

I love helping people explore and do what they love. This is the main reason I do almost all of what I do. It is why I invented and manufacture and sell TV-B-Gone remote controls (which I love). It is why I co-founded Noisebridge hackerspace in San Francisco (which I love). It is why I travel the world and help other hackerspaces (which I love). It is why I have put so much energy into creating huge hardware hacking areas to teach thousands of people to solder at Maker Faires (which I love).

Sadly, lots of people on our planet don't know what they love to do - for whatever reasons they haven't had a chance to explore what it might mean for them. Some haven't had the opportunities, some find it challenging to make the time, some feel overburdened with responsibilities and obligations...

One thing that can make it easier and more enjoyable (and more likely) for people to explore what they love is to be part of a supportive community, such as at a hackerspace or a Maker Faire, where so many are already exploring and doing what they love. In these communities it is much easier to get inspiration, overcome fears, be exposed to cool ideas and activities one may not have come across otherwise.

Furthermore, it is unfortunate that in the US, what goes for "education" is more concerned with standardized test scores (for the sake of the education bureaucracy) than with what education should be about: learning what we each want to learn to live lives we each want to live. (And education systems in other countries have their own problems that keep education from being what it could be.) Hackerspaces and Maker Faires can provide opportunities for some people to get a real education.

Wouldn't it be cool if there were more hackerspaces and more Maker Faires to give more people these opportunities? I think so, yes!

But, of course, it does cost money to make this happen.

How much money do we need? What are we willing to do get the money? What are we willing to stop doing to get the money? Does it matter where the money comes from? Do any changes in our behavior change who we are and what we are about?

I ask these questions because I think they are important ones to ponder, and important to answer for ourselves.

And, given that these answers are personal, what am I willing to do and not do based on the answers that others come up with?

I love Maker Faire! It has been a huge, wonderful part of my life since the first Maker Faire in 2006. It has changed my life for the better in so many ways. It has positively changed so many peoples' lives! And it will continue to do so.

So, it was not an easy choice for me to choose to stop helping at Maker Faire while its associated MENTOR program is being funded by DARPA, the Defense Advanced Research Projects Agency.

At the start of the World Maker Faire in New York last September I was awarded the first (and last) "Mitch Altman Maker Hero Award" for my "outstanding contribution to the cause of maker-related education and/or open access to technology." It was overwhelmingly emotional for me to be honored in this way. I never would have imagined at that moment that this was my last Maker Faire.

Two days later, at the end of the World Maker Faire, at the thank you dinner for folks who helped make it happen, Dale Dougherty, who started MAKE Magazine and Maker Faires, gave thanks and inspiration to us all. And he saved the really good news till the end: Maker Faire received a \$10 million grant to give kids opportunities for hands-on learning at a thousand high schools. Yow! Then, almost in passing, he mentioned that this grant came from DARPA. To some, this may have had no impact. To me, it felt like a kick in the gut.

Without exception, at every place I've ever worked, someone has wanted to use the cool things that I and my co-workers created for military purposes. Again, for others, this may not be a problem. But for me, it has led to me quitting the project each time. A couple of examples: my first job was making games on Apple II computers - the military wanted to modify them to make killer helicopter training simulators. At the company where we developed Virtual Reality, and where I spent three months of my life creating a VR system for the University of Central Florida, I later found out that the military was behind the sale, and

that they were going to use <u>the VR system for World</u> War III training simulators.

I guess I just never anticipated that Maker Faires would be anything but unambiguously positive for me.
Maybe I was naïve.

As the hacker scene has grown from handfuls of spaces in 2007 to about a thousand spaces currently (and growing), and as Maker Faires are now being sponsored by large corporations. I suppose it was inevitable that we would become a market. And I suppose it was inevitable that we would be seen as opportunities for others for their goals. And those goals may or may not be in alignment with mine.

I struggled for months trying to decide the best thing to do. Should I keep helping out the way I have been at Maker Faires, and in some ways help DARPA in their goals? Should I stop helping out the way I have, and eliminate a great source of joy in my life?

According to their website, DARPA's mission is "to maintain the technological superiority of the U.S. military and prevent technological surprise from harming our national security by sponsoring revolutionary, high-payoff research bridging the gap

I looked into the goals of DARPA.

between fundamental discoveries and their military use." According to Wikipedia, they currently have an annual budget is \$3.2 billion to accomplish their goal. If our country's military were simply for defense, and for the security of our country, then I would have no problem with DARPA's mission.

Unfortunately, the way I see it, our military is only partly for these purposes, and primarily a means for large profits for military contractors' profits (despite the tragic consequences, both to people in other countries and to our own country's own safety and security).

I looked into the DARPA grant that the Maker Faire folks received for what they call their MENTOR program.

The DARPA grant's stated purpose is to increase the number of high quality engineers available. The stated reason this is necessary: the US education system is not adequate to provide them. Money from the grant is renewable annually. As already stated, I agree that our countries education system is









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# Tactical Technology Office









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# **PROGRAM MANAGER**

LTC Nathan Wiedenman nathan.wiedenman@darpa.mil

## THE MANUFACTURING EXPE (MENTOR)

The Manufacturing Experimentation and engaging high school-age students in a s manufacturing experiments. DARPA envi numerically-controlled (CNC) manufacturi schools nationwide. The goal is to encou collaborate via social networking media t complexity, such as mobile robots, go ca

Several performers are currently under co mature, MENTOR will expand to ultimate 2014-15 academic year. Schools for the but as we prepare for rapid expansion in interested schools and districts. Contact

# RIMENTATION AND OUTREACH

Outreach (MENTOR) program focuses on pries of collaborative design and distributed sions deploying up to a thousand computerng machines-such as "3D printers"-to high age students across clusters of schools to jointly design and build systems of moderate rts, etc., in response to prize challenges.

ntract as part of MENTOR. As their efforts y reach our goal of 1,000 high schools by the irst year of the program have been selected, he near future we welcome input from us at mentor@darpa.mil.

