

ANNUAL REPORT 2014



CRASHSPACE

2 Who We Are

3 Letter from Our Cofounder

4 What We've Accomplished

5 Plans for the Future

6 Member Highlights

8 Classes and Events

10 Outreach

11 Fundraisers

12 Membership Data

13 Financial Data

14 In the News



ANNUAL REPORT 2014: WHO WE ARE



The Collaborative Research Association of Social Hacktivity

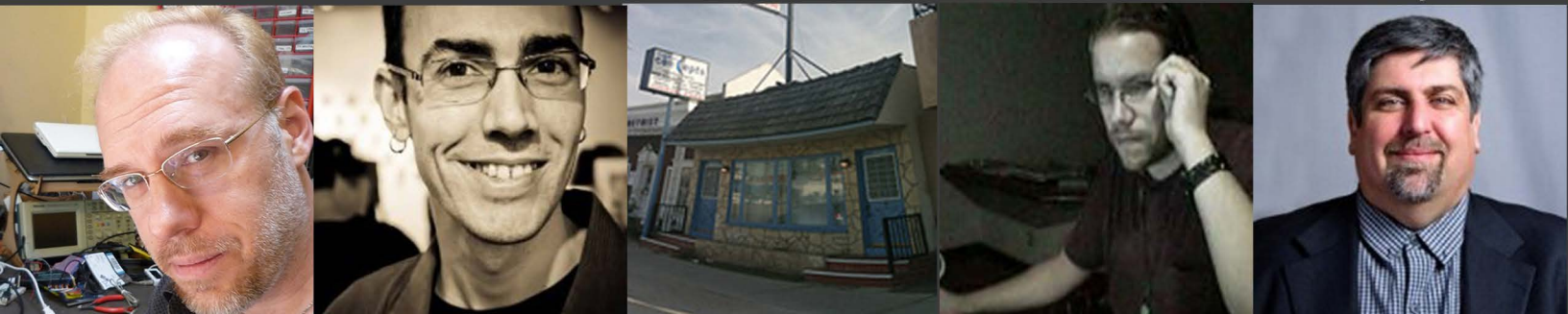
(**CRASH Space**) is a community-based nonprofit organization taking a grassroots approach to the proliferation of technical, scientific, and artistic skills beyond the traditional bounds of academia. We provide free and affordable classes, events, workshops, and open hours on a wide variety of topics, many of which are focused on the STEAM fields: Science, Technology, Engineering, Art, and Math.

CRASH Space offers our local community a one-of-a-kind experience at the intersection of exploration, education, and self-empowerment. We are a collaborative workshop, a test bed for new ideas, and a community of makers and doers. We provide tools and resources for members and participants to utilize to realize their ideas, as well as a community of people rich with skills and experience to share. CRASH Space strongly advocates for individuals to feel empowered to take initiative and believes that open educational resources are the key to a better and more capable future for us all.

-Michelle Leonhart

CRASH Space Vice President & Board Member

The CRASH Space Board of Directors, pictured left to right, top to bottom:
Carlyn Maw, Sean Bonner, Theron Trowbridge, Levi Simons, Michelle Leonhart
Tod Kurt, Matt Pinner, Justin Corwin, Daryll Strauss



CRASHSPACE

I first visited a hackerspace

in the winter of 2006 while hanging out in Europe. The experience simultaneously blew my mind and made all the sense in the world. I'd been to plenty of shared/open workspaces so I thought I knew what to expect, but I wasn't prepared for how at home I would instantly feel because of the community. In those early days I equated the feeling to the excitement and energy I was used to finding in mid 1990s punk houses. A true community coming together, sharing resources and trying to make something they could be proud of. Only at hackerspaces fanzines and records had been replaced by soldering irons and laser cutters. I fell in love immediately and made it a primary goal to stop by every hackerspace in any city I visited that had one. This was a reasonable goal because hackerspaces were few and far between at this point, and as much as I loved visiting these spaces I was always sad upon returning to LA and realizing we didn't have our own space, or our own community to orbit it.

By 2009 I couldn't stand it anymore and publicly wondered if anyone would be up for trying to start a space with me. A small group emerged, led by Carlyn Maw, Tod Kurt, Mike Outmesguine, and myself. We found a space. We sat on the floor because we had no furniture and shared a vision for what our new little hackerspace might become.

