Day One | July 10, 2019

8:00-9:00 Pre-Conference Registration and Breakfast [Pre-Conference Attendees Only]

9:00-12:00 Robotics Come to Life: Using Arduino to Program Sensor Driven Robotics
Alvaro Alvarez, University of La Verne
Tiffany Casillas, University of La Verne
Brendon Wheeler, University of La Verne
Raymond Gonzalez, University of La Verne
Duc Nguyen, University of La Verne
3 hour Pre-Conference Workshop

Learn to code and use Arduino to make fun loving robots. Attendees will first assemble the robots and learn how to use an Arduino board by learning how to code ultra sonic sensors, IR sensors, motors, and servos. Basic coding will be provided. Attendees will learn to understand the basic C++ coding, revise it, working with different sensors. If time permits, basic 3D printing concept will be covered so that attendees can learn basic 3D printing design and software to customize the robots.

With the knowledge learned attendees can integrate basic robotics into their Makerspace, classrooms or school programs by starting coding/robotic clubs, doing after school programs, and summer camps. During the workshop attendees will code different sensors and motors to finally bring it all together to make a robot of their own.

Finding the Ideal CNC Tools for Your Academic Makerspace
Brian Palmer, Washington College
Andrea Hearn, Washington College
3 hour Pre-Conference Workshop

There’s no doubt that CNC (Computer Numerical Control) has revolutionized rapid prototyping and fabrication. Makerspaces often include more than one CNC tool enabling their students to create with precision and repeatability. But with additive and subtractive technologies, working in 2D, 2.5D and 3D space, and priced from inexpensive to an arm and a leg, how do you choose what is best for your academic makerspace?

In this workshop you’ll compare and contrast the world of options, and then get hands-on experience using the Shaper Origin handheld CNC router, a new game-changing tool that has recently come to the market. Each participant will get to make a CNC carved wood project that they can take home with them.
Day One | July 10, 2019

9:00-12:00  Location: EDR  
How to Start and Sustain an Awesome Makerspace  
Brianna Marshall, University of California, Riverside  
Michele Potter, University of California, Riverside  
3 hour Pre-Conference Workshop  

Starting a makerspace can be extremely intimidating! Whether you are still considering, actively planning for, or implementing a makerspace, this preconference will help guide librarians and others who are new to makerspaces in exploring key topics that you’ll need to tackle, including:

- Space: Evaluating your space (including options if you don’t have any!)  
- Staffing: Deciding on a staffing model and what hours you will be open  
- Equipment: Considering which maker tools and technologies to purchase  
- Policies: Drafting guidelines for makerspace safety and creating an inclusive space  
- Programming: Developing a robust program of workshops and planning special events  
- Partnerships: Collaborating with instructors and researchers  
- Outreach: Getting the word out about the cool stuff you’re doing  
- Assessment: Tracking statistics to show the impact of your makerspace

The instructors will use lessons learned from starting a makerspace at their academic library to kick start interactive exercises and invite open discussion around the topics listed above. Participants will be provided with a reflective workbook that they can fill out as they consider each topic in the context of their home institution. As the preconference wraps up, participants will reflect on what they have learned and document their top makerspace priorities, noting the next steps they plan to take upon returning to their home institution.

1:00-2:00  Location: ACC Lobby  
Main Conference Registration

2:00-2:50  Location: ACC 205  
The Role of Making at a Health Science Institution  
Dylan Romero, University of California, San Francisco  
45 min. Presentation  

Are you interested in learning how making is being integrated in health science education? How can 3D printing, Arduinos, and even knitting help teach tomorrow’s doctors and pharmacists? This presentation will showcase three maker projects from the University of California, San Francisco Library’s Makers Lab. See how a pharmacy faculty member is using 3D printing to teach students about the absorption rate of a pill as it travels through the GI tract, how knitting is being used to teach medical students empathy, and how pharmacy students are using programmable electronics to innovate pharmacy services.

