

Maker Faire

Meet the Makers

Earth Day Weekend

April 22-23

SAN MATEO FAIRGROUNDS

2020

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Geek Squad 24 Hour Computer Support Task Force® is on a mission to eradicate all evil computer activity and bring harmony to man and machine, including those at the Maker Faire. We're proud to be the official tech support provider at this great event. As such, Geek Squad® Agents will be patrolling the area and providing assistance to any exhibitor or attendee experiencing a computer issue. Also, if you have a freaky knowledge of computers and think it would be cool to wear a badge, visit our booth and inquire about becoming a Geek Squad Agent yourself.

Griffin Technology has earned its reputation as the creative leader in ingenious peripherals and accessories for Mac, PC, iPod and PSP.

Hobby Engineering is a supply store for people who want to build robots, electronic gadgets, kinetic art or anything else that moves, beeps or flashes. Hobby Engineering offers a broad range of components, starter kits and educational materials for hobbyists, artists, students, engineers and inventors. We are family friendly and have products for kids of all ages. Hobby Engineering's goal is to spark people's curiosity and encourage them to have fun while developing problem solving skills, fostering a desire to build things with their own hands and encouraging scientific and artistic creativity by teaching how to apply physical science and electronic technology to produce personal works.

Get in on the hands-on, minds-on fun of **LEGO®** building! LEGO play tables will keep children (and kids at heart!) busy free-building whatever they imagine. Robotics enthusiasts can find out what's "NXT" with an exclusive sneak preview of the recently announced next generation of **LEGO MINDSTORMS®**. See firsthand how building and programming robots that do what you want is more intuitive and fun than ever before as new technologies, new software, new motors and sensors and completely redesigned element mix create a versatile robotics toolset.

Founded in 1975, **Microsoft** (Nasdaq "MSFT") is the worldwide leader in software, services and solutions that help people and businesses realize their full potential.

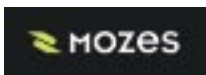
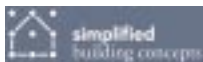
Mozes provides a mobile service that enables users to send keywords via SMS to requested content and have it returned to their phone and picked up later online. Mozes gives people the ability to take action the moment their interest is peaked and connect people with the things that matter to them.

Parallax, Inc. designs and manufactures microcontroller development tools and small single-board computers. Our product line consists of BASIC Stamp® microcontrollers, SX chips, educational tools, and robotics kits.

Robot Magazine makes the exciting world of robotics more accessible than ever to established robot hobbyists, entry-level enthusiasts and mainstream consumers who are curious about the latest developments on the new frontiers of robotics. You will find up-to-date, detailed product reviews, coverage of new robot kits and accessories, and how-to techniques and hacks that enable enthusiasts to build and modify robots. Tech updates on robots used in exploration, rescue, research and medicine are covered, as well as reviews of consumer robot products. Finally, Robot's Edu Bots section reports on the growing number of student robot contests as well as robotics resources of interest to educators.

Simplified Building Concepts is an online seller of structural pipe fittings that connects builders and makers with the means to bring their projects to life.

Squidoo is the popular new web site for everyday enthusiasts. Join thousands of people creating their own single page "lenses" on topics that matter to them. Hobbyists and DIY'ers and geeks and crafters abound! It's fast, fun, and free. (And you could even earn a royalty — for you or for charity). Make your own MAKE lens. Make a difference."



Project Sun Spot. Sun™ Small Programmable Object Technology: Visit the Sun Labs booth to see the newest, smallest, coolest computer under the Sun. This tiny, experimental Java™-based platform gives Makers a way to build applications to run on wireless sensors – smart robots, rockets, blimps, swarms, mesh networks - toys you can use! The battery powered device includes 32 bit CPU, accelerometer, temperature and light sensors, general purpose I/O, servo/stepper motor control, LEDs, wireless radio, USB interface, and a small Java virtual machine which allows wireless applications to run directly on the CPU. Available late Spring, 2006.

Yahoo! Inc. is a leading global Internet brand and one of the most trafficked Internet destinations worldwide. Yahoo! seeks to provide online products and services essential to users' lives, and offers a full range of tools and marketing solutions for businesses to connect with Internet users around the world. Yahoo! is headquartered in Sunnyvale, California.

ZAP! is the world leader in advanced transportation including electric cars, fuel cell cars, tri-brids, electric scooters, sea-scooters, portable energy and much more. ZAP stands for "Zero Air Pollution" and is a publicly traded company based in Santa Rosa, California. In our eleven years of business, we have sold more than 90,000 vehicles in 65 countries. ZAP is known around the world as a leader in advanced transportation technologies. ZAP is proud to be announcing new products and strategic partnerships at Maker Faire! And...Oh, yeah! The ZAPPY3 scooter is the "official vehicle" of the Maker Faire!

Exhibitors

Amazing Magnets are High Energy Rare Earth Magnets for Industry, Crafts and Science. Hands-on exhibits of magnet applications, magnet sculpture kits, magnetic levitation, LED flashlights, and Ferrofluid.

Blurb, Inc.'s publishing service is simple & smart enough to make anyone an author – every blogger, cook, photographer, parent, traveler, everyone. What will your book be?

iFixit sells Apple laptop parts and upgrades to Mac zealots everywhere. Our popular DIY Fixit Guide series has brought laptop repair to the masses.

ImagiKnit, the premier yarn shop, carries traditional and exotic fibers, books, patterns and supplies. ImagiKnit provides a supportive, creative environment for all yarn enthusiasts.

Have an idea to make your cell phone or MP3 player better? Find a Developer. Agree to terms. **IPswap**-it and make money! It's a new digital world!

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Metal Supermarkets® sells metal in small quantities. We stock steel, stainless, aluminum, copper and brass or can source rare and specialty metals. – No minimum order – Cut to size – Same day pickup or delivery

Mozilla Corporation builds and delivers great, user-friendly open source software, including the award-winning Firefox Web browser and Thunderbird email client.

RoboDynamics is proud to present Roomba Dev Tool, a comprehensive suite of tools for development of robotic applications on the Roomba robotic vacuum cleaner.

Six Apart is the maker of the world's favorite blogging tools: Movable Type, TypePad, and LiveJournal.

Solarbotics specializes in Mark Tilden's BEAM technology, unique gear motors, and cool hands-on projects & parts. Satisfaction guaranteed!

Surplus Center offers great savings on electric motors, hydraulics, gear-boxes, pumps, sprockets, bearings, air compressors, pulleys, transaxles & much more!

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Official Technical Support
for Maker Faire



Official Scooter
of the Maker Faire



Welcome to Maker Faire

Welcome to the first-ever Maker Faire, a full weekend celebration of DIY creativity and the people who make all kinds of interesting things. Maker Faire has elements of a science fair, a craft fair, and a county fair, with a bit of Burning Man as well. I know you're going to enjoy it.

Maker Faire is a chance to learn how to do something yourself or discover a new hobby. It's an opportunity to explore your world and the world around you in new ways. Moreover, it's a way to have fun and do something that's satisfying for yourself and even more rewarding when shared with others.

Maker Faire is an outgrowth of MAKE magazine, a year-old DIY technology quarterly. MAKE features all kinds of cool projects and ideas for transforming technology into something you want it to be. Please visit our website, www.makezine.com, to learn more about MAKE and to read the MAKE blog, edited by Phillip Torrone and Natalie Zee. I'd like to thank the program committee who helped organize the program of events: Paul Spinrad, Goli Mohammadi, Arwen O'Reilly, Sherry Huss, Natalie Zee, Phillip Torrone, Terrie Miller, David Pescovitz, all of whom are part of the MAKE team. Thanks also to Tom Atwood of *Robot* magazine, who helped bring in the robotics exhibits.

I'd like to thank the sponsors and exhibitors, along with our media sponsors for participating in Maker Faire. We have also had the good fortune to link up with many local clubs, user groups, and nonprofit organizations. I'd like to thank Wendy Tremayne for organizing Swap-O-Rama-Rama and Leah Kramer for bringing Bazaar Bizarre to Maker Faire. Thanks also to Louise Glasgow, Sherry Huss, Dan Woods, Katie Dougherty, Gerry Arrington, and Shawn Connally who did all the work behind-the-scenes to make this large, complex event happen. And a big thank you to our interns, Adrienne Foreman, Maria Mandrussow, Jake McKenzie, and Ty Nowotny. If you see Crew members at Maker Faire, please let them know if there's anything they can do to help you enjoy the event, and you might thank them yourself for the work they've done.

Finally, I'd like to especially thank the incredible group of makers who are exhibiting or giving workshops and presentations at Maker Faire. Most of them are from the Bay Area and you just might find out that some of your neighbors and friends are makers. Ultimately, we hope that Maker Faire inspires you to make your own kind of fun and become a maker yourself.

Dale Dougherty (dale@oreilly.com)
Editor & Publisher, MAKE
O'Reilly Media, Inc.

INSIDE

Maker Faire

Meet the Makers

Thank You to Our Sponsors	2
Welcome	5
List of Makers	6
Maker Faire Map	16
Schedule of Performances	29
Schedule of Presenters	30

Meet the Makers

Below is a listing of all Maker exhibits, presentations and workshops, alphabetized by title. We've provided an ID number with each title that can be used to lookup the maker's program entry on our website, Makerfaire.com, where you'll find more information. This ID number will also appear on maps handed out each day of the show to help you identify the physical location of maker exhibits at the Faire.

122 **24" Wall Clock**

Maker Exhibit

Not just any clock, but a very large, 24" tall, 12-foot wide clock with GPS-current time and accuracy down to 100ns.

Nathan Seidle is president of Spark Fun Electronics, creator of the Portable Rotary Phone, and inventor of the hot-skillet reflow technique...

227 **\$200 Machine Shop:**

Workshop

Making Frankenstein Prototypes

Learn how to prototype your invention using stock parts and learn tricks to quickly go from idea to prototype. Then learn how to set up your first shop for about \$200.

Perry Kaye has developed innovation techniques that allow him to rapidly find/create/discover category-creating and breaking innovations.

147 **3D Printing Art**

Maker Exhibit

Small, complicated 3D art works printed in different materials (wax, metal, plastic, plaster).

Bathsheba Grossman is a geometrical sculptor, working out of a ten-foot shed and a computer in her living room.

237 **Accelerometer Sensor Basics**

Workshop

In this Parallax workshop, you will wire a Memsic dual-access thermal accelerometer on a BASIC Stamp board. The microcontroller will be programmed to display the two-axis incline, which could be useful for mounting on a skateboard for g-force or incline datalogging; on a two-wheel balancing robot; or the dashboard of your 4x4 as a tilt indicator.

306 **Advanced Water Rocketry**

Workshop

Witness the synthesis of water rocket technology from around the globe (UK, Australia, France and Germany). See the unbreakable 120 PSI launcher and the 4 foot tall water rocket that reaches 300' and returns without a parachute or damage, every time.

Morgan Woodson is a firmware engineer in the iPod division at Apple.

322 **AERO-PAC: High Power Amateur Rocketry**

Maker Exhibit

For over two decades, AERO-PAC has held three high-power rocketry launches a year at our launch site in the Black Rock Desert in Northern Nevada. Come see examples of these rockets, meet the folks that design, build and fly them and learn how you too can become a rocket scientist.

Ken Biba is a member of the Association of Experimental Rocketry of the Pacific.

207 **Agents Del Futuro**

Performance

ADF will play an amplified bicycle wheel and other unique oddities amidst a dense tapestry of drones, bleeps, beats, and noise. The music is created using acoustic instruments before feeding them into an array of filters and tape loops to create a splendid jumble of surprise. Agents Del Futuro is the brainchild of Dielectric Records recording artist Jesse Clark.