Six years later, I'm delighted to say that CRASH Space has grown up even awesomer than we could have ever imagined. Every step hasn't been perfect but we've learned and corrected course and I can easily say that it's my favorite hackerspace I've ever been to. The projects that come from this space and the people we attract are endlessly inspiring. I can vividly remember the first time I read about something super cool online only to find out someone from CRASH Space was behind it. I don't know if that's because I was more out of touch than I should have been, or because there are just so many amazing people working on brilliant things here that it would be impossible to know about everything. I choose to believe it's the latter.

I still visit hackerspaces every chance I get, but these days I almost always leave wishing they were more like CRASH Space. Thanks to everyone for making this space what it is today, I can't wait to see where the next five years takes us.

-Sean Bonner,

CRASH Space Cofounder & Board Member

The CRASH Space Cofounders, pictured top to bottom:

Carlyn Maw, Mike Outmesguine, Tod Kurt, Sean Bonner



CRASHSPACE

ANNUAL REPORT 2014: WHAT WE'VE ACCOMPLISHED



Provided **education and training** to over 2,000 community members



Taught **intro-level electronics** to hundreds of young children in Los Angeles



Worked one-on-one with hundreds of local adults **making a career change** into the tech industry



Collected and **recycled or repurposed** over a hundred pounds of eWaste per month on average



Traveled to multiple **schools and educational organizations** to provide hands-on technical workshops



CRASHSPACE



Increase the number of **regularly scheduled classes** and events for the public



Continue to represent Los Angeles at **tech- and DIY-themed events**



Continue to **volunteer valuable skills** and services to local schools and organizations



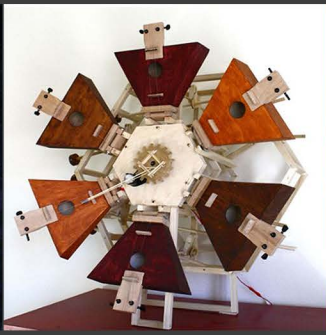
Continue to create **free and open** educational instructions and curriculum



Complete a **redesign** of the organization's website



ANNUAL REPORT 2014: MEMBER HIGHLIGHTS



Barb Noren is a multi-faceted maker and educator who has spent her life exploring a wide variety of media, from papercutting to woodworking to electronics. She also has a passion for music, and both composes and performs her own pieces. Barb is a cornerstone of CRASH Space, offering her technical expertise to our members and the public through frequent classes, events, and workshops.

The Hexachord Barb created this past year pulls from several areas of her eclectic background. This custom, motorized string instrument is hand-made, and features six individual chambers which can be moved into or away from a central spinning plectrum arm. The Hexachord won an Editor's Choice ribbon for CRASH Space at Maker Faire, was invited to be showcased at the Two Bit Circus STEAM Carnival, was featured in MAKE, and won First Place in the Instructables Makerspace Competition.

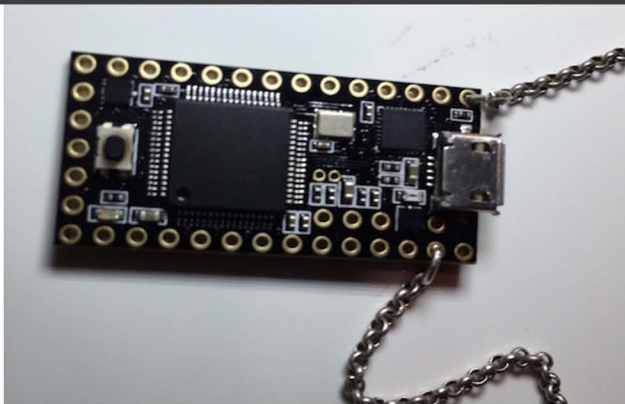
Hacking Music: Barb Noren & The Hexachord

Hacking Security: Samy Kamkar & USBdriveby

With the motto "Think bad, do good", Samy Kamkar's work focuses on security and privacy by showcasing the vulnerabilities of common, everyday technologies. Alongside educating the public, the media attention his work attracts has also proven multiple times to lead to accelerated security patches in the technologies he chooses to highlight.