Attendees are encouraged to participate in conversation about how to engage your campus community, how to discover maker projects relevant to health science education, how to address the ongoing challenge of sustainability with your makerspace, and more.
The Makerbox Collective: A Collaborative Makerspace Resource  
Karilyn Steward, Calabasas Public Library  
Phillip Yocham, Ventura County Library, E.P. Foster Library  
Kareena Kiefer, Thousand Oaks Public Library  
45 min. Presentation

Our goal is to provide communities and partnerships of all types with hands-on learning opportunities. Eight libraries in Southern California received a grant from the California State Library to create MakerBoxes and work together to be active in the Makerspace movement. We will share how we were able to provide Maker services while sharing resources and costs. We will give advice on how to collaborate and develop grant writing experience with other libraries and other partners. We will describe how we worked together to purchase materials, rotate boxes using web-based tools and give suggestions on programming.

Photoscanning as a Library Service  
Scott McAvoy, University of California, San Diego  
45 min. Presentation

We can now capture the world in 3D using photos from our phones and cameras. The technology and methods are highly accessible, and perfect for library makerspaces. This talk will include an overview of 3D photoscan technology and services at UC San Diego and a live demo of a photoscan workflow.

3D Printing for the Humanities, or, How to Make within Liberal Arts  
Gardner Treneman, Randolph-Macon College  
20 min. Presentation

Makerspaces and new technologies are often seen as fun and engaging learning opportunities; but incorporating Making into a campus that has no traditional engineering or design programs can be hard to visualize. This session covers conversations about new technologies (3D printing in this case), collaboration involving assignments between the librarians and teaching faculty (German and French), and what software was chosen and how the class sessions are structured.
A Design Thinking Approach to Planning a Makerspace

Daniel J. Harper, Ohio University
Katy B. Matheuws, Ohio University
45 min. Presentation

While a makerspace can grow organically from simple means and available resources, intentional design of a makerspace results in more effective implementation and helps to ensure success of a makerspace.

This presentation will introduce audience members to the tenets of Design Thinking and the application of Design Thinking to the planning of a makerspace. Audience members will learn how to apply Design Thinking strategies specific to the five principle considerations when planning a makerspace (purpose, users, outcomes, budget, and support) and will leave the presentation with planning tools to use in their own planning of a makerspace.

Sharing is Caring: Running a Program Series that Teaches Personal Archiving, Family History Research, and Videomaking Technology

Vi Ha, Los Angeles Public Library, Central Library
Suzanne Im, Los Angeles Public Library, Central Library
20 min. Presentation

Each person has at least one good family story that should be documented. Our session provides an overview of how to help patrons with a genealogy search, digitize family archives, and record a short movie. Help library users create their own Hallmark Channel family history shorts! Support library patrons with their genealogy research, preserve their keepsakes for posterity, and bring family history stories to life.

Make Music Space

Gabriel Gaete, Long Beach Public Library
Josh Sanchez, Long Beach Public Library
20 min. Presentation

Music is a deeply gratifying aspect of the human experience. Spliced with maker culture music can act as a catalyst for auditorily engaging projects and workshops that can activate the spectrum of maker skills. In this discussion LBPL will share experiences in creating and performing music related workshops and projects. From code based to hands on projects like Makey Makey sound installations, custom music controllers; digital to analog beat making robots, light-sensitive synthesizers and more will be discussed and showcased in this presentation that shines a spotlight on the intersection between music and makerspaces.
Day One | July 11, 2019

3:10-4:00
Location: EDR
Beginner Hands-on 5-minute Programming Guide for IoT Devices and the Introduction of IoT Devices to Library Makerspaces
Kim Fwan Wong, San Francisco State University
Chris Novak, San Francisco State University
Tam Nguyen, San Francisco State University
45 min. Workshop

No experience is required for this introductory hands-on programming workshop which will cover easy visual programming fundamentals for IoT devices. We will provide a quick 5-minute MicroBIT session to write a program using a laptop, then testing and sending the code to MicroBIT.

