Welcome to the Making Possibilities Workshop

Provided by

Sponsored by

Maker Education Initiative

EVERY CHILD A MAKER

intel®
Maker Ed is delighted to host the first annual Making Possibilities Workshop at Intel’s Headquarters in Silicon Valley. Whether you are new to making or a seasoned maker, we hope this workshop gives you new ideas, perspectives, and enthusiasm to explore the possibilities.

Have fun making and meeting your new support team!

**AGENDA OVERVIEW**

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
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<tbody>
<tr>
<td>7:15am - 8:00am</td>
<td>Registration</td>
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<tr>
<td>8:00am - 9:00am</td>
<td>Breakfast</td>
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<tr>
<td>9:00am - 9:30am</td>
<td>Dale Dougherty - Why is Making Important?</td>
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<tr>
<td>9:30am - 10:00am</td>
<td>Student Panel</td>
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<td>10:00am - 10:15am</td>
<td>Break</td>
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<tr>
<td>10:15am - 11:15am</td>
<td>The Art of Tinkering: An Essential Part of Making</td>
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<td>Research + Evaluation: Making Educational Outcomes</td>
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<td>Making in Underserved Communities</td>
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<td>Making for Younger Audiences: Imagination, Play, and Learning</td>
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<td>Makerspaces: 1</td>
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<tr>
<td>11:15am - 11:30am</td>
<td>Break</td>
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<tr>
<td>11:30am - 1:00pm</td>
<td>Lunch</td>
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<tr>
<td>1:00pm - 1:15pm</td>
<td>Possibility Faire</td>
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<td>1:15pm - 2:15pm</td>
<td>Getting Started</td>
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<td>Maker Leaders: Advocating to Administrators</td>
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<td>Building Your Social Equity: How to be Seen and Heard</td>
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<td>Making in Out-of-School-Time and Informal Settings</td>
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<td>Makerspaces: 2</td>
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<tr>
<td>2:15pm - 2:30pm</td>
<td>Break</td>
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<tr>
<td>2:30pm - 3:00pm</td>
<td>Sylvia Martinez - Making it Happen!</td>
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<tr>
<td>3:00pm - 3:30pm</td>
<td>Reflection and Next Steps</td>
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<tr>
<td>3:30pm - 3:40pm</td>
<td>Adjournment</td>
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We would like to thank Intel for their Diamond level sponsorship of this event. Beyond their sponsorship, Intel was a true collaborator to ensure the workshop’s success. We appreciate the amazing space, food, and employee volunteers, which were all critical components to making this day possible.
KEYNOTES

Dale Dougherty - Why is Making Important?

Dale Dougherty is the founder & CEO of Maker Media, Inc. in Sebastopol, CA. Maker Media produces Make Magazine, which launched in 2005, and Maker Faire, which was held first in the San Francisco Bay Area in 2006. MAKE has been the catalyst for a worldwide Maker Movement that is transforming innovation in industry, hands-on learning in education and the personal lives of makers of all ages. MAKE invites everyone to become a maker, and integrate creative goals with technical skills. Dougherty was a co-founder of O'Reilly Media, where he was the first editor of their computing trade books, and developed GNN in 1993, the first commercial website. He coined Web 2.0 in 1993. MAKE started at O'Reilly Media and spun out as its own company in January 2013. He grew up in Louisville, KY.

Sylvia Martinez - Making it Happen!

Sylvia Martinez is co-author of Invent To Learn: Making, Tinkering, and Engineering the Classroom helping teachers bring the exciting tools and technology of the Maker Movement to classrooms worldwide.

For the past ten years, Martinez has been President of Generation YES evangelizing student leadership through modern technology. Prior to this, she oversaw product development for consumer software, video games, and educational games at several software publishing companies. Martinez started her career designing high frequency receiver systems and navigation software for GPS satellites. She holds a Master's in Educational Technology from Pepperdine, and a bachelor's degree in electrical engineering from UCLA.