Jesse is a San Francisco-based musician, producer and multi-media artist.

204 **Alt Fibers**

Workshop

Learn about environmentally-friendly fibers such as bamboo and soy silk in knitting, where they come from and how best to feature them. Then check out yarns and spinning fibers . . . even get a quick lesson on the wheel!

Shannon Okey is the author of Knitgrrl, Knitgrrl 2, and the forthcoming Spin to Knit.

309 **American Association of Variable Star Observers**

Maker Exhibit

Since its founding in 1911, AAVSO has coordinated, collected, evaluated, analyzed, published, and archived variable star observations made largely by amateur astronomers and makes the records available to professional astronomers, researchers, and educators.

AAVSO provides programs for amateur astronomers with even very modest equipment to make genuine contributions to scientific research.

153, 249 Art Of Motion Control **Maker Exhibit, Presentation**

Bruce Shapiro will demonstrate simple DIY motion control/robotic devices which use stepper motors connected to a PC. Two examples: "Eggbot" (eggplotter), and a computer-controlled Etch-a-Sketch.

Bruce Shapiro has been building progressively larger and more complicated motion-control devices as public artworks which have been installed in U.S. science centers as well as in Europe.

95 Autonomous 1/10 Scale Car **Maker Exhibit**

This autonomous miniature car follows a wire embedded in the track; it has a wireless link for adjusting control parameters, sensor tuning and display of real-time telemetry on a laptop.

John Breneman, Bobby Gregg and Rick Mann are seniors in the College of Engineering at UC Berkeley majoring in EECS. This car is the result of an intense semester-long project exceeding 300 person hours.

208 Balancing Vehicles **Maker Exhibit**

Enjoy hands-on demos of a home-built balancing scooter similar to a Segway, and a self-balancing electric unicycle.

Dr. Trevor Blackwell is the founder of Anybots Inc, a Mountain View startup building remote-operated humanoid robots. Previously he worked on e-commerce software and fast data network protocols.

125 Ballistic Cats **Performance**

So you take one mathematics professor (topology), one software engineer at a laser company, one software manager at a gunshot location company and one guy who provides caffeine to folks all over the Bay Area. Shake. Rattle. Roll. This particular science project is known as the Ballistic Cats and we rock, in the traditional sense.

357 Barony of the Westermarck: Arts and Crafts of Pre-17th Century Europe **Maker Exhibit**

This local chapter of the Society for Creative Anachronism will have demonstrations on how to make/do: Chain mail armor, Boiled leather armor, 7th through 16th Century Clothing, Hats, Paper, Spinning and Brewing.

The Society for Creative Anachronism is a non-profit organization dedicated to the researching and recreating the arts and skill of pre 17th century Europe.

140 Bay Area LEGO Users Club **Maker Exhibit**

A LEGO train layout featuring several loops of LEGO trains, buildings, roads, and various models built by members of the Bay Area LEGO Train Club.

The Bay Area LEGO Users' Group is a group of LEGO fans of all ages who get together to show their latest creations and put on shows.

287 BEAM Robots **Workshop**

We will explore the world of BEAM robots with more than 25 robots on display. We'll cover the general conceptions of robots (being mostly mass-media influenced) and why robots can be much simpler than these concepts (and more accessible).

Dave Hrynkiw is the President of Solarbotics Ltd., a company dedicated to the principles of appropriate technology" for building cool and effective robots, often using junk and solar energy.

225 How Swimming Like an Otter Got Me a Job at NASA's Jet Propulsion Laboratory **Presentation**

Swimming like an otter, creating a pipe organ out of soda pop bottles, and designing four-dimensional objects has lead Dan Goods to his current position at JPL in Pasadena, CA. Here he is developing creative ways of communicating JPL missions to the general public.

141 Bio Ninja **Make Exhibits**

The Bio Ninja is a biodiesel processing unit that can hook up to any standard 55-gallon barrel with a 2-inch cap and process the Waste Vegetable Oil (WVO) inside to make an eco-friendlier fuel for diesel vehicles.

Jaesin Mulenex is a member of San Francisco's Cellspace metalshop. He owns a city bus from Tucson, AZ, and is interested in renewable fuels.

260 Biologically-Inspired Multi-Processor **Workshop**

Build a circuit that uses preprogrammed (and reprogrammable) micro-controllers to signal human-cell-style, using concentrations, not logic.

Ward Cunningham, inventor of the wiki, is an EE and CS graduate who has been borrowing from the emerging field of systems biology for years.

113 Blinkybugs! **Maker Exhibit**

Blinkybugs are simple, electro-mechanical insect sculptures that respond to subtle air currents, movement, and vibrations by blinking their LED eyes.

Ken Murphy is a web developer working in the public broadcasting industry by day, and by night is a musician, tinkerer, and pursuer of a variety of technical/creative projects.

93 **Blogger Dump Tank**

Maker Exhibit

Bruce Gee liked the idea of an old-fashioned dunk tank, but learned that these can be quite dangerous. So he came up with an alternative that was safe, easy to use, and lots of fun.

Bruce Gee runs a Mac software company that creates plug-ins for iMovie.

148 **Bluebird Nest Box Construction and Monitoring**

Workshop

Build a nest box for Western Bluebirds to place in your yard or neighborhood and, and learn how to monitor the birds that nest inside. Become a citizen scientist and contribute your data to research programs. Janis Dickinson is Director of Citizen Science at Cornell Laboratory of Ornithology.

224, 223, 222 **Botball**

Maker Exhibit, Workshop, Presentation

Learn about Botball and its robotics kits and equipment. You can also see what what the robot is seeing and tracking as people walk by the exhibit.

Andrew Swanson is a Robotics Technician for KISS Institute for Practical Robotics, and Jenny Grigsby prides herself on being a walking example that ANYONE can build an autonomous robot – even if you have a degree in theatre!

320 **Brian Crabtree and Peter Segerstrom**

Performance

Collaborative networked music performed with custom hardware and software. tehn vs. Portable Sunsets: they collude sparkling moments of folded sound into clipped drum objects. Through a healthy parsing, it makes a drone a magic marker and a folding chair into a song.

341 **Broker/Dealer**

Performance

Equipped with an array of samplers, sequencers and vintage synthesizers, San Francisco wunderkinds Broker/Dealer make catchy minimal electronic music equally suited for the den or the dancefloor.

On their debut full-length, Initial Public Offering, B/D recalls German electronic artists like Mike Ink, not to mention Metro Area's innovative electro-disco.

305 **Bubbles Within Bubbles**

Performance

Join "The Bubble Guy" for an amazing demonstration of making bubbles of all shapes and sizes, and even bubbles inside of bubbles.

Tom Noddy is The Bubble Guy and he's been demonstrating the art of blowing bubbles for over twenty years.

50, 51 **Build a Spud Gun or a Tensegrity Tower**

Workshops

Join Bill Gurstelle and learn how to make a tensegrity tower from dowels and elastic cord or a potato cannon made from PVC plastic parts and a lantern sparker.

William Gurstelle is a member of Make Magazine's Technical Advisory Board and a frequent contributor to the magazine. He's also the author of *Backyard Ballistics* and *Notes from the Technology Underground*.

288 **Build Solar-Powered Gizmos**

Workshop

Dave will be offering a lecture on the essentials of BEAM robotics, followed by a build session, where we're going to tackle one of several projects.

Dave Hrynkiw is the President of Solarbotics Ltd., a company dedicated to the principles of "appropriate technology" for building cool and effective robots, often using junk and solar energy.

126 **Build Your Own Input Device**

Maker Exhibit

The CREATE USB Interface is DIY hardware for connecting sensors or actuators to your computer via USB. You can use sensors to create musical interfaces, controlling moving images, and even robotics!

Dan Overholt designs electronic musical instruments and writes custom signal processing software for the real-time performance of his musical works.

235 **Build Your Own RFID Reader**

Workshop

In this Parallax workshop, you will wire up a Grand Idea Studio RFID reader on a Parallax BASIC Stamp Board, and program it as a security ID device.

106 **Build Your Own Wind Powered Generator**

Maker Exhibit

Learn how to design and build a wind-powered generator that can power connected appliances.

Abe and Josie Connally live off the grid in Texas, and work and live with sustainable technology.

130 **Bunnie's Breadboarding Workbench**

Maker Exhibit

Stop by and learn how to build simple circuits using breadboards. Bunnie will have examples of projects that you can build in ten to twenty minutes, involving circuits that make sound, play music, or flash lights.

Bunnie Huang writes the Theory and Practice column in MAKE. He is the author of *Hacking the Xbox*.

97 **CalCars Plug-in Hybrid Conversion**

Maker Exhibit

CalCars engineers, along with a cadre of volunteers, will be converting a stock Toyota Prius hybrid into a "plug-in" hybrid. The result: a 100+ MPG plug-in hybrid fueled with gasoline plus cleaner, cheaper, domestic electricity.

John Davi is the communications director for CalCars.org, The California Cars Initiative.

281 **Californian Academic Technology Showcase** Presentation

Come listen and learn from some of the State's top academic research institutions to see how they use computer science and engineering technology to teach, innovate and have fun. We'll have representatives from Stanford, Berkeley, San Jose State and San Francisco State.

Mark Hayes, the organizer of the panel, is an Academic Program Manager in Microsoft's National Platform and Evangelism Team.

213 **Camera Obscura Out of Thin Air** Workshop

Bill will show how to make and use updated, powerful versions of the camera obscura, as well as several other tools used by artists of long ago.

Due to having double-majored in math and art as an undergraduate, Bill Kenworthy was once humorously advised by a friend's father to pursue a career in painting by numbers.

190, 84 **Car PC Hacks** Maker Table, Workshop

Learn what you can do if you had a PC in your car and how you might install it. Then we'll look at the ways you might hack your car.

Damien Stolarz is an inventor, entrepreneur and writer who has spent most of his life making electronic devices talk to each other. Damien is the author of Car PC Hacks.

176, 302 **Cardboard Creations for Everyone** Maker Exhibit, Workshop

Cardboard can be used for quick prototyping of 3D objects, as well as for more fun projects, such as building robot costumes or action figure playsets. Stop by we'll show you how to use corrugated cardboard to make all kinds of play things!

Anca Mosoiu is a software developer and initiator of fun activities. Jeff Jouppi is a graphic designer and illustrator with a degree from RISD.

300 **Celestial Mechanics** Maker Exhibit

Celestial Mechanics is an ongoing animation project that is based on the statistics, data, and protocols of manmade aerial technologies--a visualization of the paths and functions of the machines hovering, flying, and drifting above our planet.

Aaron Koblin is an MFA candidate in Design|Media Arts at UCLA. Gabe Dunne is a designer currently exploring data visualization.

109 **Circuit-bending** Workshop

Learn how to turn most any musical instrument or audio toy into a full-fledged, squawking, blipping, garbage-spewing monster. Make sure to also check out James Marks performing with Scattered Light.

James Marks' quest to make music with the least money outlay possible has led to a history of broken toys, circuit-bent alarm clocks, tape loops, and dumpstered guitars.

272, 273 **Citizen Weather Observer Program** Maker Exhibit, Presentation

Come see how anyone with a weather station can join the Citizen Weather Observer Program and get their quality feedback information, how that feedback information can be used to improve the quality of your weather data, and see some of the equipment you can use to participate.