We will demonstrate how to get started with a quick workshop on MicroBit and a consultation with patrons and instructors regarding the use of MicroBit, Arduino, Raspberry Pi, and inexpensive IoT cards for development. We will also go over some design concepts, storage solutions for various IoT devices, budget-friendly equipment lists, staffing considerations, maintenance and safety procedures, IoT use cases, and other related technologies at SF State’s J. Paul Leonard Library Makerspace. The range of technology includes MicroBit, Arduino, Raspberry Pi, ESP8266, Particle, and NXP. We must realize that the IoT market is highly competitive and that Google, as of February 12, 2019, withdrew its commitment to Android Things as a dedicated IoT platform.

This session will conclude with discussions regarding how Makerspaces empower new instructors and students to learn new ways of coding and testing programs easily online and how quickly we can setup IoT devices and IoT sensors over a network to collect data for future analysis.

Location: LAC 225
Involving K-12 Students in the Makerspace
Victor Surovec, Arizona State University
Ashley Gohr, Arizona State University
Jesse Lopez, Arizona State University
45 min. Panel Discussion

In our session, we will be discussing how the ASU library uses its library makerspace to engage with the K-12 students in our community to become better problem solvers through the Making Movement.

Location: Howell Boardroom
Creating Connections with Faculty
Cherie Bronkar, Kent State University, Tuscarawas
45 min. Presentation

KSU Tuscarawas Makerspace works closely with faculty to integrate our space into the curriculum in inventive ways. From the Nursing Program to English courses, Makerspaces are taking learning and instruction to new levels. We will offer proven methods that encouraged faculty to offer alternative assignments allowing students to share their learning experiences through technology. Our Nursing Program takes part in innovative collaborations with our Makerspace, resulting in products to enhance our Nursing Program training objectives. We will discuss how to make this happen on your campus as well. We will also discuss unique was to assure sustainable funding for equipment and supplies.

4:00-6:00
Location: Fasnacht Court
Opening Reception
### Keynote: The Possibilities and Perils of Inclusion in Makerspaces

**Maggie Melo - Assistant Professor, University of North Carolina, Chapel Hill**

Why do makerspaces attract a narrow demographic of users? If the Maker Movement is founded on values on openness, diversity, and inclusion, then why is there an underrepresentation of races, genders, and classes in makerspaces? Why aren’t the inclusion initiatives in our makerspace welcoming diverse users? In this talk, Melo explores how inclusion efforts, despite their good intentions, undermine possibilities to create supportive learning environments for underrepresented populations. Melo challenges the idea that makerspaces are inherently welcoming environments, and instead offers an examination of the ways makerspaces dissuade marginalized communities from participating therein. This keynote will extend strategies to cultivate tech-centric learning environments that are intentionally designed to be more equitable and supportive for a diverse population of users.

---

### Making Saves Lives: Research, Education, & Clinical Practice in an Academic Health Sciences Library Makerspace

**Brian Zelip, University of Maryland**

20 min. Presentation

This talk will detail the use cases, services, and outreach of a pioneering makerspace in an academic health sciences library.

Located in the University of Maryland Health Sciences and Human Services Library (HS/HSL), the HS/HSL Innovation Space was created in 2014 to support innovative teaching, learning, and research activities throughout the University’s teaching hospital and graduate programs in medicine, nursing, pharmacy, dentistry, social work, and life sciences.

A new type of library service is growing out of this context and elsewhere, what the author refers to as “hands-on prototyping”. This involves working closely with users in an iterative process of designing, building, and testing possible solutions to some problem.

This talk will highlight collaborative prototyping projects based in the health and life sciences, and suggest tools and skills that apply more generally to the service.

---

### The Students are Busy! Promoting Emerging Technologies at a Medical Library

**Chelsea Misquith, Indiana University**

20 min. Presentation

This session provides an overview of new techniques used to promote the Nexus Collaborative Learning Lab, housed at the Ruth Lilly Medical Library, Indiana University School of Medicine. In particular, attendees will learn about strategies such as collaborating with student groups and strengthening the Nexus’ web presence. Future plans for outreach/promotion of emerging technologies services and strategies to increase student engagement with the Nexus will also be discussed. Currently, services offered through the Nexus include 3D printing, virtual reality, and a touch-enabled IQ-Wall for collaboration and visualization.
Integrating Virtual Reality to Promote Instructional Teaching, Cross-Campus VR Collaboration, and Development in Makerspaces with a Limited Budget
Kim Fwan Wong, San Francisco State University
Chris Novak, San Francisco State University
45 min. Presentation

This session will discuss the use of virtual reality to promote instructional teaching and VR development in Makerspaces with a limited budget. We will look at some design concepts, spaces, budgetary considerations, equipment configurations, maintenance requirements, staffing considerations, safety procedures, virtual reality use cases, and other related technologies employed at SF State’s J. Paul Leonard Library Makerspace.