Shown here, Samy's project USBdriveby is a stylish necklace made with a Teensy microcontroller which highlights the issues with the blind trust many computers put in USB. Plugging the pendant into a USB port creates a permanent backdoor, disables firewalls, and controls the flow of network traffic. This all happens within a few seconds, and continues even after the device is removed.

```
54 sub reply_handler
55 {
56     my ($qname, $qclass, $qtype, $peerhost, $query, $conn) = @_;
57     my ($rcode, @ans, @auth, @add);
58     my $err = "NOERROR";
59
60     print "Received query from $peerhost to ". $conn->{sockhost}. "\n";
61     $query->print;
62
63     # if the victim is attempting to lookup a domain we're spoofing
64     if ($spoof{lc($qname)})
65     {
66         # spoof a response!
67         my ($ttl, $rdata) = (3600, $spoof{lc($qname)});
68         my $rr = new Net::DNS::RR("$qname $ttl $qclass $qtype $rdata");
69         push @ans, $rr;
70     }
71 }
```



CRASHSPACE

ANNUAL REPORT 2014: MEMBER HIGHLIGHTS



A background in physics and engineering led Jennifer Fox to tinkering and experimenting in a multitude of technical fields, including: robotics, instrumentation, remote control, and re-purposing.

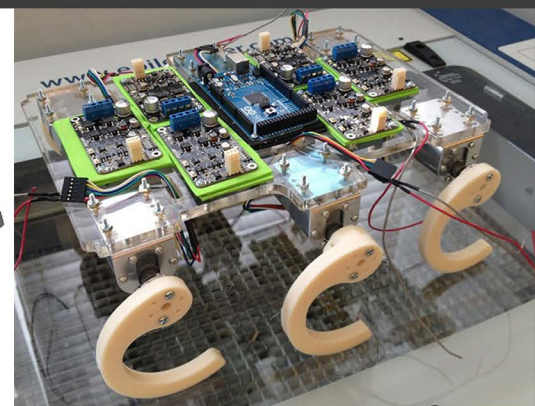
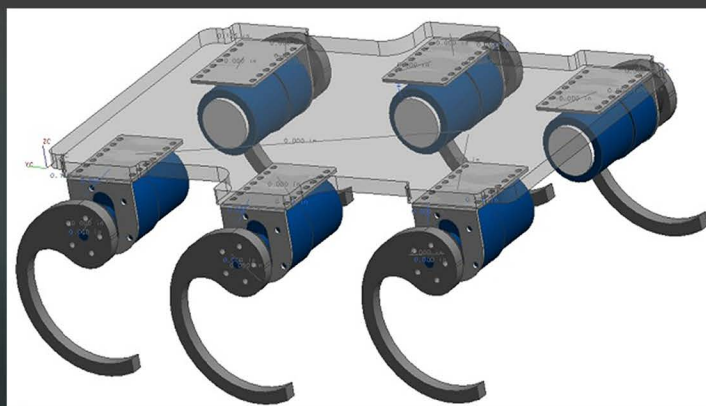
Jennifer developed a soil moisture sensor irrigation control system to address excessive urban water consumption. The system is an open-source, automated water management system that optimizes water allocation, and is designed specifically for use in urban farming. After iterating on her design over several months with fellow CRASH Space members, Jennifer now has a working prototype that she is planning for installation at a nearby school in Lennox, California. She also has designs in the works for an improved version 2.0, complete an automated irrigation schedule for more efficient water distribution, and remote sensing and control via a Raspberry Pi webserver.

Hacking the Environment: Jennifer Fox & The Soil Irrigation System

Hacking Robotics: Phillip Dupree & Project Zero

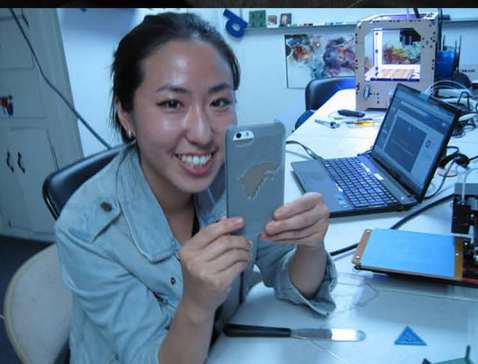
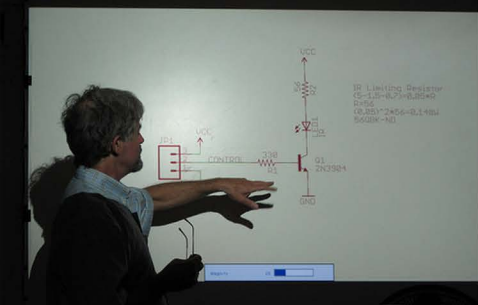
Now a student of the Stanford Design Program, Phillip Dupree studies design theory, art, advanced mechatronics and embedded systems.

