E-SQUARED MAGAZINE

ART + SCIENCE

PELLING LAB

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Is it possible to grow ears from apples? At Pelling Lab it is. Founded and directed by Andrew Pelling, an award winning scientist, professor, entrepreneur, TED fellow and speaker, he and his team of artists, scientists, social scientists and engineers explore speculative living technologies for the future. Largely powered by creativity, Andrew Pelling and his colleagues take unusual ideas and transform them into reality.

Contemplating how to use low-cost, open source materials to explore technologies for the future, Andrew Pelling and his team discovered that something as simple and accessible as an apple could be used to support tissue growth. But how did it all begin? Strangely enough, with a conversation about Audrey II – the exotic plant turned beast from *Little Shop of Horrors* – and whether or not something like that could actually be grown in lab.

So, Pelling Lab began exploring the use of biomaterials in various applications. Though cleverly carved to resemble ears, the apples do not actually function as such, but serve as a framework for cells to grow. Through a process known as decellularization, the cells of apples are removed, leaving behind a cellulose scaffold. As empty scaffolds they have the ability to support implanted cells. In their experiments, both human and mouse cells were implanted and grown successfully.

It would appear that growing something like Audrey II in the lab is not so far-fetched afterall. Andrew Pelling and his colleagues are actively exploring new methods to apply science in inexpensive and renewable ways. As commercial scaffolds remain very costly, Pelling's research has great implications for combating the worldwide problem of organ shortage.

"What I'm really curious about is if one day, it will be possible to repair, rebuild and augment our own bodies with stuff we make in the kitchen." – Andrew Pelling

Andrew Pelling has built a career on unapologetic curiosity, creativity and serendipity. He is also the co-founder and CTO of Spiderwort Inc., a mission driven company developing open source platforms to enable the widespread and global adoption of biological research in all environments and economic contexts.

Most recently, Andrew co-founded and directs pHacktory, a distributed street-level research lab that amplifies community ideas through a potent mixture of craft, serendipity and curiosity. Pelling's work has been in the international media spotlight for many years, with recognition in outlets such as *Wired, The Atlantic, OZY, Huffington Post, NPR, Scientific American, Popular Science, BBC, Der Spiegel, Deutsche Welle* and others, as well as numerous highlights in the Canadian media and Scientific media. In 2016, he was named a TED Fellow, one of 21 people chosen annually by the TED organization who are considered to be the most disruptive and transformative change-makers in the world.

Need a place to take your old computer? The Pelling Lab wants your old, broken down, obsolete technology! Re-purposing and hacking old electronics and equipment is an important part of their creative and scientific practice. If you would like to make a donation of your old gear, visit their website.

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