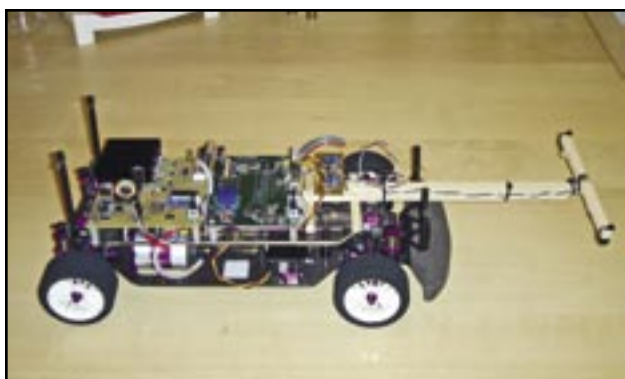
Russ Chadwick is with the National Oceanic and Atmospheric Administration (NOAA).

70 **CNC for Couples** Maker Exhibit

We have a 4ft x 8ft CNC routing table in our small Oakland home, and we'll show you what it can be used for, and how to design things yourself or make copies of something that already exists.

Jillian Northrup and Jeffrey McGrew both have full time jobs, but manage to make time designing and creating things that they wish existed.





228 **Competition-Based Learning: A Robotics Decathlon** Presentation

This roundtable table discussion looks at developing low-cost grassroots robotics programs and the benefits of developing robotics competitions.

Tom Murphy is a theatrical and film actor, mathematician, founder of West County Robotics, and coach of the Hitchhikers Robotics Team.

92 **Computing by Steam** Maker Exhibit

Working Meccano models of Charles Babbage's Difference Engines #1 and #2 will be explained and demonstrated. These machines calculate using the "method of differences," and can tabulate polynomial expressions entirely automatically by turning a hand crank.

Tim Robinson has a strong interest in the early history of computing, particularly mechanical computing devices.

151 **Constellation** Performance

Participants are projected onto a screen and turned into constellations, which track them as they move in real time. Each constellation is given a name, which is often apt (or at least amusing).

Jeremy Fitzhardinge is a multi-disciplinary hacker, creating software, images and art installations.

278 **Control lights and appliances using Express tools** Presentation

This is HOT! Control lights and other appliances through your computer using fast and easy-to-learn tools, like professional programmers use. When the lights come on, your computer will read current headlines!

Sam Stokes is now working with top professors in the Southern California region on how to best use Microsoft software products.

301 **Convert a \$60 wireless router into a \$600 one** Maker Exhibit

Take a common \$60 Linksys WRT54G router and make it into a \$600 router with a free hack. Low-cost wireless access points make deployment of wireless mesh networks very inexpensive.

David J. Kordsmeier is the Executive Director of the United Digital Villages Development Society, a non-profit with the mission of bridging the Digital Divide.

271 **Cornell Lab of Ornithology** Maker Exhibit

From backyards and city streets to remote forests, anyone who counts birds can contribute to the Lab's research. Data from a variety of citizen science projects from the lab are used to monitor bird populations and outline conservation efforts. Stop by and see what our nest box cameras are showing us, and learn about projects you can participate in.

Janis Dickinson is Director of Citizen Science at Cornell Laboratory of Ornithology.

304 **Craftster.org's Kitschy Craft Contest** Workshop

Attendees will be broken up randomly into teams and will be given a surprise grab bag of kitschy craft supplies. The teams will then compete to craft up the best project as determined by Leah Kramer (founder of Craftster.org). The winning team wins some fabulous prizes. No fighting over who gets to take home your team's deliciously tacky creation!

Leah Kramer is a programmer and self-proclaimed craft junkie who has been crafting ever since she could hold a pair of safety scissors.

330 **Crucible's Amazing Fire Truck** Maker Exhibit

The Crucible will be bringing their 'Fire' Truck, the amazing Educational Response Vehicle, which also serves as a platform for teaching welding, torch cutting, blacksmithing and glass flame working workshops.

The Crucible is a non-profit organization that promotes creative expression, reuse of materials and innovative design while serving as an accessible arts venue for the public. Its Executive Director is Michael Sturtz.

120, 246 **Denver Area Mad Scientist Club** Maker Exhibit, Presentation

The Denver Area Mad Scientist Club's projects over the years have included: Kinetics vehicles, Cardboard Derby, Jack-O-Launch, Critter

Crunch, air cannons of various caliber, black powder cannons, tesla coils, Jacob's Ladders, and others. They'll show some of these pieces and photos from the larger projects.

DAMSIC is made up of "the grandfathers of robot fighting," and has been running the Critter Crunch, their robot fighting contest, since 1988.

121 **d.tools for Rapid Prototyping**

Maker Exhibit

d.tools is a hardware and software system that enables designers to rapidly prototype the bits (the form) and the atoms (the interaction model) of physical user interfaces in concert.

Bjoern Hartmann is a PhD student in Computer Science at Stanford. He uses the tools he develops in his research to build experimental musical controllers from time to time.

275 **Dancing4Fun: Building Your Own Dance Game**

Presentation

Learn how to make your own dance pad and how to get started with the Dancing4Fun project.

Ed Kaim is President of SharpLogic Software.

115 **DIY Happy**

Maker Exhibit

Stop by and meet the guys from DIYhappy.com and see how they built an infrared camera mod, custom retro handsets, and a homemade EKG machine.

Jake Haglund is an accomplished researcher in the field of centripetal bumble-puppies, and Sam Garfield is a well known sleep methodology scientist. Okay, they made all that up – they're just two poor college students, alright? Happy?

158 **DIY Modern Plywood Furniture**

Maker Exhibit

Andy Lee wanted to create a set of furniture to use in his everyday life which could easily be fabricated and assembled, look elegant, and could be easily disassembled and stored or transported.

Andy Lee is a passionate engineer/hacker/maker. He's made so many robots he's lost count.

295 **DIY or Die**

Presentation

Michael W. Dean will show his documentary film *DIY or DIE: How to Survive as an Independent Artist*. A discussion will follow. He writes: "I learned filmmaking to create this film, rather than becoming a filmmaker first and deciding later what to make a film about."

Michael Dean created the documentary film *DIY or DIE*. He is also the author of many books including *\$30 Film School*.

39 **DIY RFID Implants**

Presentation

Ever wondered what it would be like to have an RFID tag implanted in you? Mikey Sklar will show you how he did it and discuss what he can do with the implant afterwards. This talk describes where to source the materials, what the implant process lookslike and projects that have come out of this scene.

352 **DIY Touchpanels**

Presentation

There are bunches of ways to make your own touchpanels, running the gamut from cheap to insanely expensive and from delicate to unbreakable. Sasha will cover the different technologies that can be used, and which applications they are most suited for.

Sasha Harris-Cronin works at creating the software and hardware systems for interactive museum exhibits and the UIs and control systems for touchpanel-based AV systems.

85 **DIY Veggie Conversion Kit**

Maker Exhibit

You could order a veggie conversion kit for around \$800, wait several weeks, and install it yourself. Or, like Brandon, you can design and build your own kit from scratch. Brandon will have his car (and kit) on display, and will be giving presentations throughout the day on what went into the actual design, building, and installation of his kit.

Brandon Woll's VW Vanagon now runs on vegetable oil.

239, 238 **Do Robotic Arms Dream of Handling Eggs?**

Maker Exhibit

Can a mechanical arm built from Vex parts pick up a raw egg without breaking it? Note the Vex kit does not come with pressure sensors, so this will take some creativity. Then see Vex Robotics pushed to the extreme with two 4x8 foot oval tracks and a couple of robots so Maker Faire attendees can try their hand at racing around the track.

Tom Murphy is a theatrical and film actor, mathematician, founder of West County Robotics, and coach of the Hitchhikers Robotics Team.

318 **Dorkbot: An Accidental Community**

Presentation

Dorkbot started in New York City in 2000 as a casual meeting of "people doing strange things with electricity." Douglas will talk about the creation of dorkbot, its subsequent spread, and ideas about its future. He will also share some thoughts on why dorkbot has been so (accidently) successful.

Douglas Irving Repetto is an artist and teacher involved in a number of art/community groups including dorkbot, ArtBots, organism, and music-dsp.

154 **Elevator Entertainment Project**

Presentation

Learn how to push a whole new set of buttons with Clint M Chilcott's Elevator Entertainment Project. We'll be learning how to use iTunes, Skype, speaker-phones, and lockpicks to take an elevator ride to the wildside.

Clint M Chilcott is host of the Ominous Moo Podcast, where he shares his love for technology by presenting his off-the-wall inventions and wacky ideas to his viewers.

112 **Embedded RFID**

Maker Exhibit

Amal will display various pieces of hardware that have been embedded or enhanced with RFID technology. He will also discuss embedding and enhancing my own body through implantation of RFID.

Amal Graafstra likes to build his own solutions and integrate existing technologies in new ways.

71 **Enigma 2600**

Maker Exhibit

Overcome by nostalgia, Mark VandeWettering decided to try to learn how to program the old Atari 2600 video game, combining it with one of his other interests: cryptography. The result: an implementation of the German 3 rotor enigma machine that runs on the Atari 2600. Mark VandeWettering is a hopeless tinkerer and gadgeteer, and lately have been enjoying blogging, podcasting, and experimenting with VoIP with Asterisk.

162 **Examples of Robotics Enthusiast Projects at Microsoft**

Maker Exhibit

Stewart Tansley and his Microsoft colleagues will show some of the example hobby robotics and related projects that Microsoft employees get up to in their spare time. These use a diversity of technologies and approaches, and range from the simplest kits and hacks to scratch-built masterpieces of robo-engineering!

159 **Exercise Machine Game Controller**

Maker Exhibit

William Pfeil hacked a game controller using a motion sensor and hooked it up to an exercise machine. The treadmill or bike will control the motion of the player/vehicle in the game.

William Pfeil is just getting into making things, and has found that he has WAY more ideas than time!

242 **Fabricating the Big Blue Bear**

Presentation

We'll show a 25-minute documentary of the making of the 42-foot bear sculpture *I See What You Mean*. Conceptual artist Lawrence Argent's piece started out as six-inch toy bear. A digital file that was then manipulated and scaled up.

Bill Kreysler's Napa-based company, Kreysler & Associates, specializes in large scale sculpture enlarging.

218 **Fencers**

Maker Exhibit

The Fencers are two identical machines, set up so that they face one another. Each machine consists of a 5-foot thin aluminum rod supported in a universal joint, controlled by two variable speed and reversible motors.

Since 1980, Matt Heckert's work has involved machines, robotics and sound. Heckert endows his sculptures with simple motor functions that suggest hysterical or Sisyphean behavior.

342 **Filo's Workshop**

Maker Exhibit, Presentation

Andrew Filo has been designing, prototyping, and manufacturing products for the past 30 years. See examples of the processes that he uses to create prototypes and models, such as resin-molding and vacu-forming. He'll also talk about another passion: Rocket Belts, past and future.

Andrew Filo's goal has been to go from a concept or invention to a reality in the shortest time possible.

43 **Fire Trampoline: The Highlighter**

Maker Exhibit

The High-Lighter is a trampoline-based flame effect. The installation involves a volunteer from the audience jumping on an unmodified trampoline hooked up to an ultrasonic sensor. The harder someone jumps on it, the bigger the flames.

Mikey Sklar and Wendy Tremaine run Escuela Del Fuego, an off-grid school for the making of fire art that uses embedded electronics.

161 **Flock of Blimp Whales**

Maker Exhibit

These three flying objects (Bubba, Flipper, and Habib) exist in a networked environment and communicate through assigned behaviors.

Jed Berk and Nikhil Mitter are currently second year students in the Graduate Media Design Program at Art Center College of Design in Pasadena, CA. Jed grew up in Maine and Nikhil in Dubai.

212 **FlutterBot Robot Workshop**

Workshop

FlutterBot Robots' real talent is in teaching robotics, electronics and C programming to junior high and high school students that want to learn C.

In addition, they turned out to be the perfect platform to introduce electronics.

George Albercook is the co-founder of Rocks and Robots summer camp and inventor of the FlutterBot educational robot.