Project Zero began as an experiment. After researching similar designs at the University of Pennsylvania's General Robotics, Automation, Sensing and Perception (GRASP) lab, Phillip wanted to put his skills to the test and create his first biomimetic, hexapedal walking robot. In order to complete this monumental goal, Phillip broke the project up into three major pieces: mechanical design and assembly, electrical wiring and communication, and microcomputer programming and control system design. Checking in weekly at the CRASH Space meetings for feedback and support, Phillip worked over the next several months to complete Project Zero.



CRASHSPACE

ANNUAL REPORT 2014: CLASSES & EVENTS



Over 2,000

Los Angeles community members reached,
via:

WEEKLY 3 EVENTS

3

BI-MONTHLY 2 EVENTS

2

MONTHLY 7 EVENTS

7

ONE-TIME 6 EVENTS

6

TOTAL 294 EVENTS

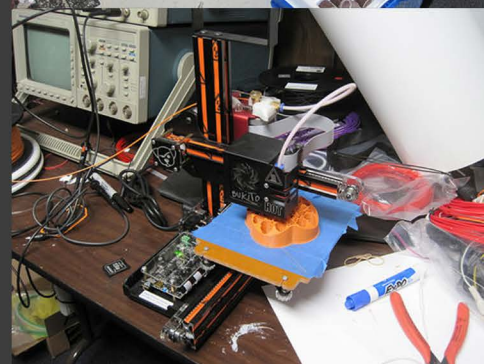
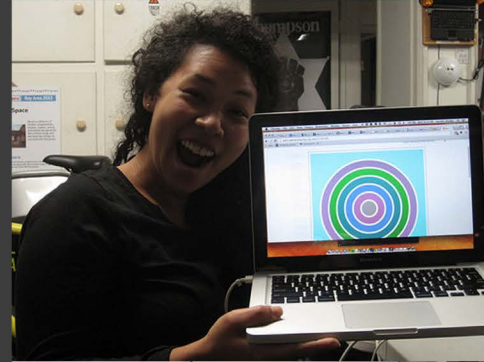
which means

CRASH Space

offered a class or event
to the public during

80%

of the year



CRASHSPACE

ANNUAL REPORT 2014: CLASSES & EVENTS



Radio Mondays

Justin Corwin, CRASH President

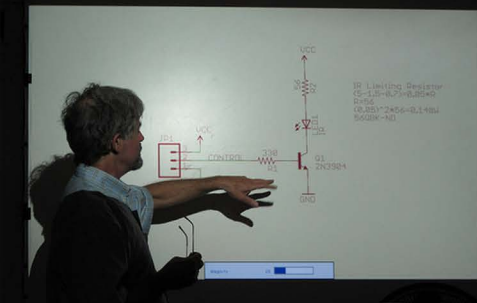
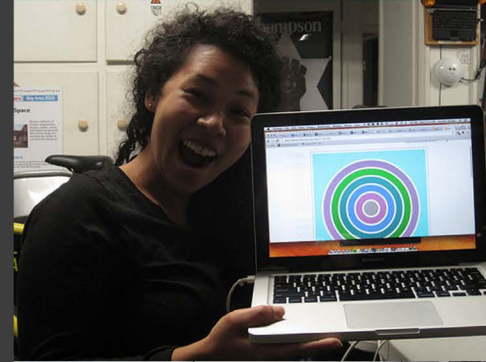
Lecture and discussion of radio technologies and related current events