These devices and applications include the HTC Vive VR Headset, Oculus Rift VR Headset, Insta360 ONE, GoPro Fusion 360 video cameras, Unity, and AutoDesk. This session will touch upon how immersive learning environments drive the development of experimental teaching methods for instructors and hands-on training for students with the goal of understanding difficult subjects.

Makerspace Assessment: Sharing Your Story to Communicate Value
Katy B. Mathuewes, Ohio University
Daniel J. Harper, Ohio University
45 min. Presentation

As colleges and universities increasingly establish makerspaces on campus, it is necessary to examine how the makerspace contributes to student success and faculty research. Campus makerspaces, however, are often multi-functional spaces used by diverse populations. Without unifying lesson plans or goals, assessment becomes increasingly difficult. This presentation will include an exploration of a variety of ways makerspace personnel can assess their space to communicate the value of the makerspace to the university. First, quantitative measures such as visitor count, satisfaction ratings, and blending data to examine student outcomes will be explored. Next, qualitative measures such as visitor testimony, surveys, focus groups, and space studies will be presented. Assessment collaborations with faculty and campus partners will be included throughout the presentation. Participants will leave the presentation with a comprehensive inventory of assessment techniques to communicate the value of their campus makerspace.

Why Makerspaces are Essential to Organizational Innovation
Tim Raderstorf, Ohio State University
45 min. Presentation

The culture of Innovation is incredibly important to organizations. Even so, most organizations don’t realize they are neglecting to provide the two things end-users need most to engage in innovation: the permission to innovate and the validation that their ideas are worth pursuing. But even when the culture of innovation exists, organizational innovation cannot thrive unless a structure for innovation is in place. The Innovation Studio at The Ohio State University has made a dramatic shift in the culture of innovation, and it did so by changing the organizational structure of innovation. Since launching in March 2017, the Innovation Studio has supported over 150 interprofessional teams with over $100,000 in funding to incubate their ideas and turn them into actions. This session will explore the structural model that allowed our makerspace to obtain such rapid success, and showcase our model it can be replicated at organizations across the globe.
Making Space for Discovery
Sara Bond, NASA Jet Propulsion Laboratory
Camille Mathieu, NASA Jet Propulsion Laboratory
Christopher Dixon, NASA Jet Propulsion Laboratory
45 min. Presentation

The Jet Propulsion Laboratory (JPL) is one big makerspace, equipped to enable robotic exploration of the solar system. Given the high level of technical sophistication and expertise available across the Lab, how does the JPL Library’s modest makerspace add value to the institution? The key is accessibility.

The JPL Library’s makerspace offers something unique — a space with no personal cost or constraints on what can be produced. Many engineers will utilize the makerspace’s basic 3D-printers for prototyping something quickly, or simply to produce a part that they would otherwise be unable to in their working environment.

Many patrons also visit the library building to seek out a space where they can work, either communally or individually, on various projects. The JPL Library makerspace and free-use space is unique at JPL in that patrons can connect and collaborate with each other across divisions and groups. This in effect makes the library a community-driven space that is both physical and conceptual. In this presentation, three JPL librarians will discuss how they help “make space” for community and discovery in the fast-paced work environment of the Jet Propulsion Laboratory.

