From cars that park themselves to cell phones that track your daily tasks, we are surrounded by the most innovative and advanced uses of the worlds resources to date. Technology comes and goes at a rapid pace, becoming obsolete every 18 months, and this isn’t about to slow down any time soon. The most common electronic device is the cell phone, but inside hides a danger, one that lead the ACS' Environmental Science & Technology Journal to classify them as hazardous waste, namely every cell phone contains dangerous chemicals such as lead, copper, nickel, antimony, zinc, and mercury(4). The same can be said about any other electronic device! Most people are not aware of the danger and just throw them away when a new one is purchased.

This brings us to the burning question; where do these devices go when thrown out, and how are they handled? The answer to this question may surprise you, and is the controversial subject of this paper. When they break down or become obsolete, a small percentage are properly disposed of; but the overwhelming majority are thrown into landfills, exported to other countries and dumped, which ends up creating massive cesspools of toxic sludge and debris. This is a continually growing problem that must be addressed before it creates irreversible damage to our environment and the people and creatures that inhabit it.

E-Waste is a term commonly used to describe electronic equipment that is not properly disposed of. Anything from cameras to computers to fluorescent light bulbs is considered a hazardous electronic, and fits under the E-Waste category. Most developed nations such as the US and Canada do not have a large problem with the toxic dumps created by mishandled technology disposal, mainly because these countries instead export and dump in foreign countries. A majority of the problems come from the high tech equipment being thrown directly into landfills located in third world countries. Even though these landfills are able to accept this waste the toxins will eventually leak into the environment through the air and water. According to a study by the Basel Action Network "E-Waste represents 2% of America's trash in landfills, but it equals 70% of overall toxic waste."(2) This statistic is staggering, and shows the gravity of the situation we have on our hands. Outside of the U.S. the problem is much worse. According to a report released by the Silicon Valley Toxics Coalition, up to 65% of the technology in need of recycling is exported to third world countries that do not have the resources to properly dispose of the hazardous materials. These third world countries are seeing problems ranging from polluted water and air to the disappearance of entire species of animals and severe defects and illnesses in humans. There is a solution to the epidemic of toxic material: Instead of tossing obsolete technology, bring it to a proper recycling center.

You may be wondering what kinds of toxic materials are in these electronic devices, and what problems they really cause. Most people believe that computers are relatively harmless because "I use one every day and nothing happens to me". The reason the computer is safe to use is because it isn't being mistreated or broken apart (in most cases). Computers are designed to keep their users from coming in contact with the deadly chemicals, but during improper disposal, these chemicals are released. All electronic components contain small amounts of gold and other precious metals. In order to retrieve these metals, the equipment must be dismantled. According to a published report by the EPA, most electronics contain highly toxic metals such as lead, cadmium, mercury, and what are known as brominated flame retardants. (1). Under normal operating conditions the user is not exposed to these materials, but when the computer is recycled they are released into the air in large quantities. During the recycling process the electronic components must be stripped off of the boards by heating them to a very high temperature. Along with releasing the lead solder into the air, the brominated flame retardants are also burned off. These are extremely toxic, so much so that computer manufacturers are phasing them out to cut down on toxicity. All of this is necessary to retrieve the precious metals found within in these electronic devices. Is it worth the effort and health risks to retrieve these precious materials?

The adverse health effects caused by the chemicals found in E-Waste are abundant. The process of poisoning the environment does not happen overnight, it takes years, but is a very painful process. Once the toxins begin to leak into the water tables they are ingested by humans and animals alike, where they begin to damage internal organs, attack the nervous system, and cause birth defects. (3) Animals, such as the endangered Asian Leopard Cat, only live in Southeastern Asia and are amongst thousands of animals sensitive to these chemicals. The wildlife can become seriously ill or even killed off in massive numbers due to unintentional chemical poisoning. The animals that live in and around these toxic wastelands are in danger of extinction, and we are the cause.

After reviewing all of the information and statistics available on E-Waste, it quickly became apparent that something needs to be done. Massive amounts of the waste are produced every year, and the rate at which technology is advancing is rapidly increasing. As the years move on, not only is the problem, but it is progressing at a more rapid rate. It is up to everyone collectively to step up and take action before it is too late.

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