Learn to Code with Us

Michelle Leonhart, CRASH Vice President

One-on-one tutoring and beginner-friendly hands-on programming training



Circuits Social

Michael Biggs, CRASH Member

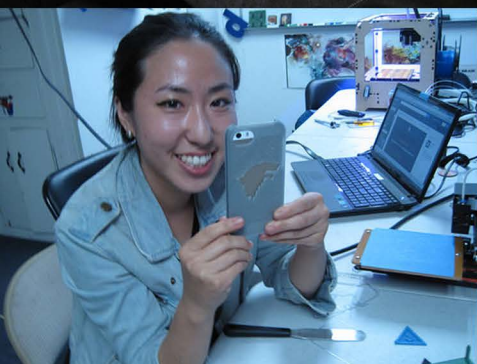
Lecture, analysis and projects on foundational electronic engineering concepts



Instructables Build Nights

Barb Noren, CRASH Member

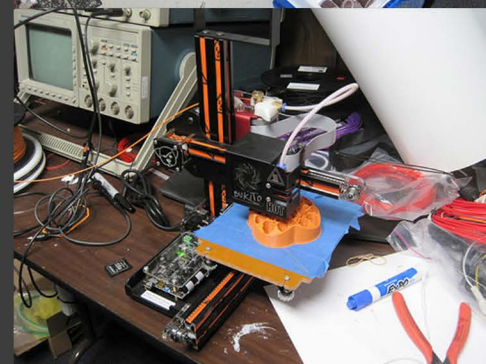
Hands-on workshop on a different technology each month, sponsored by Instructables



3D Printer Palooza

Theron Trowbridge, CRASH Board Member

Enthusiasts meetup followed by a 3D modeling and 3D printing course



CRASHSPACE

ANNUAL REPORT 2014: OUTREACH

CRASH Space took part in multiple outreach events to help encourage hands-on Science, Technology, Engineer, Art, and Math education.

Below are just a few of our favourite opportunities to share our love of technology with the Los Angeles community this past year:

LACMA Art + Tech Family Sundays



Over the course of multiple weekends, CRASH Space members worked with LACMA staff to create a family-friendly Art + Tech workshop. Families learned how to create robots that produced their own generative art pieces.

STAR Education's STEAM Nation

Selected as a "Model Program" by the White House and the U.S. Department of Education!



STEAM NATION!
SCIENCE, TECHNOLOGY, ENGINEERING, ART, AND MATH FOR ALL!

Exhibitor Recognition Certificate awarded to

CRASH Space

in honor of your time, effort and dedication to
S.T.E.A.M. Nation.

STAR Education, Los Angeles County Office of Education,
LAUSD Beyond the Bell, West LA College, and DUB Magazine
recognize and appreciate your contribution to this life altering educational event.
Awarded October 18, 2014

Karla Bossi
Executive Director of STAR Education



STAR, Inc. is a charitable 501(c)(3) non-profit education organization serving kids, families, schools and communities 



CRASH Space members teamed up with STAR Education at the STEAM Nation hands-on maker event to teach local grade school children how to safely take apart, reverse engineer, and repurpose common household electronics.



CRASHSPACE

ANNUAL REPORT 2014: FUNDRAISERS

This year,

CRASH Space ran a successful IndieGoGo campaign to increase the offerings of our on-site workshop.

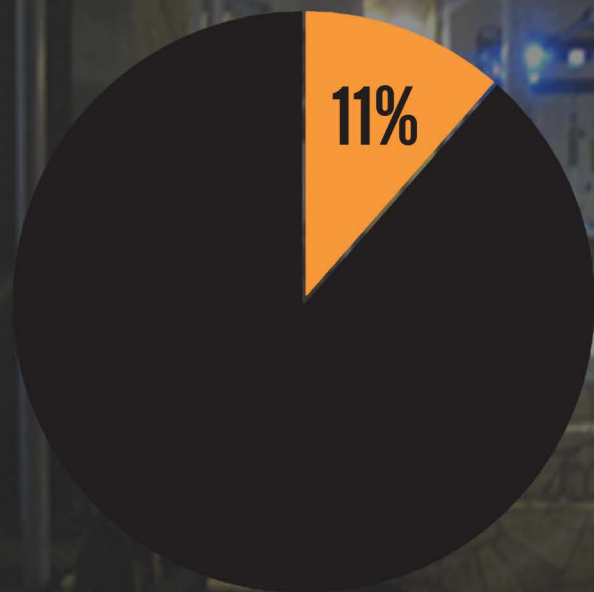
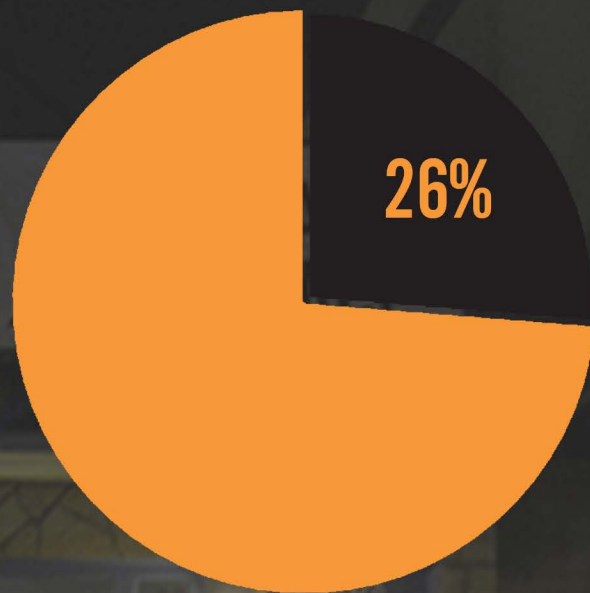
Emily Barinka, a skilled craftsperson and the Treasurer of CRASH Space, put together a campaign to get CRASH Space a new **ShopBot CNC Mill**. The campaign was 150% funded, and Emily now offers **monthly intro-level classes** on how to use the mill properly.