Building STEAM: Collaborating with the Art Department to Increase Makerspace Usage
Nichole Boone, Collin College
Val Curry, Collin College
45 min. Presentation

This presentation will discuss the collaborations between the library makerspace and the Art Department at Collin College, a large two-year institution just north of the Dallas/Fort Worth metroplex. We will discuss the process of outreach to the department and how to increase faculty involvement with the makerspace. We will provide many examples of projects and assignments students have done in the makerspace to fulfill requirements for art courses, as well as discuss workshops presented in the makerspace by art faculty. Finally, we will discuss the impact these collaborations have had on our makerspace usage statistics.
1:00-1:50 | Location: EDR

Thinking Inside the Box
Jeff Hacker, North Delta Secondary School
45 min. Workshop

In this workshop, participants will learn how to visualize a laser cut box with slots and tabs and then draw it in an online CAD program called OnShape. Each person will leave with the pieces of a box, but also with the ability to see how a design comes together. The workshop comes from the main problem students face, which is accounting for the thickness of materials when designing for a laser cutter.

45 minutes is a pretty quick time for this, so we will start with the pieces of a box and then work our way backwards to the design using constraints, dimensioning, and critical thinking. For this workshop, each participant will need a chromebook, laptop, or other computer - other materials and tools will be provided.

Location: ACC 205

The Power of Neutrality in a Library Makerspace
Brian Palmer, Washington College
Andrea Hearn, Washington College
20 min. Presentation

When encouraging students to take advantage of campus resources available to them, some are held back by a mental catch-22. For a student who doesn’t feel they have any artistic ability, entering and using open resources in a facility run by the Art department may feel intimidating. Similarly, a student who feels they are not technically minded may feel uncomfortable entering an open facility run by an Engineering department. A campus library can often be thought of as neutral turf, a place for all to discover, create, collaborate, and innovate.

Learn to leverage the power of that neutrality to gain maximum reach to on your campus. Explore the possible inclusion of other spaces where making takes place as an extension of your overall campus Maker Network. Learn to forge partnerships with these entities to help end the fear of imposter syndrome and maximize student achievement and satisfaction through an early discovery of potential academic pathways.

&

Creating Inclusive Makerspaces
Sarah Nagle, Miami University
20 min. Presentation

As more universities embrace makerspaces as catalysts for creativity and innovation, the higher education community has the opportunity to address issues of inclusivity and intentionally create spaces that encourage participation from all. Having a physical space that is open to all is not enough to ensure that our makerspaces are the inclusive spaces that we want them to be. There are a host of reasons that students might feel uncomfortable or unwelcome in a makerspace. Ethnicity & race, religion, gender identity, socioeconomic status, age, disability, skill level, mental health, or countless other parts of identity may play a part in a person’s comfort level in a space. We must actively work to embrace diverse makers and to create inclusive spaces. In this presentation, we explore the history of diversity in the maker movement and discuss ways to work against historic inequalities and create environments that empower all members of our communities to become makers and all makers to realize their creative potential.
Through the Looking Glass: Student Perspective Into Working in a Makerspace
Alvaro Alvarez, University of La Verne
Tiffany Casillas, University of La Verne
Raymond Gonzalez, University of La Verne
Brendon Wheeler, University of La Verne
Duc Nguyen, University of La Verne
20 min. Presentation

We will focus on showing our audience how a Makerspace can be used to engage members and groups from the community and campus. Students will talk about their experience working in the Makerspace and how it's helped them to learn and grow through their college career.

Tinkerspace: Mobile Maker Modelling
Sarah Siddiqui, University of Rochester
Allegra Tennis, University of Rochester
20 min. Presentation

University STEAM programs are progressively integrating hands-on learning and scientific computing skills into undergraduate curricula. However, most academic departments lack the bandwidth to develop these programs. Based on conversations with faculty, the TinkerSpace program at the River Campus Libraries started offering workshops to build skills in Arduino and Raspberry Pi-based hardware, coding and basic electronics. The workshops have been well-received by the UR community, and additional programs were created based on feedback gathered from participants. The addition of other workshops provided an excellent opportunity to hold sessions at diverse locations across campus, and to collaborate with related groups and programs. In this presentation, we will discuss the timeline of TinkerSpace, our assessment techniques, and vision for the future.

