

Sustainable Research Lab Alternatives

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I had initially proposed this idea as my main project focus for my Senior Design course, but it was never picked up and my team ended up moving in a different direction. I may try to revisit this project for my master's thesis. My project was focusing on the amount of waste produced in research labs around the world. While working in Dr. Kristen Cardinal's Tissue Engineering lab for the past year alone I've noticed how much plastic waste is produced since everything in the lab has to remain sterile in order to perform the cell setups. Each pipette tip, sample tray, sample stub, and many other little components in our lab plus all of the packaging they come in must be thrown away. On top of this, since most of these items are labeled as a biohazard after they've been used, they're unable to be recycled and are sent to an incinerator instead. Exeter University in the UK did a project similar to this after realizing that their biology lab alone was generating approximately 280 tons of waste each year. The main problem that arises when trying to solve this issue is that it's simply always going to be faster and cheaper (when you consider that time is money for labs such as these) to throw away these used products, rather than re-sterilizing them for further use despite the fact that methods have already been developed to do this.