CRASHSPACE

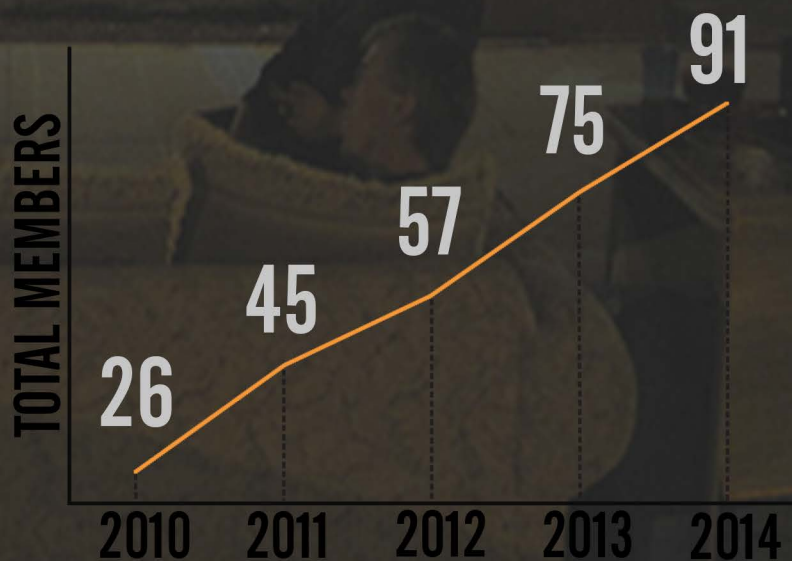
ANNUAL REPORT 2014: OUR MEMBERSHIP

Over **one quarter** of CRASH Space members are keyholders, capable of opening the space for use at any time



The percentage of female members has increased by **57%** in the last two years, but is still below target, at **11%**

CRASH Space has **grown** year-over-year as an organization since our inception in **2009**



