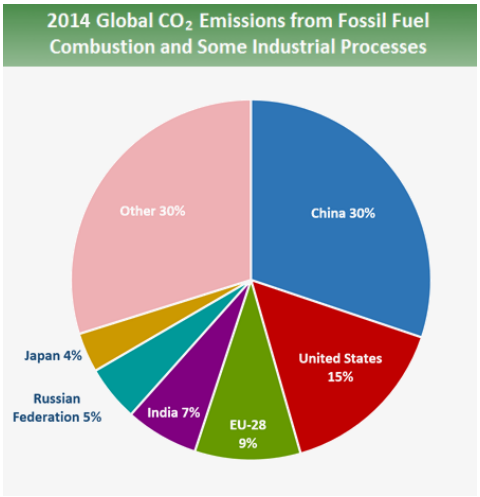
There are many ways to reduce our environmental impact.

Many often gauge their personal environmental influence through a small lens, limited to specifics such as fuel usage from driving. Common solutions to minimize car emissions include carpooling, using public transportation, or driving electrically-powered vehicles. However, there are other ways of reducing one's overall environmental footprint, aside from greenhouse gas (GHG) emissions. Water consumption, plastic/organic waste generated, pesticide/herbicide usage, and other daily activities must be considered when determining the effect one has on the environment. Moreover, in laboratory practice, limiting DI water waste, faucet running, and use of laboratory incubators are actions necessary to reduce our influence on our surroundings. These impacts can not only be measured on a personal level, but also on a larger scale by accounting for the resources that companies use as a whole in laboratory buildings.

Before breaking down which sectors contribute most significantly to greenhouse gases in a country, below is a diagram from the U.S. Environmental Protection Agency (EPA) portraying each country's contribution to total GHG emissions. Many of these wastes seem to stem from the use of industrial companies, which include companies created for the purpose of manufacturing science products and participating in science processes.



Here are the different sectors that contribute to GHG emissions within each country:

- Here is a link to an article by the United States Environmental Protection Agency breaking down greenhouse gas emissions by sector within the US, as well as by sector throughout the world.
- Here is a link to a pdf showing greenhouse gases produced in China by sector.
- Here is a link to a pdf showing GHG emissions produced in India by sector.
- Here is a link to a pdf showing GHG emissions produced in the EU by sector.

Controlling and monitoring corporate waste and chemical use of small, independent labs is necessary to reduce waste products. Chemicals that are toxic to ecosystems should be

further monitored and sequestered. CCA iGEM works with polycyclic aromatic hydrocarbons, compounds found in crude oils that are extremely dangerous to aquatic life.

Beyond quantifying greenhouse gas emissions, there are other methods of measuring the environmental impact. Some more eco-tips that can be useful in non-gas releasing processes include:

1. Recycle old batteries, wires, light bulbs, headphones, and other obsolete devices at electronics recycling drives. These centers can be found in laboratory parks or searched for online.

2. Donate old machines, especially to educational institutions such as high schools, instead of throwing them out. Giving away unneeded devices reduces problems like hazardous waste in landfills. For example, an old incubator could be refurbished for use in high schools with cell cultures rather than be broken down in a landfill.

3. Try to divert waste from the landfill by learning which objects can be recycled or composted and which cannot. A safety chart in a laboratory may also be effective for determining where waste should go, what should be recycled, and what should be considered hazardous waste.

4. Understand your environmental footprint and the factors that most contribute to it.

5. Be aware of the environmental track records of the companies you buy equipment from. Make sure that the methods of obtaining chemicals and other products are environmentally stable and helpful.

Another way to reduce a carbon footprint could include measuring the greenhouse gases produced from the products you consume. The biggest contributor to GHG in some countries is electricity production, while in others it is transportation; both are due to the combustion of fossil fuels. Another large percentage of greenhouse gases produced comes from the animal agriculture industry. Specifically, growing meat on farms is often very water-intensive and requires a lot of land. In addition to the water and land consumption from the livestock themselves, crops need to be grown separately to feed the animals.

There are many other aspects to consider when measuring one's environmental footprint. Some include paying attention to the generated waste that may go into landfills or water streams. Regarding the measure of the water consumption footprint, one could record the amount of water used and estimate the amount of water needed for the production of products. By accounting for the exact numerical quantity of water consumed per day, one can eliminate the unnecessary components of water usage. Water is a natural and renewable resource, but its over-consumption can and must be reduced.

When trying to lower your environmental impact, it is important to consider a broad range of factors and the different ways that humans impact the environment.