189, 336 **Free Product ID Codes**

Maker Exhibit, [Presentation](#)

Come meet Ulla-Maarie Mutanen, author of the Crafter's Manifesto and creator of Thinglink, an open database where makers, artists, designers, crafters and other small producers can register and print out unique identifiers for their creations.

Ulla-Maaria Mutanen is a maker and writer living in Helsinki.

132, 131 **Free Radio Berkeley, Antennas 101**

Maker Exhibit, [Workshop](#)

Free Radio Berkeley provides transmitter kits, technical support and training for creating FM and TV broadcast stations and is involved in outreach and organizing efforts. Join Stephen to learn about the theory, design and practical construction of antennas for a variety of applications.

Stephen Dunifer founded Free Radio Berkeley in 1993 to support the free expression of news, information, cultural diversity and artistic creativity.

195 **Full-scale Replica of a DEC PDP-1 Computer**

Maker Exhibit

This is a full-scale, functional replica of Digital Equipment Corporation's first complete computer product, the PDP-1, introduced in 1961. This was the computer on which the first videogame, Spacewar! was developed.

Sellam Ismail builds replicas of ancient computers for museums and runs the Vintage Computer Festival, a celebration of computers and their history.

356 **Fun with Phidgets!**

[Presentation](#)

Phidgets are a collection of inexpensive, programmable devices you control via USB and .NET programming.

Scott Standfield is a proud member of the MSDN Regional Director community and participates in the Microsoft .NET Partner Architect Council.

310 **Futuristic Helicopter**

Maker Exhibit

Come see the scale model of this futuristic Heli Sky Car that can take off and land in your backyard.

Romeo Sean Linn is an inventor. His work can be found on the websites www.CenturyInventions.com and www.HoverCopter.com.

87 **Garbage, Fry grease and Linux**

Maker Exhibit

ACCRC, a non-profit computer recycler from Berkeley, will be providing a *free* e-waste recycling service on both days of the Faire. Nothing is too old, too weird, or too dysfunctional. Usable PCs will be placed in the veggie-oil-powered parallel computing cluster, and later will be used for ACCRC's charitable PC placement program. Interesting gizmos will be made available for hacking by faire attendees, and everything else will be recycled in an environmentally friendly manner.

75 **Giant Electric Giraffe**

[Demonstration](#)

This huge, show-stopping giraffe robot was based on a scaled-up \$20 Tamiya kit described in an article in the first issue of ROBOT on the simplest geometry of legged locomotion. It stole the show at RoboNexus and put a lot of smiles on everyone's faces of all ages.

Lindsay Lawlor is the creator and designer of the Giant Electric Giraffe.

206 **Giant Painting Machine**

Maker Exhibit

Giant Painting Machine is a simple electro-mechanical system built from found parts and scrap materials. It paints complex abstract images by tracing a continuous, cycling path across a large sheet of transparent plastic. We will make one large painting over the two days of the Faire.

Douglas Irving Repetto is an artist and teacher involved in a number of art/community groups including dorkbot, ArtBots, organism, and music-dsp.





373 **Girls in Engineering**

Maker Exhibit

Fun, simple, hands-on experiments to explore and answer basic science and engineering questions..

Barna Ibrahim is an electrical engineer at Intel Corporation and is a member of the Society of Women Engineers.

270, 205 **Golden Gate Raptor Observatory**

Maker Exhibit

Learn about GGRO's programs and check out some of the equipment (both traditional and high-tech) used to study raptors active in the Bay Area.

For two decades, the citizen-driven Golden Gate Raptor Observatory has kept track of the biggest hawk migration in the western US each fall.

187, 293, 292 **Graffiti Research Lab**

Maker Exhibit, [Workshops](#)

During the Faire, members of the Graffiti Research Lab, participants in their LED throwie and Electro-Graf workshops, and interested fair attendees will create a geek graffiti mural consisting of a number of GRL-developed technologies.

The Graffiti Research Lab is dedicated to outfitting graffiti writers, artists and protestors with open source technologies for urban communication.

303 **Grand Idea Studio Open Lab**

Maker Exhibit

Drop in and meet Joe Grand, hacker extraordinaire. In this open lab, he will show you some of the things he's working on, including a new circuit board kit that will allow you to create your own version of the game "Simon." He'll also be teaching a Hands-on Hardware Hacking workshop.

An avid inventor, Joe Grand has been creating electronic devices since he was seven years old and is on the technical advisory board of MAKE.

266 **Hacking Disposable Digital Cameras for Model Rocketry**

Maker Exhibit, [Presentation](#)

John hacked a disposable digital camera and launched it in a model rocket, capturing video from high above his house. He'll show how he did it as well as the video of the launch, which you can also see at his Maker exhibit.

John Maushammer is the hacker who figured out how to make the disposable digital cameras reusable again and is sort of an ex-rocket scientist.

94 **Hacking USB Keyboards**

[Workshop](#)

A hacked keyboard has innumerable uses. You can use it to design a game that puts Dance Dance Revolution to shame, make that pesky old typewriter in the basement USB-compatible, or create the poor man's ultimate home security system.

Randy Sarafan is a tried and true jack-of-all-trades.

244 **Hacks**

Exhibitor booth

Hacks books from O'Reilly Media capture the clever tricks and tips of smart users. Learn more about Hacks books on topics such as Baseball, Flickr, PSP and more.

Brian Jepsen is an editor with O'Reilly Media and a cool hacker himself

107 **Hand Spinning Yarn**

[Workshop](#)

Jamie Chan and members of the Spindles and Flyers Spinning Guild will show you amazing techniques on how to hand spin yarn. Learn how to make your own spindle out of a CDROM and some household items.

Jamie Chan is the owner of MaryJane's Attic, a local craft business that specializes in fiber and printed art.

172 **Handmade 8" Telescope**

Maker Exhibit

Three girls built a 8" Dobsonian telescope for a service project. Since completing the project the girls have won a Merit award and the Astronomer's choice award at the 2005 Riverside Telescope Maker's conference.

Katie Barmazel, Sarah Davis, and Ivy White are Girl Scouts that built a telescope from scratch. They appear in *Makers*.

344 **Herkie: The Flying Pterosaur**

The Stanford Pterosaur Project will show the pterosaur replica that they built for the National Geographic Documentary *SkyMonsters*. They will display the actual replica and provide details of inside components and discuss challenges faced during the project. They hope this exciting project might compel others to study engineering, so check it out!

111 **Highspeed Flash Photography**

Maker Exhibit

Make your own high-speed photographs of a bursting balloon at the Faire. Try out the Andersons' high-speed flash with your own camera. You can also purchase a high-speed flash kit, and finish building it using their tools, right at the Faire.

Tom and Wendell Anderson are engineers who provide experimenters with articles and kits for education and amusement.

80 **Hip Needlepoint**

Workshop

Dolin will give an overview of basic needlepointing techniques and show you how to paint your own canvas to create customized designs.

Dolin O'Shea is a Bay Area crafter and has been creating her own needlepoint for years.

327 **Homemade Microprocessor**

Maker Exhibit

Joe Holt and his students designed and built a homemade microprocessor. They used 1970s era TTL integrated circuits, prototyping boards and lots of wire and LEDs.

Bennington College student Reid Ginoza hails from Hawaii and dances, Eben Packwood likes to read and Angela Traficante designs lights. They've never made anything like this before.

180 **HowStuffisMade (HSIM)**

Maker Exhibit

HowStuffisMade is a visual, internet-based encyclopedia that documents how things are made: the manufacturing processes, labor conditions and environmental costs involved in the production of contemporary products. Most people are not aware of how products are made, including the people who design them.

Natalie Jeremijenko is a new media artist who works at the intersection of contemporary art, science, and engineering. She was featured as the Maker profile in Volume 02.

325 **How-to and Informational Illustrations**

Maker Exhibit

Come learn about an often overlooked part of the making process: being able to explain and share the ideas behind one's inventions with others.

Nik Schulz is an illustrator who straddles the worlds of art and science; he loves to make things and has always appreciated well-drawn instructions.

197 **Howtoons!**

Maker Exhibit

Subversive science for kids: learn how to enter the world of invention with the things they find around them...

Saul Griffith works with the power nerds at Squid Labs and writes cartoons for kids with illustrator Nick Dragotta. Saul is a columnist for MAKE.

258 **If Chips Talked Like Cells**

Presentation

Learn how small, cheap microcontrollers can learn from cell biology to produce a new and more forgiving kind of logic that will be especially attractive to weekend experimenters.

Ward Cunningham, the inventor of the wiki, has been borrowing from the emerging field of systems biology for years.

73 **Improbable Orchestra**

Maker Exhibit

You will need no musical skill to sculpt the Improbable Orchestra's looping audio stream to your liking, creating mash-ups, breakdowns, and possibly even funky jams on the fly. Come by and twist some of our painstakingly soldered knobs!

George Campbell, Josh Steiner, Jake Zweig, Tina Mendez, Nevin Chung, and Candice Lucado made Improbable Orchestra.

364 **Instructables**

Presentation

Whether you make bikes, kites, food, clothing, protocols for biology research, or hack consumer electronics, good instructions are critical. Instructables is a step-by-step collaboration system that helps you record and share your projects with a mixture of images, text, ingredient lists, CAD files, and more.

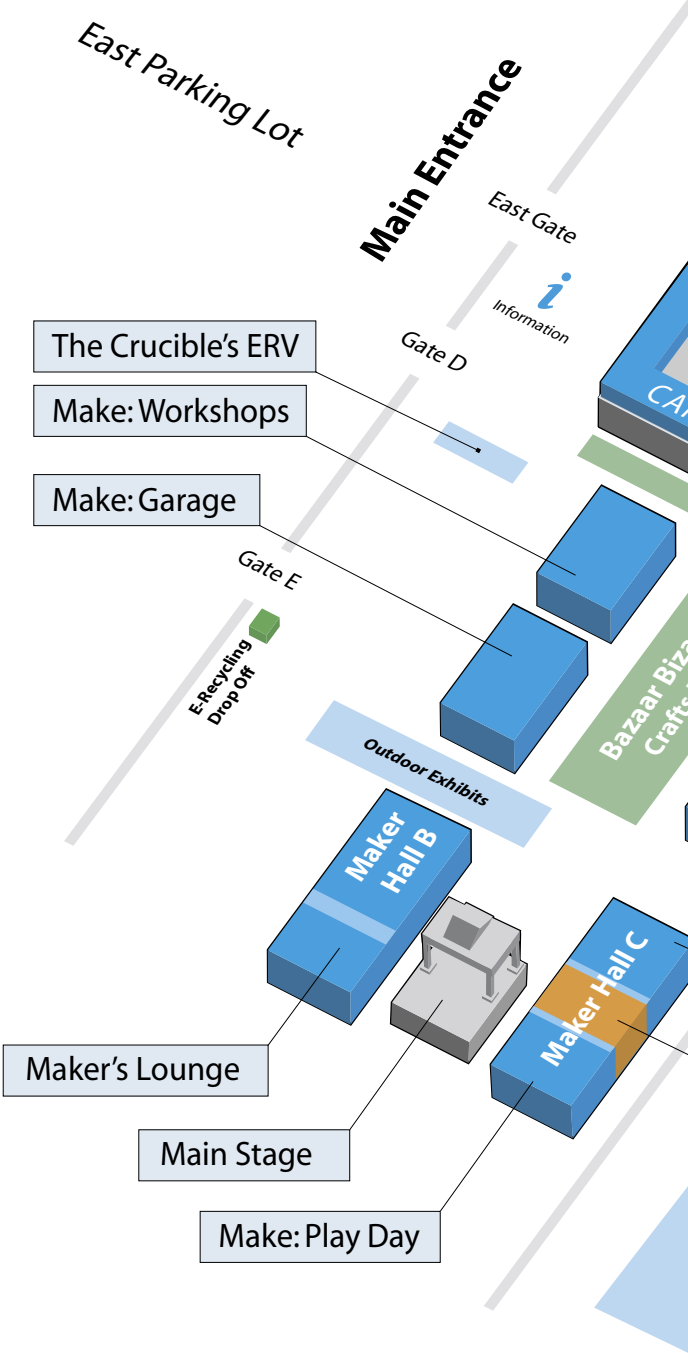
Eric Wilhelm received his Ph.D. in mechanical engineering from MIT and then co-founded Squid Labs. He currently runs Instructables.