CRASHSPACE

ANNUAL REPORT 2014: FINANCIAL DATA

2014 Revenue: \$60,388

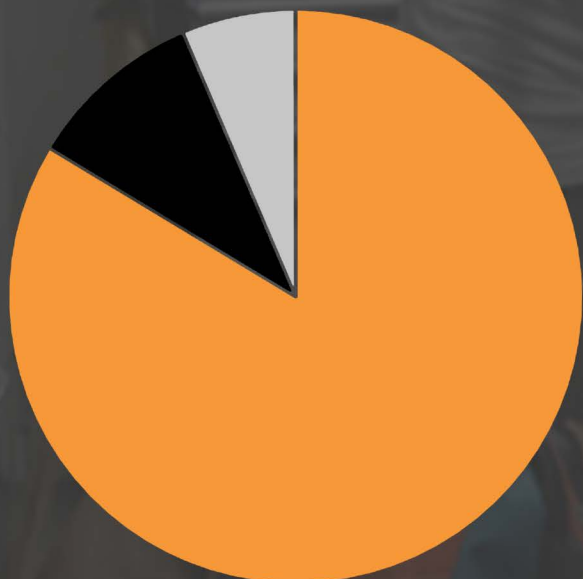
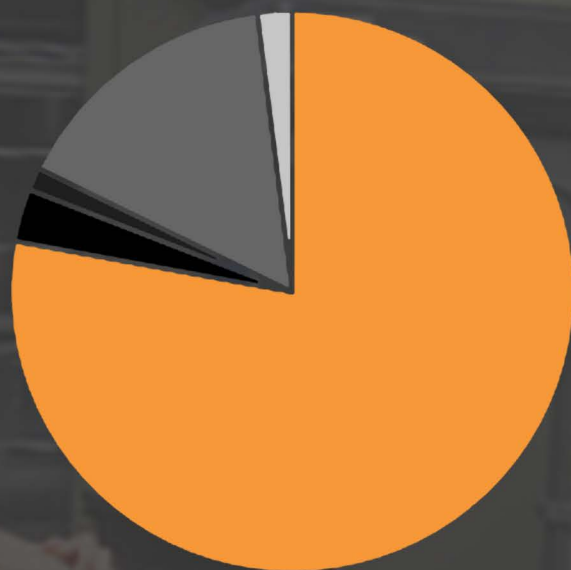
Tool Usage: \$1,828

Workshops & Events: \$808

Contributions: \$9,507

Equipment Contributions: \$1,200

Membership Fees: \$47,045



2014 Expenses: \$ 39,811

Other: \$2,513

Management & General: \$3,875

Programs and Services: \$33,423

These statements were prepared—without audit or review from any accountant—from the corporation's books and records.

-Paul Boone, CRASH Space CFO



CRASHSPACE

ANNUAL REPORT 2014: IN THE NEWS

built in los angeles

DISCOVER

JOBS

Post a Job

members

companies

news

events

jobs

about us

2. Learn to Code With Us



Focus: Ruby, Python, HTML, CSS, JavaScript

Experience Level: Beginner to Advanced

Where: Culver City, Pasadena

When: Wednesday Nights

The Learn to Code With Us program embraces the full spectrum of software engineering experience levels. Seasoned developers attend to work on their own projects and assist others, students receive guidance on their homework and independent projects, and novices gain insight on how to begin. A "free-form" tone characterizes the series; its creators liken it to a relaxed, social version of professorial office hours.

"Some people have a hard time grasping this concept initially, because it's so ingrained in us to go to a classroom setting, and sit and listen quietly to a lecturer. But that's not how LTCWU [Learn to Code With Us] operates," said organizer Michelle Leonhart. "We're a community coding experience. We all come together once a week with our ideas, our half-baked projects, and our questions, and we work together, ask each other for help, and learn from each other."

Maker Mayors Action Report

<http://www.cityofknoxville.org/mayor/makermayor.pdf>

Crashspace Hackaday Tour

<http://hackaday.com/2014/01/20/touring-crashspace-the-la-hackerspace/>

Geek Girl Authority: Visit Crashspace Culver City

<http://www.geekgirlauthority.com/hey-los-angeles-visit-crashspace-culver-city/>

HackADay: Kyle Cothorn's Light Staff

<http://hackaday.com/2014/08/28/led-light-staffs-for-the-ultimate-portable-rave/>

MAKE: What Everyone Needs: An 8-ft LED Light Staff

<http://makezine.com/2014/09/04/what-all-larpers-now-need-an-eight-foot-led-light-staff/>

BuiltInLA: Learn to Code with Us

<http://www.builtinla.com/2014/08/20/5-la-organizations-will-teach-you-code-free>

HackADay: 10th Anniversary Party

<http://hackaday.com/2014/10/08/hackaday-10th-anniversary-demoscenes-and-blink1/>

HackADay: Crashspace at the Wearable Tech Designathon

<http://hackaday.com/2014/07/23/hacked-e-cigarette-vaporizer-can-send-smellsin-space/>

HackADay: Crashspace and FlipBookit mentioned

<http://hackaday.com/2014/05/04/hackaday-links-may-4-2014/>

HackADay: Crashspace and Deezmaker mentioned

<http://hackaday.com/2014/01/23/touring-deezmaker-the-first-good-3d-printer-store-in-the-world/>



CRASHSPACE