

QUARTERLY OF THE INDUSTRIAL DESIGNERS SOCIETY OF AMERICA **SPRING 2016**

# INNOVATION

## Women in Design

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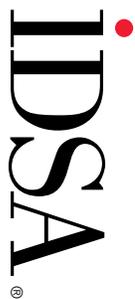
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Pip Tompkin Design. Los Angeles, California.  
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# INNOVATION®



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The quarterly publication of the Industrial Designers Society of America (IDSA), INNOVATION provides in-depth coverage of design issues and long-term trends while communicating the value of design to business and society at large.

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**Cover:** Eva Zeisel holding "Talisman" mug, 2004, Lomonosov Porcelain, St Petersburg, Russia. Photo ©TalismanPHOTO. See page 45.

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**By Kristen Bailey**

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Kris Bailey has a long history in design and branding prior to moving into education, including Lunar Design (1990–2002) and a brief stint as a landscape designer (2002–05). She joined the Urban School, an innovative independent high school in San Francisco, in 2005 as director of marketing and communications, and led the school in its first rebranding in more than 30 years, soon to be unveiled!

## High School Design and Engineering

# FULL STEAM AHEAD

**T**he dozen or so young people could easily have been wearing ancient armor as they primed their trebuchets. Nearby, another group would not have looked out of place as Roman soldiers arming their onager as they marched toward expanding the empire.



But this wasn't a historical weaponry reenactment or an exercise in synonyms; rather these were high school students designing, prototyping, refining and testing their collaborative project for their applied physics class—catapults designed to hit their target (their teacher) with the ammunition (water balloons) accurately at 150 feet. No grade could ever be as sweet as seeing your teacher, soaking wet, applauding your success!

If the process these kids followed sounds familiar to you, that's entirely, well, by design.

Most high schools do their best to teach skills and knowledge that will be relevant and indispensable to their graduates. Some schools, like the Urban School of San Francisco, have tweaked their core curriculum to build an integrated and interdisciplinary approach to better prepare our students for their futures. In applied physics and other science, design and computer science courses, the core design process has proved to be a useful way to deliver that curriculum.

UrbanX Labs, a program of the Urban School, offers 380 curious and serious students opportunities to explore and delve deeply into a variety of topics in its hands-on minds-on STEAM curriculum—including industrial design, engineering, advanced computer science and coding, electronics and robotics and graphic design—that will drive how designers approach and create innovative new products and experiences in the 21st century.

No doubt many of INNOVATION's readers are intimately familiar with STEM/STEAM education and its expressions: maker faires, elementary and middle school design thinking programs, independent tech and tinker shops, and even toys and basic coding games.

All of these efforts have gone a long way toward inspiring and encouraging our children to work with their



hands, to learn basic concepts and to dream big. But for high school students, the move from tinkering and playing to understanding the gap between seeing a real problem and its solution covers a whole lot of territory in four short years.

Most high school curricula ask students to acquire knowledge and then demonstrate it on tests, papers and assignments. Students who have become adept at “doing school” know what to expect and know how the system works.

**In a high school STEAM curriculum, students are asked to apply what they have learned to novel and challenging real-world problems.** This is a far more difficult form of application and knowledge transfer than taking a test or completing a problem set. It requires an interdisciplinary design process expressed through creativity, synthesis, mental agility and a willingness to try the same thing over and over until it’s closer to right, a challenge for many young designers-to-be. That iterative process is what we do in the world outside of school, where problems do not readily follow a unit of instruction designed to help us answer the problem. In the real world—your world as designers—we must synthesize skills and knowledge from different domains, iterate and prototype, critique and revise our ideas and approaches, and, most critically, collaborate with others in coming up with a solution.

Urban’s extraordinary teachers take the time to learn what’s important to the product development industry and to ensure that the UrbanX Labs program is relevant to the needs of today’s designers and innovative companies. The industrial design class’ recent visit to the headquarters of a major creative design studio in San Francisco provided 10th–12th graders with a dose of reality from the firm’s principals, and lots of oh-wow moments during the presentation and facility tour. One leader, a longtime college teacher at the Stanford D School, and Bethany Hellerich, Urban’s industrial design teacher, shared insights and tools for encouraging creativity in high school and college students alike.

High school students trying on designer, coder, engineer. It’s all nice, right? But why does this matter?

Sooner than you think (less than four years!) a current energetic high school senior will be knocking on your door seeking an internship. Wouldn’t it be interesting if that student already had basic design skills and familiarity with a process that expects multiple rounds of trial and error?

You can play a role in making this happen. Check in with a school in your community and see if there’s a way you can connect with kids and teachers. Think about how you could use your version of a medieval catapult to help students learn about integrating physics and design. And don’t forget to include water balloons—they’re key to a great user experience. ■

Designed in Austin, Texas