150 **Interactive LED Dining Table**

Maker Exhibit

Windell Oskay made a dining table with a frosted glass top lit by 448 multicolored LEDs that respond, in a complex and gentle fashion, to input generated by motion above the table while his family eats.

Windell Oskay is an atomic physicist by training, and has been employed as a quantum mechanic, (atomic) clock maker, and cartoonist.



145 **Introduction to Birding**

Workshop

Learn about birding equipment and gear, web sites, organizations and other resources.

Lisa Myers is the founder of Let's Go Birding, providing opportunities for the beginning/intermediate adult birder to go birding in a non-intimidating atmosphere.

209 **Introduction to Telescope Making**

Maker Exhibit

The Chabot Telescope Maker's Workshop has been teaching telescope making to amateurs since the 1930s. Members of our all volunteer workshops will be available to answer questions, give demonstrations, and show how you can build a telescope of your own.

The Telescope Makers' Workshop is an all-volunteer group committed to helping people build their own telescopes.

331 **IPSwap: A Software Participation Age**

Presentation

IPswap provides a forum for consumers to request and purchase the latest applications for their software-enabled devices directly from developers. We will explain how the IPswap marketplace works and how to use IPswap to request, find, develop, purchase, and sell products.

100 **Kite Making**

Workshop

Kite-making for kids and for grown-ups. Learn how kites work and how to make them yourself.

Tom McAlister is organizer of the Berkeley Kite Festival and owner of High Line Kites.

168 **Knit a Toy**

Workshop

Hang out with Jess Hutch and knit a toy. Jess will provide a pattern, you bring the worsted weight yarn in multiple colors, straight or circular needles appropriate for the yarn, stuffing for the toy, and notions.

Jessica Hutchison knits toys and takes photos of them.

358 **Lady Ada's Super Happy Fun Blinky Workbench**

Maker Exhibit

Join Limor "Lady Ada" Fried who will show some of her projects, including a TB-303 synthesizer clone, animated pac-man wheels, and more! She'll also have inexpensive miniPOV kits on hand for people to build & experiment with.

Limor Fried is an engineer, artist & hacker who develops and builds subversive electronic devices, including glasses that darken near TVs and a cell-phone jamming device.

262 **Location: It's Everywhere**

Maker Exhibit

Maps reflect and create reality. By exploring maps in alternative ways, and looking at our own stories in a spatial sense, we are given the means to play with reality. Oh, and messing about with GPS systems and maps is just fun.

Rich Gibson mucks about with stories, code, maps, and stuff. He is the co-author of *Google Maps Hacks* and *Mapping Hacks*.

142 **Loop.pool: Live Looping with Found and Invented Instruments**

Performance

Rick Walker has toured internationally performing improvisational Found Sound Objects and recontextualizing them into musical instruments, with the help of digital live looping technology.

Composer, multi-instrumentalist and master percussionist, Rick Walker has been on the cutting edge of music for the last 25 years.

76 **Lovie Circuits**

Workshop

SWITCH's Alison Lewis will show you how to make two loving circuits for wearing or plushie dolls. When the circuits are together they magically connect and both light up with a blinking red heart. When apart you can make it light up to remember the one you love, but they are happier together. This circuit can be put inside two hand made plushie dolls, in t-shirts or in accessories like bracelets.

360 **Lunar Society: You Can Be A Rocket Scientist!**

Maker Exhibit

A static exhibit of model and high-power rockets built by members of LUNAR, who will be on-site to discuss the rockets and how attendees can build and fly their own rockets.

LUNAR conducts monthly launches of model and high-power rockets. In addition, they conduct numerous outreach activities with youth groups and schools to promote rocketry.

298 **Machine Science: Putting the "C" in Creativity**

Maker Exhibit

Machine Science will display a number of sophisticated electronic projects, built with the company's breadboard-based microcontroller platform and on-line programming environment.

Machine Science is a 501(c)3 non-profit organization dedicated to supporting hands-on engineering education for students at the middle school, high school, and university level.

313 **MAKE Fashion Show featuring Diana Eng and Emily Albinski**

Performance

In their first fashion show together, Diana and Emily are pleased to also

launch their new collection under their brand “Blackbox Nation.” The duo strives to push forward technology in the fashion world.

Fashion designers Diana Eng (recently of Bravo’s Project Runway”) and Emily Albinski first made headlines when their Inflatable Dress made the cover of ID Magazine last fall.

345 **Make Paper Airplanes**

Workshop

Make your own paper airplanes and try different designs to see which flies best.

Scott Gray is the leader of O’Reilly Learning, a catalog of technical online courses. He enjoys making and flying paper airplanes.

65 **Make Play Day**

Workshop

After wandering around the Maker Faire and getting inspired by all the creative projects you see and creative people you meet, come on over to the Make Play Day all-day workshop and be creative yourself. You’ll find materials and electronics components to create something, and Michael Shiloh will offer guidance and advice and help you make what you design.

Michael Shiloh is an engineer, hobbyist, artist, and educator. He works with foam core, concrete, computers, hot glue, steel, and broken glass.

324 **Make Your Car A Networked Music Machine**

Maker Exhibit

Tom Jennings will show a purpose-built Linux computer embedded in his car, mainly for playing mp3 music. It does real car-compatible power management, and has a human interface appropriate for use while driving.

Tom Jennings is a technician, artist, car mechanic, programmer, whatever it takes...He was featured in *Makers*.

216 **Make Your Own Contemporary Industrial Arts Lamps**

Maker Exhibit

David Goth will show you how to make your own contemporary industrial arts lamps using simple open source design, metal pipe, PVC, ABS, lights (Christmas, LED, otherwise...), and papercrete.

David Goth considers himself a business-savvy Maker with an artistic slant. He seeks to help artists and businesses work together.

186 **Making Instruments, Making Music**

Presentation

A panel discussion featuring musician-inventors who have devised their own instruments, from circuit-benders to contact-mic experts to USB-interface enthusiasts. When the Q&A is over, the musicians will jam.

Chachi Jones, Tom Koch, Mark Weidenbaum and others will participate in the panel.

143 **Marlinespike Seamanship: Fancy Knots**

Maker Exhibit

Learn more about fancy knotwork for both decorative and practical applications. Get your hands on some rope and learn a few tricks!

Tim Allwine grew up working on boats. Today, he’s a Senior Software Engineer with O’Reilly Media where he untangles intricate problems.

169 **Mechanical Frog Dissection**

Maker Exhibit

Functional Dissections uncover the functional beauty and mechanical elegance hidden within the products around us. *Ambidextrous* magazine will host an on-going participatory Functional Dissection of a variety of wind-up toy frogs.

Ambidextrous, a project of the Stanford d.school, is a magazine for the wider community, exposing the people and processes involved in design.

296 **Mobile Movie**

Maker Exhibit

Bryan Kennedy started the mobile movie movement (mobmov.org) one year ago. He installed a projector, DVD player, and FM transmitter in his car, and announces the showing via online mailing list. People drive to the appointed wall, and watch a movie projected on a dark warehouse wall, drive-in style from their cars. Each showing now draws about 35 people.

Bryan Kennedy is a 25 year-old entrepreneur.





361 **Modern High Speed Stirling Engine**

Maker Exhibit

Several Stirling engines and components will be exhibited. The largest will be the model TESE002 single cylinder engine with its dynamometer and some test equipment. This engine has produced over 600 Watts (2/3 horsepower) while burning propane fuel.

Donald Isaac's interest in Stirling engines originated during design and fabrication of a Stirling cryocooler displacer assembly in the early 1990s.

277 **Monitor and Control an Aquarium**

Presentation

Using a wet and wild approach, we will show you how an aquarium will be able to simulate tides, change chemical levels, and maintain the records of the water temperature. You will be able use a computer to feed fish and change fertilizer in a hypophonic tank.

Sam Stokes is now working with top professors in the Southern California region on how to best use Microsoft software products.

137 **Monome**

Maker Exhibit, Performance

Monome is a group of people creating versatile hardware interfaces which emphasize user adaptability. Their first project is a grid of tactile pushbuttons with internal LEDs, which are independently programmable, allowing for a wide variety of responsive applications, including performance.

193 **Mowbi – A Robotic Lawn Mower**

Maker Exhibit

As an example of making a low-cost entry for a complex robotic platform, Jack Creasey will show his "Mowbi" platform, based on the Friendly Robotics RL550 Lawnmower with a small laptop as the controller.

A tinkerer for many years, Jack Creasey started as most young guys do, building and flying model aircraft.

250, 251, 252, 253 **Mr. Jalopy's Garage**

Maker Exhibit, Workshops

Mister Jalopy's Garage will feature junk cars, boombox televisions, the World's Largest Ipod, the \$15 close-up photography rig, sheet metal punching and riveting and the velvet pagoda lanterns converted to run off a remote control battery. Make sure to stop by his workshops on fixing up old cars and sheet metal work for fun. He'll also be talking about the Maker's Bill of Rights.

Mr. Jalopy is a regular contributor to MAKE.

362 **Multi-colored Touchpad and Network-Controlled LED Lamp**

Maker Exhibit

The LED Lamp addresses the desire to easily create different lighting scenarios depending on the mood of its user or functional requirement of a task. The tactile sensation of using the touchpad linked with immediate feedback from the multi-colored light clusters provides an entertaining and educational exploration of light.

Alexander Haubold a hardworking Computer Science PhD student at Columbia University by day and an enthusiastic creative inventor by night.

96, 334 **Musical Instruments**

Maker Exhibit, Performance

for the Motorcycle Enthusiast

Learn the history and evolution of the motorcycle upright bass and enjoy an eclectic musical performance. Ezra Daly on Motorcycle Bass, Nick Mitchell on Ukulele and Todd Smitherum on Xylophone.

Ezra Daly built the first motorcycle bass, the Frankenbass, out of necessity in 1996. Since then, he has provided both motorcycle instruments as well as music from the bands who play them.

138 **Mycology Workshop**

Workshop

Artist, educator, and mycologist Philip Ross will teach a workshop for beginners on growing mushrooms.

Through the design and creation of highly controlled environments Phillips Ross manipulates, nurtures and transforms a variety of living species into sculptural artifacts, much as one might train the growth of a Bonsai tree.

368 **Nekyia Dance**

Performance

The Nekyia Performance uses dance, music, and fire to explore the lands below reality: our inner labyrinth of emotion, instinct, and spirit. Based in San Francisco, The Nekyia finds common expression in dance and music traditions from all over the world.

264 **Neon Art Shop**

Maker Exhibit

Neon glass bending techniques will be demonstrated using a set of portable cross fires. Neon artwork will be on display, and a video will explain "How Neon Works."

Shawna Peterson is a neon glassblower with a small one-person shop in Oakland. She makes her own artwork with neon and old signs, and also bends commercial neon work.

265 **New Technology for Live Visuals**

Performance

Join award-winning VJ Grant Davis for an introduction to live video hardware and software, and a rundown on the latest gear.

Grant Davis is a creator of immersive environments. He was recently voted the #6 VJ Worldwide and the top VJ in North America by the UK edition of DJ Magazine.