### RESOURCES

- "Democratizing Design." Remarks by LTC Nathan Wiedenman at Maker Faire (5/19/2012)
- DARPA-BAA-11-19: Manufacturing Experimentation and Outreach (MENTOR), CLOSED
- o 9/28/2010 Press Announcement







inadequate. Myself, I'd much rather see educational
opportunities created for people by organizations that
exist to better peoples' lives (rather than by the
military).

Everything has pluses and minuses. How can I balance the amount of good that will come from this grant's money with my perceived negative consequences?

Maybe there was a middle ground? I spoke with Dale on the phone at length, trying to come up with a way I could help without being associated with the DARPA money. We couldn't come up with a way.

After weeks more of struggling to come up with an answer, I realized that I simply could not feel good helping the way I had been helping at Maker Faire, knowing that I was also helping the goals of DARPA that are not aligned with mine. Not wishing to hurt Maker Faire, I made a short, simple, heartfelt, public announcement that was as gentle as I could make it. Here is the complete post I made on my social networking accounts:



mitch altman dord 2012 Pales

It's official. I'm greatly saddened that I won't be able to help at this year's US Maker Faires after they applied for and accepted a grant from DARPA.

I look forward to working and playing at Maker Faire again, after they are no longer associated with DARPA.



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By his response to my post, it seems that the head of O'Reilly media, which is the umbrella company that runs the Maker Faire, was greatly angered by my post, and is perhaps holding a grudge against me. As a result, I may never have the opportunity to help out at Maker Faire again. And that makes me even sadder.

#### Sigh.

It was the best I could do. I wish I could have come up with a way to feel great about it all. But, I failed at that. Yet, I would feel worse if I thought I was helping DARPA's goals.

To explain my intellectual reasons further, for what their worth:

- If funding sources didn't matter, then politicians should be able to receive "gifts" of any amount from any person or corporation. After all, there are no strings attached, right? The money is a gift, and the politician can do whatever they want with the money.
- Given that a gift is renewable annually, what kinds of things are people (consciously or otherwise) willing to compromise to increase the likelihood of receiving next year's funding? What kinds of things are people (consciously or otherwise) willing to stop doing to increase the likelihood of receiving next year's funding? Will what we do start becoming more about money, and less about what we love?
- One of the more powerful forms of marketing is to show that somehow \*you\* are inadequate (because you aren't happy, you have dandruff, you are somehow helping to cause harm etc.), and then to associate a warm fuzzy feeling with others getting some benefit from PRODUCT X where PRODUCT X can be a Pepsi, a political candidate, a corporation's "concern" about the environment, etc. With repetition, a higher percentage of people end up buying PRODUCT X. In the case of this DARPA grant, the inadequacy is your educational opportunity (or your project's funding), and PRODUCT X is the US military.
- There are pluses and minuses to every choice.
  There are pluses and minuses to funding choices.
  DARPA funding exists to further the goals of DARPA.

Accepting the funding may help further one's own goals. We can each do the best we can to balance the pluses and minuses, and make the best choice we can. To use an extreme case (perhaps easier to think about?): Wernher von Braun chose to accept funding from the German military to create his dream of a space program - and it worked! As well. the German military was helped in its goals. resulting in the death and suffering of London civilians bombed by missiles.

- If DARPA is creating opportunities for people, it seems likely that more people will work for DARPA and other arms of the US military. If people are working for the military, some may be doing what they love. Others will merely have a job. Will this job help them explore and do what they love?
- What does it mean that money for worthwhile endeavors, such as education, is no longer funded by organizations that exist for those endeavors. but are funded by the military? Are these unelected officials the people we want making decisions about spending priorities for our country and its future?

There are no obvious, absolute right and wrong answers to all of this. Hackers and hackerspaces are being given more opportunities to apply for DARPA grants. And as we contemplate these opportunities it is up to each of us to make our own choices. My wish is that you make choices that are conducive to creating more fulfillment in your life, and for the lives of those around you. Then each of us can all learn from the consequences of our choices (and make new choices).

### DARPA Funding For Hackers Hackerspaces And Education



Published on Aug 9, 2012 by Decomes

DARPA Funding for Hackers, Hackerspaces, and Education: A Good Thing? Mitch Altman, Psytek, Willow Brugh, Fiacre O'Duinn, Matt Joyce Mitch Altman caused a stir this spring when he publicly announced that he would not be helping U.S. Maker Faires this year, after it was publicly announced that they received funding from the Defense Advanced Research Projects Agency (DARPA). So, what's the controversy? DARPA, an agency of the U.S. military, has funded many famous projects over the past several decades, including GPS and the Internet. People in DARPA are now making large amounts of grant funding available for hackers and hackerspaces to do projects of their choice, as well as funding for education through hands-on learning, which MAKE Magazine is using to help schools. Does it matter that DARPA is responsible for the development of new technology for the U.S. military with an annual budget of \$3.2 billion? What are the ethics of using funds from people or organizations that may or may not be aligned with one's own goals? What are the ramifications for the backer/maker movement? is DARPA funding overall a good thing? There is no simple answer. Explore the ethics and ramifications with Mitch, as moderator, and the panelists, as they

give their perspectives on this complex set of issues.

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