Demystifying New Spaces with 360 Video
Leah Howd, University of Nevada, Las Vegas
Maita Palispis, University of Nevada, Las Vegas
45 min. Presentation

In Spring 2019, Lied Library will unveil newly constructed multimedia production spaces for the research and creative pursuits of the UNLV community. Spaces include four audio recording studios, one video recording studio, and a makerspace. The Department of Knowledge Production collaborates with users to fully realize the potential of each space through individual and group instruction. As an extension of our instruction, we will promote and demystify these new spaces through immersive, online instructional content leveraging 360° video.

To realize this project, we will be working with a student fellow. The fellow will collaborate with the department to plan, capture, and edit and annotate video of the new spaces, and embed the video in the Libraries’ website. Finally, the fellow will utilize this project experience to inform how we can support 360° video assignments in courses across UNLV curricula in the future.

For this presentation, the student fellow and myself will discuss our progress on this project. This will include:
- obtaining funding
- challenges and lessons learned
- best practices for 360 video capture and editing
- implications for future instruction that utilizes 360 video
- assessing success

Those who attend this session will have a chance to consider and discuss the potential for instructional 360 videos and how they might be leveraged for their own spaces and instruction.
Healthy makerspaces need care and feeding.
- Learn about how the Mountie Makerspace went from a building in need of renovation to an open makerspace within six weeks.
- How did we attract 900 members just one year?
- How do you track 2000 hours of makerspace usage per month?
- How do you coordinate with faculty to integrate makerspace activities into the classroom?
- How do you engage your makerspace with the community and connect the public to your institution?

The Mt. SAC Mountie Makerspace offers over 900 members access to a wide range of technologies including digital fabrication, welding, machining and wood working while providing a safe community for all members to work, share ideas, and participate in networking activities. The Mountie MakerSpace works closely with STEM departments on campus to encourage and support underserved and underrepresented STEM students as they progress toward completion of their academic programs, whether their ultimate goal is certificate/degree completion and/or transfer to a baccalaureate degree-granting institution.

An important goal of the Mountie MakerSpace is to increase interaction among faculty and underrepresented students by enabling open-ended, project-based learning. Although the Mountie MakerSpace is a non-instructional facility (i.e., no formal credit classes are held in the facility), multi-disciplinary faculty use informal hands-on STEM learning to build STEM students’ confidence and skills.

The Academic Library Makerspace: Bridging Partnerships Between Campus and Community
Katy B. Mathuews, Ohio University
Daniel J. Harper, Ohio University
20 min. Presentation

Universities have a responsibility to be good community partners. Indeed, universities have an exciting opportunity to not only support innovation on campus, but to also collaborate with community partners to support entrepreneurship and creativity to help alleviate some of the social and economic challenges faced by the community. The campus library is an ideal location for a makerspace that aims to connect with the community. Inclusive and interdisciplinary spaces, academic libraries serve campus and community members alike. This is particularly true in the Appalachian region of the United States where poverty, economic disinvestment, and declining wellness are challenges. The Ohio University Libraries recently welcomed CoLab, a hub for innovation and creativity.

The goal of CoLab is to connect disparate resources across campus and into the community. Hosting events, acting as a directory for resources, and providing collaborative space are part of CoLab’s strategy to connect campus and community. The value of spaces like CoLab, is the potential to build meaningful partnerships with resources such as industrial kitchens, equipment workshops, and artist studios to help overcome community challenges of poverty, food insecurity, housing insecurity, economic development, and wellness.
0-100 Real Quick: Creating a Makerspace at the University of North Carolina, Greensboro
Dr. Armondo Collins, University of North Carolina, Greensboro
Alyssa Wharton, University of North Carolina, Greensboro
45 min. Panel Discussion

This panel discussion brings together staff members from the Digital Media Commons at UNC-Greensboro to discuss the makerspaces they built during a state budget crisis. Our staff has integrated makerspaces and making pedagogy into our mission of offering patrons access to, and expertise in, emerging technologies. Our staff has retooled our spaces and service procedures to accommodate 3D printing, multimedia production, and virtual reality without increasing the library’s footprint or making major structural changes to our library’s traditional physical plant. In this presentation, UNCG’s Digital Media Commons staff will share their experiences, successes, and failures, and will talk about how they have integrated these divergent technologies, and making, into an organic whole during tight fiscal times.