286 **Night Vision Viewer**

Maker Exhibit

Come see a demonstration of Greg Miller's home-made night vision viewer built mostly from scrap parts he found in dumpsters. He'll also be showing an electromagnet accelerator (coil gun, gauss gun) that shoots bits of nails by quickly releasing energy stored on a capacitor bank.

Greg Miller's hobbies include 'messing about' with high voltage, dumpster diving and fishing for sharks from his kayak. He is employed as an engineer at a solar cell start-up company, Nanosolar.

215 **Niles Monorail: World's only backyard monorail!**

Maker Exhibit

Come see a home-built monorail train featured in the first issue of MAKE Magazine and in various other publications and on TV. A two-car train will be on a track stand approximately nine feet long.

Kim Pederson is a monorailist, artist, pilot, employee of City of Fremont, and owner of MyPacifier.com.

383 **OpenDorkbot**

Presentation

Come see a variety of unusual projects from Dorkbot/SF.

Karen Marcelo is the organizer of Dorkbot/SF. Douglas Repetto is the founder of Dorkbot.

367 **Own Your Own Cell Phone**

Presentation

We will discuss building your own cell phone along with a demonstration of the Port-O-Rotary cellular rotary phone. Topics on elusive technologies like GPS and Bluetooth will be boiled down and shown just how easy it is to play with old and new technologies.

Nathan Seidle is president of Spark Fun Electronics, creator of the Portable Rotary Phone, and inventor of the hot-skillet reflow technique.

192 **Perpetual Pinball Machine**

Maker Exhibit

Michael Scheiss built a demo table to demonstrate pinball mechanisms and circuits to his classes, and it eventually became a game in itself. He uses it to spark an interest in the science and art of pinball.

Michael Schiess is an artist/inventor who runs the Lucky Ju Ju Pinball Gallery in Alameda.

339 **The Phenomenauts**

Performance

Imagine if the The Kinks, Devo, Stray Cats and The Ventures were galactic pioneers and joined forces to defend earth's right to rocket roll.

Combine a fast driving blend of punk, pop, rockabilly, solid songwriting and a smart Sci-Fi theme and you've got one of San Francisco's most talked about bands, The Phenomenauts. "

369 **PhotoPoof**

Maker Exhibit

A photo booth that captures the look of surprise when a flame ball is substituted for a flash.

Jon Sarriugarte and Kyrsten Mate will operate PhotoPoof. Alec Bennett is the founder and creator of PhotoBoof, the predecessor to PhotoPoof.

86 **PIE at Exploratorium's Toy Automata Workshop**

Workshops

In this open workshop, developed by the Playful Invention and Exploration program, learn to create working automata out of simple parts and hot glue. Toy automata are delightful, wind-up or hand-crank machines that preceded the age of electronic toys.

380 **Pinball Restoration & Maintenance**

Maker Exhibit

Come play a couple of restored modern pinball machines and learn about pinball restoration and all of the cool bits of technology that could be broken out of a pinball machine for real world projects.

To keep from boredom, Bill Bumgartner generally tries to make things do what they weren't designed to do.

164, 163 **Pinhole Camera and Cyanotype Intensive Workshops** Workshops

Every participant will construct a lensless camera from light-tight containers of your choice, and you'll test, expose, and process a negative taken with each camera in a darkroom set up at the Faire. Participants may also want to sign up for the cyanotype workshop in order to make a (blue) print from their negative.

Artist Eric These works in film, photography, printmaking, and the book arts, often dragging techniques kicking and screaming from one media to another.

183 **Portable Outdoor Sound Art System for Under \$100, or, "Did You Hear That?"** Maker Exhibit

When asked to install a 2-channel soundscape in a public park, Karyl Newman had to figure out how to do it herself. The end product has tons of fun applications, and recording your sound piece is fun, too.

Karyl Newman's DIY aesthetic is the wonder of her friends and family as she consistently figures out ways to realize her ideas or theirs.

198 **Power Tool Drag Race Preview** Maker Exhibit

Every year in San Francisco, Chopped Chainsaws and Supercharged Speed Wrenches go head-to-head down 75 feet of two-lane blacktop at ACE International Speedway (aka ACE Junkyard). While the races are in May, the machines and part of the track will be on display at the Maker Faire!

128, 337 **Precision Woodworking for Puzzles** Maker Exhibit, Presentation

Come look at Lee's intricate puzzles and learn about the manufacturing techniques and the custom-built tools and jigs that he uses in his work.

Lee Krasnow is widely regarded as one of the finest craftsmen and designers of mechanical puzzles alive today.

202 **Print with Gocco** Workshop

Jill Bliss will show you the ins and out of this cult printing favorite. Learn the basics on how to print your own cards, posters, and more.

Jill Bliss has an unwavering enthusiasm and dedication to process-oriented arts, crafts and design coupled with a love of reused materials, collaboration, and attention to detail.

299 **Processing Workshop** Workshop

Processing is an opensource programming language and environment for people who want to program images, animation, and sound. Participants in this workshop will learn to create an interactive graphical application ready for viewing online.

243 **Radio of the Future** Presentation

The Software-Defined Radio is the crystal radio set of the 21st century. Learn how it works with free and open source software.

Matt Ettus is a wireless communication system consultant, living in the Bay Area. He is an amateur radio operator and amateur radio astronomer.

232 **ReadyMade Magazine** Maker Exhibit

Mod your pod and make some time. *ReadyMade* Magazine shows you how to make a homemade amp for your iPod and a George Nelson-style clock out of chopsticks. ReadyMakers are on hand to inspire you to turn everyday objects into spellbinding inventions. Free copies to all who stop by!

Darci Andresen is the Marketing Director of *ReadyMade* Magazine and Mike Senese is the Product Manager

89 **Real Virtual Car** Maker Exhibit

Since Yuval Tal and Zvika Netter cannot bring a car with them, they will show gauges of a real car and connect it to their game. They will also show some videos and pictures of the real virtual car.

Yuval Tal and Zvika Netter are engineers, geeks, and gadgeteers in Israel. As Seen in Makers!

282 **Real-Time 3D with Managed DirectX** Presentation

This session will provide an overview of .NET development with Managed DirectX, specifically for real-time 3D rendering and games. We will cover implementation details of a .NET game engine as well as aspects of 3D development, such as scene management and collision detection.

Jason Mauer is a Developer Evangelist with Microsoft covering the Pacific Northwest.

105 **Red Eye Goggles** Maker Exhibit

When you put on the goggles and look at the eyes of another person, you'll see real-life red eye, the kind normally only seen in flash photography.

Rebecca Hinden of Onomy Labs is a recent art school graduate who is ready to break out into the art/nerd scene and show her stuff.

156 **Relief Sculpture in Light** Maker Exhibit

This process started as the ultimate way to carve a jack-o-lantern, but other materials can be used with a light-box to great artistic effect. Aaron will be in the process of carving one during the exhibit just to show how fun it is.

Aaron Michels is primarily a documentary video-maker and video artist, but he can't help himself from straying into other media..



248 **Ribbon Dancer**

Maker Exhibit

In preparation for a large-scale installation at the Science Center of Iowa this summer, Bruce Shapiro built a number of prototypes of a device he calls "Ribbon Dancer." This thing is jaw-droppingly beautiful in action.

Bruce Shapiro has been building progressively larger and more complicated motion-control devices as public artworks which have been installed in U.S. science centers as well as in Europe.

377 **Rise and Fall of Chance**

Maker Exhibit

The challenge is to send a HUGE inflatable 8-ball up and down in the air activated by...a cell phone! Michael Balsamo and Evan Small had two weeks and under \$200 to get the job done, so most of the parts were scavenged.

Two Mechanical Engineers who hail from the east coast wanted a paradigm shift, so with the shaking of the 8-Ball, they decided to head west to Stanford to get Master's degrees.

160 **Robotica Insectus: Insect-based Robots**

Maker Exhibit

Solenopsis Invicta (red imported fire ant) is a fire-fighting robot that uses simple wall hugging algorithms to navigate a maze (a house) and find a candle with its olfactory senses (a sensor to detect chemical molecules). Tony will be showing this off as well as his other insect-inspired robots.

Tony Pratkanis' robot, Solenopsis Invicta, won the gold medal in the fire-fighting contest at the 2005 Robogames in San Francisco, CA.

144 **Scattered Light**

Performance

Scattered Light is an acoustic/electronic musical duo that combines folkie acoustic guitar with suitcases full of circuit-bent goodness.

James Marks' quest to make music with the least money outlay possible has led to a history of broken toys, circuit-bent alarm clocks, tape loops, and dumpstered guitars.

177 **Scientific Frolick**

Maker Exhibit

A selection of exhibits from a science fair as it would have been done in the early 1800s. May include plans for the first submarine designed by Mr. Robert Fulton, the science of mesmerism, creating life after the theories of Dr. Frankenstein, carnivorous plants and/or the art of leechcraft.

The Bay Area English Regency Society celebrates the spirit of the early nineteenth century, a spirited time bubbling over with creative energy in the arts and sciences.

211 **Sibling Intrusion Detector (SID)**

Presentation

This talk will show you how to build a simple intrusion detector. When a person breaks the beam from a laser pointer, a digital key-chain camera silently takes their picture.

George Albercook, who teaches science and technology classes to homeschool students, is the co-founder of Rocks and Robots summer camp and inventor of the FlutterBot educational robot.

166, 256 **SFLan and Community Wireless**

Maker Exhibit, Presentation

Imagine the Internet with no strings or wires attached! We'll give you an overview on how you can build and participate in community wireless networks. If you live within Line-of-Sight of SFLan's network, you'll even get the Internet access for free.

Ralf Muehlen builds large-scale wireless networks in the San Francisco Bay Area and the Black Rock Desert.

321 **Silicon Valley Aftershocks: Segway HT Polo**

Maker Exhibit

The Bay Area Segway Enthusiasts Group started playing Segway Polo in July of 2004 and formed the Aftershocks team for the First World Segway HT Polo Games of 2006 in Auckland, New Zealand.

The Bay Area Segway Enthusiasts Group was formed in September of 2003 to increase knowledge and public acceptance of the Segway HT.

78 **Silkscreening Basics**

Workshop

Have you always wanted to make your own designs and print them? Get a basic overview of how to make a silk screen using the photo emulsion process.

Kirk von Rohr is Art Director of MAKE Magazine and will be sharing his silk-screening knowledge in CRAFT Magazine.

382 **Simple Single-Signature Book**

Workshop

Learn a simple bookbinding technique that will allow you to quickly create books from standard letter-sized paper. This design is perfect for any small, single-signature book, such as a journal, zine, or guest book.

Francois Paultre is a manager at Paper Source, one of the premiere sellers of fine papers from around the world. In his limited spare time he draws & publishes comic books.

276 **Skype Home Automation**

Presentation

We'll take a look at the Skype Home Automation project, and learn how to maintain control of your home from abroad, across the Internet and through firewalls, for turning off a stereo or checking the temperature.

Richard Davis is a software design engineer at SharpLogic Software, playing a key role as the primary developer on many projects.

263, 285 **Slide Rules**

Maker Exhibit, Presentation

The title should be something like "Slide Rules -- The World's Handiest Calculators for 350 Years" or perhaps "Slide Rules over the Centuries." Come see a display of classic slide rules and a talk about their history.

Tom Wyman and Rodger Shepherd are members of The Oughtred Society, an organization dedicated to the preservation and history of slide rules and other calculating instruments.

338 **Speaker Guy: Subwoofer in an Ottoman**

Maker Exhibit

John Guy built a subwoofer into an ottoman to show that speakers do not have to be limited to conventional form factors. Come hear why he thinks that speaker building is one of the few areas in Hi-Fi where the DIY type can easily out do off-the-shelf for less money, and with a high likelihood of success.