STUDENT PANEL

<table>
<thead>
<tr>
<th>Student Name</th>
<th>Affiliated Organization</th>
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<tr>
<td>Joey Hudy</td>
<td>Intel</td>
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<td>Schuyler St. Leger</td>
<td>Intel</td>
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<tr>
<td>Astrid Macha</td>
<td>Lighthouse Community Charter School</td>
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<td>Jeremy Zamora</td>
<td>Lighthouse Community Charter School</td>
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<tr>
<td>Olivia Nicholson</td>
<td>TechGYRLS, YWCA of Silicon Valley</td>
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<td>Joey Okamura</td>
<td>TechGYRLS, YWCA of Silicon Valley</td>
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BREAKOUT SESSION INFORMATION

Morning Sessions

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**The Art of Tinkering**
This session will draw upon concepts from the Exploratorium’s Tinkering Studio, and tinkering book: *The Art of Tinkering*. *The Art of Tinkering* is a celebration of a whole new way to learn by thinking with your hands, working with readily available familiar and unfamiliar materials, getting your hands dirty, and, yes, sometimes failing and bouncing back from getting stuck. We will investigate circuits through 6 tinkering activities and find out how you can take part in their 6 week MOOC this summer called *The Fundamentals of Tinkering*.

*Karen Wilkinson and Mike Petrich*, Co-Directors of the Tinkering Studio, Exploratorium, and Co-Authors of The Art of Tinkering

**Research + Evaluation: Making Educational Outcomes**
Makerspaces involve multiple pathways to learning, with participants creating projects that vastly differ in terms of scope, function, production time and support received. Who defines learning outcomes in such spaces, and how does this relate to local and historical forms of making within communities? Join leading researchers in the field as they discuss and share current research on educational outcomes in makerspaces. Learn about the role of tinkering in the process of teaching and learning; how adaptive expertise and identity development are supported through making; and how new and playful tools can be used to assess informal learning. Throughout, the panel will consider linkages among learning outcomes, equity issues, and the social and historical uses of materials within makerspaces.

*Rena Dorph*, Director of Research, Lawrence Hall of Science, University of California, Berkeley  
*Lee Martin*, Assistant Professor in School of Education, University of California, Davis  
*Kylie Peppler*, Assistant Professor of Learning Sciences, Indiana University  
*Shirin Vossoughi*, Post-doctoral Researcher, Stanford University & the Exploratorium

**Making in Underserved Communities**
If making is an important educational experience, how do we make sure we provide access to all students? Through hands-on activities and discussion with educators passionate about supporting making to low-income communities and students of color, we will help you expand your ideas in how to start, develop, and promote making within traditionally underserved communities. Using an assets-based approach to thinking about the communities in which we work, we will discuss low-cost ways to integrate making, finding resources and mentors, family involvement, and tying making to the Next Generation Science Standards.

*Luz Rivas*, Founder and Executive Director of DIY Girls  
*Sam King*, Director of Education and Empowerment and Chief Maker for the YWCA of Silicon Valley  
*Aaron Vanderwerff*, Coordinator of the Creativity Lab, Lighthouse Community Charter School  
*Jerry Valadez*, Executive Director, Sam Academy, Sanger Community Science Workshop
Making for Younger Audiences: Imagination, Play, and Learning

Children are natural born makers. In this session, we will explore the power of imagination and storytelling through collaborative forms of making. Our goal is to recognize and nurture the intrinsic strengths and incredible capabilities of young children. Participants will play, draw, and build collaborative stories in two and three dimensions. By providing both familiar and novel materials (all inexpensive), we hope to spark early memories of creativity, while building ideas and support for hands-on approaches for playful learning and inquiry. Join us, play, and make like a kid again!