In this presentation we will cover:
- How we set up our makerspace in phases over time and created buy-in from campus partners.
- The role of our library makerspace on a campus with several makerspaces.
- How we’ve assessed our makerspaces to chart making’s future in our department.
- Present and future makerspace partnerships

Location: LAC 103

Make Your Space
Judy Hunter, University of North Texas
5 min. Lightning Talk

An overview of a grant project to get support from colleagues and other University staff.

How a University Makerspace is Empowering K-12 Education to Teach Maker Skills
Lauren Fox, National University
Brian Gelb, National University
5 min. Lightning Talk

Introducing students to STEM concepts and technologies can be intimidating at best for educators who don’t have a strong background in the sciences, or who haven’t had opportunities to master specialized equipment like 3D printers. One of the National University Library’s makerspace’s objectives is to provide STEM-based training opportunities for students and alumni of the university’s Sanford College of Education. During this short session, we’ll survey the types of programming that we’re offering, interesting partnerships we’re making with other organizations, and how we’re marketing and promoting our services and workshops.
Pulling it All Together: Consolidating Technology and Services into a Central Makerspace
Leanna Fry Balci, Brigham Young University
5 min. Lightning Talk

The library at a large private university recently created a centralized makerspace. This lightning talk will discuss the process of selecting services, organizing personnel, and finding a location for a makerspace. It will share the successes and struggles of building the physical space as well as plans to assess its value to the campus community.

Supporting Innovation and Entrepreneurship at a Technology Focused University Campus
Lisha Li, Georgia Tech
5 min. Lightning Talk

How a 21st century academic library responds to the rapid changes in higher education? What roles an academic library can play on a campus with multiple interdisciplinary programs involving innovation and entrepreneurship together with 20 plus maker spaces scattered around campus? This presentation discusses librarians’ collaboration with faculty and involvement in multiple innovation and entrepreneurship programs/classes, and outreach to multiple maker spaces and programs.

Is This Thing On? Embracing the Fear of Failure During Makerspace Events
Tiffanie Ford-Baxter, California State University, Los Angeles
Sheree Fu, California State University, Los Angeles
5 min. Lightning Talk

Fears often fall into two categories, real and imagined, and it can be hard to distinguish between them. Starting a makerspace can be anxiety-inducing as you imagine all the things that can and very well might go wrong. In this lightning talk, Sheree Fu and Tiffanie Ford-Baxter will discuss some of the real and imagined fears they conquered while starting a new makerspace pop-up program at California State University Los Angeles Library.

Spread the Word: Academic Makerspaces Partnering to Promote Making
Catalina Lopez, Chapman University
5 min. Lightning Talk

Chapman University’s Leatherby Libraries was limited with materials on makerspaces and 3D printing. To promote making and makerspaces in the Libraries, 3D printed materials were borrowed from University of La Verne Library Makerspace for a display. The display included selected printed resources, a poster board explaining the process of 3D printing and the types of filament used in 3D printing. The display was used to showcase to the library staff and patrons how 3D printing works and what the virtual designs of 3D objects look like.
Day Two | July 11, 2019

3:20-4:10 Location: ACC 205

**Makerspace in Lower School Library Curriculum**

Devorah Bader, Tarbut v’Torah Community Day School
Velear Schrupp, Tarbut v’Torah Community Day School

45 min. Presentation

This presentation will explain our library curriculum philosophy and show examples of how we implement the use of our makerspace for our lower school classes (TK - 5th grade).

---

Location: LAC 103

**Powerful Partnerships in the Making: Developing Public Library Makerspaces with and for the Community**

Pamela Van Halsema, Bay Area Discovery Museum
Danielle Perez-Granado, Corona Public Library
Guadalupe Gomez, Anaheim Public Library

45 min. Panel Discussion

Hear from the organizers and two participating libraries in a pilot project that is working to establish community-driven makerspaces in ten public libraries across the State of California. The project, which is a partnership between the California State Library and the Center for Childhood Creativity at the Bay Area Discovery Museum, selected a diverse cohort of ten libraries that were under-resourced or serve a high needs population.

