	-	-	-	-	-
Scranton	40	1	-	-	1
Wilkes-Barre	-	-	-	-	-
York	16	2	-	-	1
Totals	**589**	**22**	**1**	**-**	**25**

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

Featured Stories

- At the **Abington** campus, **Dr. Rachael Brown** challenged her students in **MATH 36** to create video projects to illustrate real life statistics. As the 25 students in the class were working in groups, Adobe Spark Video was chosen because of its collaborative platform. The students researched topics ranging from COVID-19 to Solar Energy and translated that data into a visual story of the numbers. Multiple sessions were offered to support this class including training via Zoom, and project critiques towards the end of the semester.

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	-	1	2	-	-	-	-	-	-	-	-	2
Arts & Architecture	1	3	1	5	1	3	1	5	-	-	-	-	10
Business	1	-	-	1	-	-	-	-	5	-	-	5	6
Communications	3	1	-	4	2	-	-	2	2	-	-	2	8
Earth & Mineral Sciences	7	-	-	7	-	-	-	-	2	-	-	2	9
Education	-	2	-	2	-	-	-	-	1	-	-	1	3
Engineering	2	24	-	26	1	1	-	2	3	-	-	3	31
Health & Human Development	2	-	-	2	4	-	-	4	2	-	-	2	8
Information Sciences & Technology	-	2	-	2	2	2	-	4	-	-	1	1	7
Liberal Arts	14	2	-	16	7	-	-	7	4	-	-	4	27
Medicine	-	-	-	-	-	-	-	-	-	-	-	-	-
Nursing	-	-	-	-	1	-	-	1	-	-	-	-	1
Sciences	-	1	-	1	1	-	1	2	2	-	-	2	5
Schreyer's Honors	-	1	-	1	-	-	-	-	-	-	-	-	1
University Libraries	-	-	-	-	2	-	-	2	-	-	-	-	2
Totals	31	36	2	69	21	6	2	29	21	-	1	22	120

Featured Stories

- **New Kensington** was joined by **Greater Allegheny** for a second year of partnerships with University Libraries and campus Student Research conference committees to leverage Adobe Spark - and tailored Media Commons training and support - to over 70 student researchers, making the presentations accessible to a wider audience.

Interactive Experiences

Live YouTube Showcases

With many physical spaces closed due to COVID, the Interactive Experiences group decided to go virtual. The team hosted two livestream showcases, the Virtual Space Showcase and the Augmented Reality Showcase. These showcases are a culmination of thorough exploration and testing of different virtual spaces and augmented reality applications that are particular useful for teaching and learning. Cumulatively, these videos have **over 290 impressions** and **over 140 unique viewers**. They are still accessible via the Creative Learning Initiatives YouTube page and featured on the VR Experiences and AR Experiences catalogue pages of the IMEX Lab website.

What The Deck?

What the Deck (WTD) is an exploratory, card-based game designed to get players thinking critically about technology, how it intersects with society, and how these interactions affect our individual lives. From an empathetic starting point, WTD creates scenarios where players talk about different cultures and societies through the lens of technology. Currently, the card game is only accessible via the website; the experience is 100% virtual and is designed to be a facilitated experience. During the Spring semester, WTD was **facilitated for 5 educational events** for audiences both inside and outside the University, **engaging over 120 players in conversation**.

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-persona 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)	384	7:49:07
Pollock Building Computer Lab (2 studios)	closed	COVID
PAMS Library, Davey Lab	closed	COVID
University Park Total	**384**	**7:49:07**
Commonwealth Total	**inaccessible**	**due to campus closures**
Total One Button Studio Use	**384**	**7:49:07**

Online

# of Unique Visits	Avg Visit Duration	Top Referral Page
512	3 min 26 sec	/faculty/using-your-one-button-studio

3D Printing

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 Project Students	786
Hours of Print Time	7,937
Successful Prints	2,035

Filament Used	96.47kg (20.9 miles)

Featured Stories

- Ten sections of **EDSGN 100 at University Park** took advantage of Maker Common's 3D printing, 3D modeling, and Arduino programming workshops and services this semester. Specifically, **Smita Bharti**'s wind turbine 3D printing assignment and Arduino traffic light project gave students an opportunity not only to exercise their creative and technical design skills but also to expose them to critical thinking and problem solving.
- Students in **Nick Meisel's EDSGN 562** graduate level class at **University Park** researched, designed, and printed mechanical torture test specimens to evaluate the manufacturing limitations of 3D printing technology. Student submissions included examples of restrictive and opportunistic testing.
- A team of Nuclear Engineering students designed and 3D printed a sampling capsule for gamma irradiation prototype for the Idaho National Laboratory. The prototype presentation fulfilled an assignment for a **NECE 431W class at University Park taught by William Walters.**

Website as Central Support Tool

The Media Commons online resources have continued on in their role as the central focus of all training and support across instructional modes. Comparing traffic year over year, visitorship is down just under 19%. As with the Fall semester, iMovie-related content was very popular, with the Exporting tutorial alone receiving 12% of sitewide pageviews. More concepts-focused content like instructions for Creating PSAs saw a marked climb, ranking as 5% of all Media Commons site traffic. IMEX Lab picked up a very large amount of new traffic, largely due to specifically linked 360º content from the Experience Catalogue. The Maker Commons site rebounded after Fall 2020, likely pointing to more instructors being confident in reliable remote support for 3D printing, given popular content topics.

- The number of unique visitors reached **229,601 across all three services**:
    - 220,706 via Media Commons (-18%)
    - 3,300 via IMEX Lab (+80%)
    - 5,595 via Maker Commons (+18%)
- The pageviews for Media Commons reached 293,157 encompassing popular content including:
    - **Exporting Your iMovie Project** (-46%)
    - **Using Green Screen in iMovie** (-63%)
    - **Public Service Announcement** (+22%)
    - **Free Media Library** (+6%)
- IMEX Lab pageviews reached 11,300, representing popular content including:
    - **National Civil Rights Museum Virtual Tour** (+1330%)
    - **360º Tour of Advanced Manufacturing Plant** (+55%)

- ○ Individual Landing Pages for **360/180º, AR and VR Experiences** (+100%)
- Maker Commons pageviews reached 42,856 representing diminished views of the following content:
  - ○ **3D Printing** (+33%)
  - ○ **3D Printing Information** (+19%)
  - ○ **Free 3D Models** (+84%)

Challenges, Opportunities & Notable Trends

The unique challenges of the Spring 2021 semester continued to provide opportunities for the Creative Learning Initiatives team to explore new content, workshop ideas, and modes of delivery. Additionally, an effort was begun in Spring to assess the instructional quality of these new workshops along with our older workshops to ensure that modern assignments and approaches are reflected in every aspect of the engagement design, as well as considering challenges of scale as we look to implement at campuses beyond University Park.

Media Commons' staff video production skills were showcased through a national legume study in collaboration with Amy Ciccarella from the College of Human Health and Development. The study, directed by Dr. Terry Hartman and entitled, *Fiber-rich Foods to Treat Obesity and Prevent Colon Cancer* will examine if diet composition (e.g., a high-fiber diet rich in legumes or dried beans) affects human weight and the risk of developing colon cancer. Over the course of four days, Media Commons **staff directed and produced six total videos**, each 5-12 minutes in length, that highlighted the ingredients and preparation of foods with differing fiber content. This multi-cam production required numerous camera angles, audio recordings, and advanced technical editing skills during the weeks-long post production.