John Guy is a hobbyist, a woodworker, a weekend warrior, a kludger, an applications engineer, and a somewhat reformed pyromaniac.

123 **Software-Defined Radio**

Maker Exhibit

Learn what Software Defined Radio is, why it is useful (especially for hobbyists and amateurs), and how to get involved.

Matt Ettus is a wireless communication system consultant, living in the Bay Area. He is an amateur radio operator and amateur radio astronomer.

119 **SparkLab: DIY Wearables**

Maker Exhibit

SparkLab encourages a new methodology for assembling electronic circuitry which merges sewing techniques with electronics. Wires are substituted for conductive thread, snaps for solder joints and connection points, and everyday silk organza is used as the conductive medium.

Syuzi Pakhchyan's designs explore and encourage ludic activities that whet curiosity and celebrate the quirky and speculative.

170 **Sparky - Gomi Robotics**

Maker Exhibit

Using found objects, technologies and materials scavenged from dumpsters and garage sales, Sparky offers 2-way wireless face-to-face interaction and control from a remote location.

Marque Cornblatt's robots, installations and kinetic/video sculptures have been exhibited at the SF MoMA, San Jose Museum of Art, and at galleries throughout California and New York.

110 **Spelunking The Technology Underground**

Presentation

We'll visit the radical, technological, self-expressive world of the Technology Underground, inhabited by ardent amateurs who can teach us much about science and technology.

William Gurstelle is the author of *Adventures from the Technology Underground* and is on MAKE's Advisory Board.

307 **Squid Labs: Laser Cutter, SmartRope and Instructables**

Maker Exhibit

Come join Squid Labs as they engrave pumpkins, make origami, design microfluidic chips, and anything else that they happen to come up with while they fool around on the laser cutter. Oh yeah, and they'll also have some really big kites!

Squid Labs develops breakthrough technologies and finds solutions to unique engineering problems.

366 **SS Alpha Fox**

Maker Exhibit

Alpha Fox is a former civil service vehicle morphed into a giant child's toy: a small rocketship that evokes exploration as well as the comforts of a past pop-culture-infused childhood. It is a vision of what its makers thought the future would look like.

Jon Sarriugarte designs & makes steel furniture with a blacksmith

flavor. He's been with SRL for 15 years. Kyrsten Mate is co-builder of Alpha Fox with Rich Sciortino, a graphic designer.

315 Stanford Smart Product Design Lab

Maker Exhibit

The Stanford University's Smart Product Design Lab Robot Shoot-out is a hockey-style shoot-out competition between two fully autonomous wheeled robots.

The design teams are made up of current first and second year grad students from the Design Division of Stanford's Mechanical Engineering Department.

233 Steam-Powered Robots

Maker Exhibit

Radio-controlled robots powered by miniature, live steam engines.

I-Wei Huang is an artist/ animator working in the video game industry, with a passion for making creative steampunk machines.

255 Surf and Turf

Maker Exhibit

Todd Harrison and his daughter Veronica wanted a pool heater, so they assembled 180 feet of copper pipe that fits into our backyard barbeque grill.

Todd Harrison has a BS in Engineering Physics which he has never professionally used outside his garage. Veronica Harrison is an 8th grader and apprentice tinkerer.

328, 329 Surfrider Foundation

Maker Exhibit, Presentation

The Surfrider Foundation works to protect our oceans, waves, and beaches. A small group of activists created a chapter of the Surfrider Foundation which has several successful programs including its own water quality testing program and lab.

Surfrider Foundation's most important work is carried out by chapters located along the East, West, Gulf, Puerto Rican, and Hawaiian coasts.

351 TechShop

Maker Exhibit

TechShop is the name of a new project to build a non-profit open workshop environment for the use of inventors, hackers, weekend warriors, entrepreneurs, middle school and high school students, parents and kids, and, of course "makers"!

Jim Newton is an avid inventor, and has been a maker since he was about 8 years old.

284 The Ultra Mobile PC

Presentation

The Ultra-Mobile PC is a new kind of computer. With small, lightweight, carry-everywhere hardware designs, you can connect and communicate, accomplish any task anywhere and at any time, and be entertained and informed wherever life takes you.

Todd Landstad is a Lead Software Design Engineer in Test for the Microsoft Tablet PC Platform API team.

230, 229 Thimbletron

Maker Exhibit, Performance

If anyone could be the MAKE house band, The Evolution Control Committee would be first in line. Come check out The Thimbletron, an instrument with ten sewing thimbles and too much exposed wire; hacked-up MIDI keyboards, and gigabytes of audio and video copyright infringement — all live on stage.

297 Thrift Store Felting

Workshop

Learn to create beautiful customized garments and other items out of even the most tattered wool pieces. Topics covered may include felting techniques, recycling yarn from thrift store sweaters, embroidery, sewing knitted fabric, steeking, dyeing and using add-ons such as grommets, beads and buttons.

Shannon Okey is from the site knitgrrl.com.

146 Tim Anderson's Heirloom Technology

Presentation

Tim Anderson talks about his visits to China, Guatemala, and various islands in the South Pacific. He will show examples of interesting technologies that are adapted to local needs. He will also talk about his various attempts to build a boat and sail to Cuba.

Tim Anderson is the author of MAKE's Heirloom Technology column.

365 Times Square meets Calder meets Playskool Activity Center

Presentation

Science, Mobilized is a large-scale piece of functional art conceived as a way of bringing day-to-day developments in science to a public atrium space.

Scott Minneman is a principal at the Make Tank called Onomy Labs. He thinks with his hands.

188 TinyOS Toys: Fun with Wireless Sensor Networks

Maker Exhibit

TinyOS is an open-source operating system for programming ad-hoc mesh networks. We will demonstrate an LED POV device that can be updated wirelessly, games based on proximity and node inclusion/exclusion, and nifty tricks to be done between a computer and a few Telos Motes (an open source wireless system platform).

Dan Steingart is a grad student in materials science and engineering.

269 **Trailer-Glass Blowing**

Maker Exhibit

Doug Brown was blowing glass at facilities that had the usual rate per hour of \$40-\$45. Ouch! Despite the difficulties, he figured out how to build a propane-fired system and an annealer that work on a trailer.

Doug Brown is a glass blower, real estate broker, and mortgage broker

114 **Trampoline Simon**

Maker Exhibit

Alec Bennett shows off his Simon game played on 4 mini trampolines. Lights under the trampolines show the pattern, then the person jumps on the trampolines to repeat it.

Alec Bennett is the creator of the Trampoline Simon.

340, 179 **Trompetelichter Jazz Combo**

Performance

Come see the Trompetelichter On-Brass Optical Entertainment system in action, playing as part of a live jazz combo. It's the most tacky-yet-amusing innovation in musical instruments since the inception of key-tar!

Jon Liang is a local San Francisco Bay Area student, musician, and fellow maker.

347 **Tulley's Tinkering Challenge**

Tulley's Tinkering School presents "The Tinker Challenge." It's up to you to build the fastest pile of junk on the watertrack in a head-to-head contest to determine who is the top materials hacker. The winner gets a prize, and everyone gets to keep their creations.

Gever Tulley founded the Tinkering School because he felt that kids were losing the opportunity to fool around in constructive ways.

236 **Ultrasonic Rangefinding Distance Device and Alarm**

Workshop

Using the Ping (a pre-calibrated, pulse-width output ultrasonic range-finder) sensor on a BASIC Stamp board, you will build and program a distance detection alarm system.

90 **Unusual Home Built Bicycles from wood and salvage**

Maker Exhibit

Here are some unusual home-built bikes made from fence posts, drift-wood, plywood, scooters, skis etc. Since his first wooden bike, he's built a dozen different bikes including recumbents, tandems, compact bikes, high-wheelers, convertables and a lawn mower bike.

Tom Kabat is a 46-year old bicycle enthusiast whose hobby is building unusual bikes from salvaged materials.

280 **Using PC technologies in Robots for Teaching Computer Science**

Presentation

This talk will focus on what we have learned about robotics in computer science, what are the challenges, and how we plan to work with academia to take things forward, leveraging the massive economies of scale found in the PC industry to bring compelling robotics into the CS classroom and perhaps beyond.

Stewart Tansley is responsible for Robotics and Embedded Systems in Microsoft Research.

203 **Vacuum Forming**

Workshop

Designer Emily Albinski will teach you the basics of vacuum forming, a craft that involves molding plastic. See the entire process in its standard use, and find out how this could be replicated at home.

Emily Albinski is a designer based in New York.

319 **VJ Battle**

Performance

Watch VJs compete head-to-head to create live, four-minute video mixes that capture the spirit of the Maker Faire. Marvel at the freshest, most gripping live visuals you've never seen before, cooked up by the Iron Chefs of visual culture.

VJ Battle organizer Paul Spinrad is Projects Editor, MAKE magazine.

219 **VJ Franz K and Cypod**

Performance

VJ Franz K plays live video using laptops, a camera, and Edirol V4 mixer. Beau Casey (aka Cypod) uses the open-source object-oriented graphical programming software pure data (PD) to create custom VJ software that uses various image processing techniques.

Franz Keller (VJ Franz K) is part of the new breed of Audio/Visual improvisers.

220 **VJ Mikal Carter**

Performance

The Fine Art of Live Visuals. Moving wallpaper or High Art? Today, the tools for live video are available to everyone. Join Sunshine and find out what the big deal is, or just pick up some tips for your next all-night party!

Mikal Carter Sunshine is an Oakland-based videomusic artist. His compositions have been performed throughout the Bay Area.

221 **VJ Stefan G**

Performance

VJ Stefan G mixes with material that spans the history of live video, from early tape experiments to Fairlight CVI and Video Toaster footage, to forbidden "copyrighted material from current big-name tours."

Stefan Gosiewski is a VJ pioneer.

185 **Watch Box**

Maker Exhibit

The “Watch Box” is a standalone device originally designed to protect boats and RV’s; the invention has evolved into a programmable, interactive protection device.

Brian Benson has been working in the electronics field for over 28 years. He is now working in an Advanced Development Laboratory at a Semiconductor company.

359 **Wearable Light Bracelet**

Workshop

The Wearable Light Bracelet workshop will show you how you can make an LED bracelet. The main focus of workshop will be to learn how to sew the LED circuitry.

Syuzi Pakhchyan’s designs explore and encourage ludic activities that whet curiosity and celebrate the quirky and speculative.

257 **POV-Ray for Mere Mortals**

Presentation

Windell Oskay will give a tutorial on technical graphics with POV-Ray, a free cross-platform 3D ray tracing application with a text-based interface--essentially a programming language for graphics, which makes it ideal for technical illustrations, simulations, and virtual prototyping of projects.

An atomic physicist by training, Windell Oskay has been employed as a quantum mechanic, (atomic) clock maker, and cartoonist.

346 **What Will Your Book Be?**

Presentation

Blurb’s publishing service is simple and smart enough to make anyone an author. (This means you.) Experience a detailed walk-through of the full book-making process with Blurb’s BookSmart software.

247 **Wind Energy from Bicycle Wheels**

Maker Exhibit

See two different versions of bicycle-wheel windmills that demonstrate several different approaches to capturing wind energy.

Ted Baer has been working on light-weight, inexpensive wind energy devices made largely from bicycle technology and other off-the-shelf components for over 20 years.

210 **Wireless Swimming Pool Fill System**

Maker Exhibit

This system monitors the water level of a swimming pool and when action is required, sends information so that a fill valve will open. Then it detects when the pool is full, causing the valve to close.