Steve Davee, Director of Education and Communications, Maker Education Initiative
Jean Kaneko, Chief Tinkerer at The Exploratory; Executive Director & Founder of Maker Guilds
Ryan Moreno, Makerspace/School FabLab Manager for Play Make Share, REM Learning Center

Makerspaces: 1

Come hear the stories of three very different makerspaces. But while they are all very different, they all have the main goal of making things with kids in common! The expert panel will share their best tips and tricks and leave plenty of time for all your questions.

David Wells, Manager of Creative Making & Learning, New York Hall of Science
Angi Chau, Director of the Bourn Idea Lab at Castilleja School
Rick Schertle, Teacher, Inventor, Make Writer, Founder and Director of Washington Maker Workshop

Afternoon Sessions

| 1:15pm - 2:15pm | Getting Started | Maker Leaders: Advocating to Administrators | Building Your Social Equity: How to be Seen and Heard | Making in OST and informal settings | Makerspaces: 1 |

Getting Started

You’d like to start making, but maybe you are not sure where it fits into your school. How do you afford a making program? And how do you support students — and teachers — in thinking like makers? Whatever your next steps are, we’re here to help! Come hear three experienced educators from a variety of contexts discuss these common dilemmas, answer questions, and brainstorm some first steps that you can take to get making going in your class or school.

Christa Flores, Coordinator of the iLab for Making, Hillbrook School
Casey Shea, Teacher at Project Make, Analy High School
Aaron Vanderwerff, Coordinator of the Creativity Lab, Lighthouse Community Charter School

Maker Leaders: Advocating to Administrators

This session will explore strategies for advocating to administrators. Robbie Munsey is an 8th grade physics and chemistry teacher with Albemarle County Public Schools in Charlottesville, Virginia. His work has resulted in a full collaboration with the Smithsonian, as well as collaboration with Monticello. Rebecca Vyduna is the Director of the STEM Center for the San Mateo County Office of Education (SMCOE). The STEM team at the SMCOE is dedicated to providing high quality professional learning to educators across the county’s 23 districts. Derek Runberg is the Curriculum Curator for SparkFun Electronics Department of Education - a position dedicated to creating outstanding
curriculum for electronics education. And Chad Ratliff is a district administrator with Albemarle County Public Schools in Charlottesville, Virginia. He has broad experience across the education sector including being honored for his work as a teacher and coach in one of Virginia’s most high-poverty school districts.

Robbie Munsey, Physics and Chemistry Teacher, Albemarle County Public Schools
Rebecca Vyduna, Director of the STEM Center for the San Mateo County Office of Education (SMCOE)
Derek Runberg, Curriculum Curator for SparkFun Electronics Department of Education
Chad Ratliff, District Administrator with Albemarle County Public Schools

Building Your Social Equity: How to be Seen and Heard
Are you utilizing the unlimited range of maker expertise at your fingertips? Think outside of the box and practice using strategies that will build your arsenal of support to engage youth in making. It’s time to get a social media voice, build a physical and virtual brand and expand your social equity. Join us in a lively exchange of ideas, tips and practices that will expand your maker network just in time to take advantage of the resources and connections available at the Bay Area Maker Faire.

Lisa Regalla, Interim Executive Director, Maker Education Initiative
Kathryn Nash, Director of Corporate Responsibility, Cognizant
Sabrina Merlo, Program Director, Maker Faire

Making in OST and Informal Settings
We’ll dive straight into not only some basic materials, tools, and sample activities utilized in our 3 OST/informal contexts to start making simple electronic circuits, but also discuss the paths to modelling life-long learning, interest-led project design, and peer mentoring as facilitation techniques to infuse making into any informal or after-school program. You’ll get a chance to make your own starter simple paper circuit, then hear about how this concept and others have been infused into the presenters experiences. You’ll then have more time to make with materials and tools to iterate or expand upon your first simple circuit design, ending with reflections on your experience as a maker and facilitator.