Each makerspace, when completed will be unique and a reflection of the community it serves; some will be set up in a dedicated space, some on a mobile cart, and others as a pop-up program. Pilot sites are reaching outside the walls of the library to partner with makers in the community, from K-12 to higher ed and community groups. Come hear how this cohort of public libraries from across the state are building these bridges, and share your own ideas and experiences for how to develop a dynamic community-wide maker ecosystem.

Project website www.ccclibrarymakers.org
3:20-4:10  Location: Howell Boardroom

**iMake Mobile Innovation Center: Taking Making on the Road and Lessons Learned from Development of a Mobile Makerspace**

Jason Kennedy, Moreno Valley College  
Dr. Melody Graveen, Moreno Valley College  
Donnell Layne, Moreno Valley College  
45 min. Presentation

Moreno Valley College (MVC) has taken making on the road with the iMAKE Mobile Innovation Center. Designed in collaboration with Base 11, a non-profit STEM Accelerator, as a rapid prototype space, the iMAKE Mobile Innovation Center resources include nine 3D printers, two laser cutter/printers, two vinyl cutter/printers, and a heat press. In addition, the space houses 10 computer workstations to support design work, an exterior monitor for use with virtual reality equipment, and it supports computer coding projects using Raspberry Pi and Arduino.

Our presentation will focus on lessons learned in the development of a mobile makerspace including considerations for planning and determining investments, equipment and vehicle decisions based on planned use, identification of partner resources, ways to build engagement, and creation of a sustainability plan. Attendees will hear the story of how the iMAKE Mobile Innovation Center came about and the lessons learned in the process.

---

**Beginner Hands-on 3D Design Session for 3D Printing in Library Makerspaces and the Promotion of Rapid Prototyping and Product Development**

Kim Fwan Wong, San Francisco State University  
Chris Novak, San Francisco State University  
Tam Nguyen, San Francisco State University  
45 min. Workshop

No previous experience is required for this introductory 3D design hands-on training workshop which will discuss the design of basic 3D STL files for 3D printers. We will provide a quick 10-minute TinkerCAD design session to create a keychain and export it to STL for 3D printers. If time permits, we will demonstrate how to inspect a 3D design, conduct a consultation with a patron, process a file using Cura for Ultimaker, and provide free 3D prints of participant designs.

We will also address some design concepts, the space requirements for 3D printers, budgetary considerations, equipment configuration, staffing considerations, safety and maintenance procedures, use cases of 3D printers and other related technologies at SF State’s J. Paul Leonard Library Makerspace. These include uPrint SE Plus, Form 2, Ultimaker 2 Extended +, Type A Series 1 Pro, Solidworks, Autocad, Rhino, TinkerCAD, Virtual Reality HTC, and Vive/Oculus Tilt Brush by Google.

This session will conclude by discussing how 3D printers and rapid prototyping environments within Makerspaces drive new product development, business proposals, instructional teaching methods for instructors, and hands-on training for students who seek to learn new ways to design novel products and modify existing products for the market.
Make the Grade: Integrating: Making into the Higher Education Curriculum
John Burke, Miami University Regionals
45 min. Presentation

Makerspaces provide an avenue for individuals and groups to independently create projects, learn how to use equipment, and tinker away. However, they can also be used by students to complete making-related assignments for courses. How are makerspaces being integrated into the curriculum in higher education?

This session will provide examples drawn from academic makerspace literature and from individual makerspaces on how faculty members are including makerspaces and making activities in their courses to meet learning objectives. Along with these examples, methods that academic makerspaces can use to help faculty create assignments and to support these activities will be identified. These may include faculty learning communities, grants, and other instruction and encouragement aimed at creating maker assignments.

Taking this one step further, the presentation will also seek to apply the set of makerspace competencies defined by the University of Texas at Arlington Libraries to assignments beyond the ones considered in their project. Can their set of competencies be applied to those assignments, and does categorizing the assignments by competencies shed light on what types of assignments faculty are creating?

A final part of the presentation will examine literature and examples of makerspace integration in the K-12 curriculum. Are there approaches used in this setting that might be applied to higher education?

Closing Dessert Reception:
La Verne Makerspace Tours, Makerspace Showcase