Chuck Heger has been an electronics engineer for 35 years. He also has a home lab and shop, and enjoys designing solutions to domestic problems

335 **Workshop from a Parallel Universe**

Working under the name Eccentric Genius, Kaden combines improvisation and craftsmanship to create unusual versions of well-known objects as well as distinct creations all his own. Among the things he will exhibit are a carrot-chopping Guillotine and a Mechanical Theremin.

Kaden Harris builds antiques from a parallel universe where Leonardo Da Vinci, John Cleese and Jimmy Neutron spend every Tuesday night playing poker with Sherlock Holmes.

268 **Zach’s Cool Stuff**

Maker Exhibit

Join Zach and his students as they show off their cool creations. Get “hands-on” and make an exact copy of your finger using liquid plastic.

Zach Radding is an engineer, instructor and builder of cool stuff. He lives in Berkeley, CA.

104 **Zeum Stop-Motion Animation**

Workshop

Come by for a few minutes to add a few seconds to a collaborative, all-day project in stop-motion animation. It will star objects you find around the Faire and clay-characters you build yourself.

Zeum is San Francisco’s arts and tech museum for kids and families.

72 **Zigbee Revealed**

Maker Exhibit

Zigbee is a developing standard (805.15.4) for home automation and personal wireless networks. Experience Zigbee first-hand with demonstrations of a developer kit. Run through a typical device life-cycle sequence, and see the results in a Zigbee packet sniffer.

Until last year Jeff Williams only wrote software, that is, until he discovered the joy of making 802.15.4 wireless devices.

98 **Z’s Stop-Frame Animation**

Workshop

To make a stop-frame animation, an object is moved a little bit, photographed with a digital camera, moved some more, then photographed again. When the photos are played back in quick succession (e.g. 5 pictures per second), the object appears to move by itself.

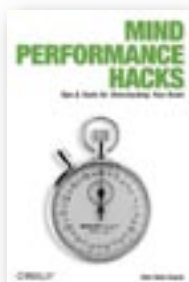
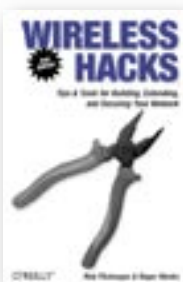
Thomas Zimmerman is a Research Staff Member in the USER Group of the IBM Almaden Research Center, working on new human/machine interface devices and paradigms.



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* if you happen to use
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Saturday

Maker's Lounge

VJ Mikal Carter (live video)	12:00 PM—1:00 PM
Agents Del Futuro	1:00 PM—2:00 PM
Constellation	2:00 PM—3:00 PM
Scattered Light	3:00 PM—4:00 PM
Thimbletron	4:00 PM—5:00 PM
Musical Instruments for the Motorcycle Enthusiast	5:00 PM—6:00 PM

Main Stage

Ballistic Cats	2:00 PM—4:00 PM
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Saturday Evening Special Event

This event runs from 6 to 9 pm, with performances beginning on the Main Stage

MAKE Fashion Show featuring Diana Eng and Emily Albinski

The Phenomenauts

Plus, our special fire acts, which take place in the Make Way area of the parking lot.

The Nekyia Dance

The Fire Trampoline

by Mikey Sklar and Wendy Tremayne

Lucy Hoskins' Satan's Calliope

The Crucible's ERV



Sunday

Main Stage

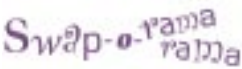
Trompetelichter Jazz Combo	11:00 AM—2:00 PM
Broker/Dealer	2:00 PM—3:00 PM
Rick Walker/Loop.pool	4:00 PM—5:00 PM

Maker's Lounge

VJ Stephan G.	10:00 AM—11:00 AM
VJ Franz K (live video)	12:00 PM—12:30 PM
Brian Crabtree and Peter Segerstrom	12:30 PM—1:00 PM
New Technology for Live Visuals	1:00 PM—2:00 PM
Trumpet Mounted LED Display (Trompetelichter)	2:30 PM—3:00 PM
VJ Battle	3:00 PM—5:00 PM

Make Theater

Bubbles Within Bubbles	1:00 PM & 3:00 PM
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At Swap-O-Rama-Rama, you will trade in your unloved items for over 5,000 lbs. of "new to you" clothing that you'll transform through the communal process of reuse.

Wendy Tremayne is a conceptual artist and event producer. She designed Swap-O-Rama-Rama to de-popularize consumption and transform consumers into creators by developing community to explore creative reuse through the transformation of used clothing.



The Bazaar Bizarre craft fair is coming to Maker Faire! Event founder Greg der Ananian says, "Dissatisfied with stencils of country ducks and painted wooden slices of watermelon, I decided to use what I'd learned as a child to express my own interests. To my surprise and delight, a lot of my friends were experiencing the same kind of personal renaissance. How exactly to share these *objets de craft* was a project upon which we embarked. The result? Bazaar Bizarre." bazaarbizarre.org

Saturday

DIY Theater

- | | | |
|-----|---|-------------------|
| 205 | Half a Million Hawks Later
Humans Tracking Raptors
at the Golden Gate
Allen Fish | 10:30 AM—11:00 AM |
| 110 | Spelunking The Technology
Underground Talk
Bill Gurstelle | 11:00 AM—11:45 AM |
| 267 | What Makes Atomic Clocks Tick?
Windell Oskay | 12:00 PM—12:30 PM |
| 243 | Radio of the Future
Matt Ettus | 12:30 PM—1:00 PM |
| 225 | How Swimming Like an Otter Got Me a Job
at NASA's Jet Propulsion Laboratory
Dan Goods | 1:00 PM—1:30 PM |
| 246 | Denver Mad Scientists Club
John Morse | 1:30 PM—2:00 PM |
| 258 | If Chips Talked Like Cells
Ward Cunningham | 2:00 PM—2:30 PM |
| 336 | Thinglink: IDs For Things You Make
Ulla-Maaria Mutanen | 2:30 PM—3:00 PM |
| 249 | The Art Of Motion Control
Bruce Shapiro | 3:00 PM—3:45 PM |
| 337 | Precision Woodworking Techniques
for Interlocking Puzzles
Lee Krasnow | 4:00 PM—4:30 PM |
| 295 | DIY or Die
Michael Dean | 4:30 PM—6:00 PM |

MAKE Theater

- | | | |
|-----|---|-----------------|
| 266 | Hacking Disposable Digital Cameras
for Model Rocketry
John Maushammer | 1:30 PM—2:00 PM |
| 367 | Own Your Own Cellphone
Nathan Seidle | 3:30 PM—4:00 PM |
| 383 | OpenDorkbot
Douglas Repetto/Karen Marcello | 5:00 PM—6:00 PM |

Makeshift Theater

- | | | |
|-----|---|-------------------|
| 276 | Skype Home Automation:
A Remote Control For Your Home
Richard Davis | 10:30 AM—11:00 AM |
| 278 | Control lights & Appliances Using Express Tools
Samuel Stokes | 11:00 AM—11:30 AM |
| 280 | Using PC Technologies in Robots
Stewart Tansley | 11:30 AM—12:30 PM |
| 281 | A Californian Academic Technology Showcase
Mark Hayes | 12:30 PM—1:15 PM |
| 228 | Competition-Based Learning: A Robotics Decathlon
Tom Murphy | 1:30 PM—2:00 PM |
| 223 | All About Botball
Jenny Grigsby | 2:00 PM—2:30 PM |
| 273 | Citizen Weather Observer Program
Russ Chadwick | 3:00 PM—3:30 PM |
| 256 | SFLan and Community Wireless in the Bay Area
Ralf Muehlen | 3:30 PM—4:00 PM |
| 331 | IPSwap- A Software Participation Age
Paul Pluschkell | 4:00 PM—4:30 PM |
| 356 | Fun with Phidgets
Scott Stanfield | 4:30 PM—5:00 PM |

Makeshift Theater (cont.)

284	The Ultra Mobile PC Microsoft	5:00 PM—5:30 PM
282	Real-Time 3D with Managed DirectX John Mauer	5:30 PM—6:00 PM

Sunday

DIY Theater

146	Heirloom Technology: Tim Anderson Tim Anderson	10:30 AM—11:00 AM
329	Surfrider Foundation: Water Quality Testing Edmundo Larenas	11:00 AM—11:30 AM
285	The Life and Times of the Slide Rule Tom and Roger Shepard	11:30 AM—12:15 PM
39	DIY RFID Implants Mikey Sklar	12:30 PM—1:00 PM
318	Dorkbot: An Accidental Community Douglas Repetto	1:00 PM—1:30 PM
365	Times Square Meets Calder Meets Fisher-Price Activity Center Scott Minneman	1:30 PM—2:00 PM
242	Fabricating the Big Blue Bear Bill Kreysler	2:00 PM—2:45 PM
352	DIY Touchpanels Sasha Harris-Cohen	3:00 PM—3:30 PM
110	Spelunking The Technology Underground Talk Bill Gurstelle	4:00 PM—4:45 PM

MAKE Theater

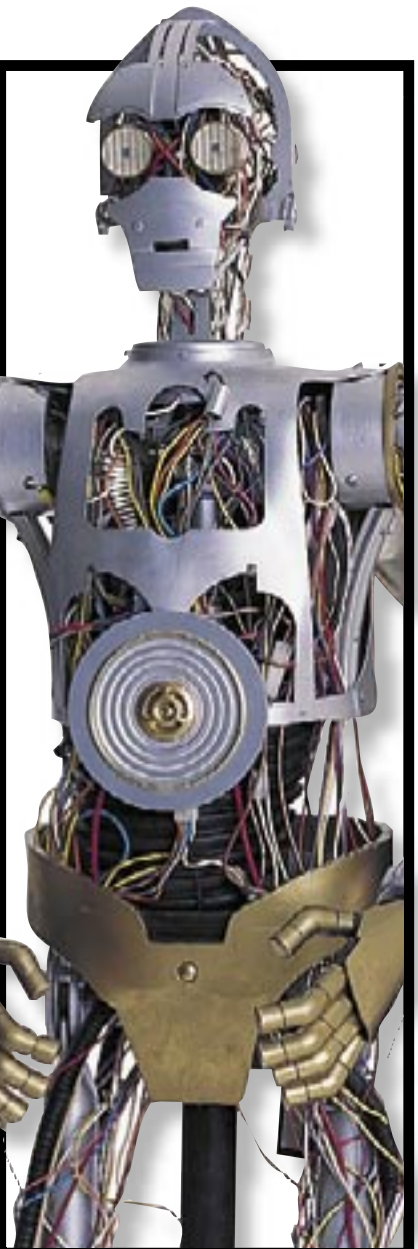
154	Elevator Entertainment Project Clint Chilcott	12:00 PM—12:30 PM
184	Roomba Hacking Phil Torrone	2:00 PM—3:00 PM
354	Rocket Belt: Past and Future Andrew Filo	11:00 AM—11:30 AM

Maker's Lounge

186	Making Instruments, Making Music Marc Weidenbaum	11:00 AM—11:45 AM
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Makeshift Theater

254	Maker's Bill of Rights Mr. Jalopy	10:30 AM—11:00 AM
364	Instructables Eric Wilhelm	11:00 AM—11:30 AM
281	A Californian Academic Technology Showcase Mark Hayes	11:30 AM—12:15 PM
275	Dancing4Fun: Building Your Own Dance Game Ed Kaim	12:30 PM—1:00 PM
277	Monitor and Control an Aquarium or Hydroponic Tank Samuel Stokes	1:00 PM—1:30 PM
284	The Ultra Mobile PC Todd Landstad	1:30 PM—2:00 PM
211	The Sibling Intrusion Detector (SID) George Albercook	2:30 PM—3:00 PM
346	Author and Make Your Own Book Gray Walker	3:00 PM—3:30 PM



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retro gaming • yarn spinning • pinball restoration
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