Danielle Martin, Knowledge Manager, Intel Computer Clubhouse, Museum of Science, Boston
David Wells, Manager of Creative Making & Learning, New York Hall of Science
Bridget Rigby, Learning Director, The Tech Museum of Innovation

Makerspaces: 2
Come hear the story of three very different makerspaces. But while they are all very different, they all have the main goal of making things with kids in common! The expert panel will share their best tips and tricks and leave plenty of time for all your questions.

Rick Schertle, Teacher, Inventor, Make Writer, Founder and Director of the Washington Maker Workshop
Kristan Hutchison, Teacher and Curriculum Designer, Imagination Unlimited
Jeannine Huffman, CTE Energy and Design Instructor, Da Vinci Center

Looking for more?
All Speaker Bios and a rich Resource List of websites for more ideas and inspiration are available online at

MakerEd.Org/Making-Possibilities
Join our Maker Ed Community!

Join a network of fellow maker educators on our *new* Google+ Community. We welcome your ideas and challenges as you engage in making experiences with the youth in your community. Anyone interested in topics surrounding making and education are encouraged to participate. Please spread the word!


MakerEd.org/Community

Upcoming Events

Maker Faire Educator Meetup

*Thursday, May 15, 2014 from 4-7pm at the San Mateo Event Center*

Directly after the Making Possibilities Workshop, join us at the Maker Faire Educator Meetup on the Maker Faire grounds. Back for its third year, the teacher meetup provides a preview glimpse of the fairgrounds as well as opportunities for further professional development and networking with fellow informal and formal educators. There will be a number of hands-on activities and demonstrations.

Ed Café at Maker Faire

*Saturday and Sunday, May 17-18, 2014 from 10am-8pm & 10am-6pm at Maker Faire*

At Maker Faire, Maker Ed will be hosting the Ed Café, an intimate gathering of venerable educators who will be sharing their stories and wisdom – all about making in education. From the start of Maker Faire on Saturday morning to sundown on Sunday evening, join us for an incredible lineup of panels, presentations, and workshops that range in topic from coding to open portfolios, girls as makers, and the ever-wonderful material of cardboard. Stop by, connect with fellow educators and maker enthusiasts, and share some stories of your own! The full lineup is available at makerfaire.com/bay-area-2014/schedule/ under the Make: Education Stage.

We would like to thank Adafruit for their generous Friend level sponsorship.

In-kind donations were provided by Maker Media, JoyLabz, littleBits, and Google for Entrepreneurs.

Thanks for traveling near and far to join us at the Making Possibilities Workshop! We hope you are inspired to make, connect, and continue our impactful work together.

*The Maker Education Initiative is a non-profit project of the Tides Center, Tax ID: 94-321-3100*
*We could do not this work without the contributions of our amazing donors. If you would like to donate, please make gifts payable to: Maker Education Initiative/Tides Center, P.O. Box 29907, San Francisco, CA 94129.*
Possibility Faire

Tables & Organizations

1. Intel Labs
   ConnectAnyThing (allows novices to build with Galileo) and LED magic wands

2. SparkFun Electronics
   Digital Sandbox, and products around coding and circuit building

3. MakerKids
   Mini robot battle

4. Intel Young Makers
   Student projects: Bug Dropper, extreme marshmallow cannon, and more

5. TechGYRLS YWCA Silicon Valley
   Student project: Dancing Trash Can

6. Maker Education Initiative
   Creative ArtBots

7. Maker Media
   Maker Camp and Classroom Pack (hands-on activities and guides for students)

8. Marymount School of New York
   Post-it note speakers

9. The Exploratory
   3D printed animals

10. Intel Computer Clubhouse
    Start Making! activities

11. Zombie Cat
    Widgets (open-source, hands-on learning tools)

12. Compressed Air Rocket Building

Outdoor Events

Meet at Patio at scheduled time. A representative will lead group to designated area.

SAM Academy: Mobile Classroom Tour 1
12:00 PM

Compressed Air Rocket Launch
12:20 PM

SAM Academy: Mobile Classroom Tour 2
12:30 PM