10^9+ Team Projects

June - August 2012

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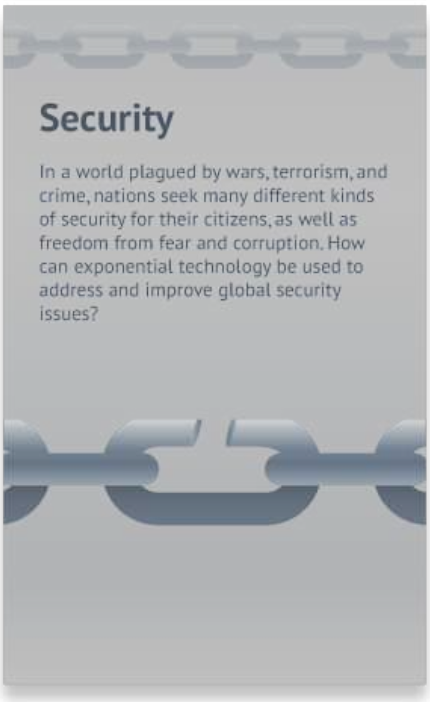
One Billion

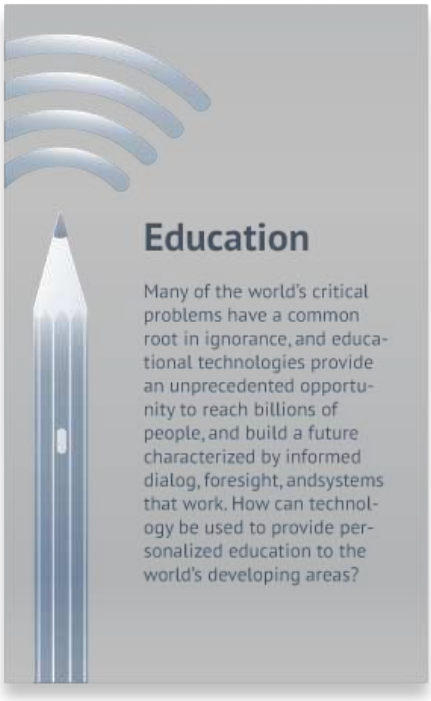
People, Ten Years, Positive Change = 10^9+

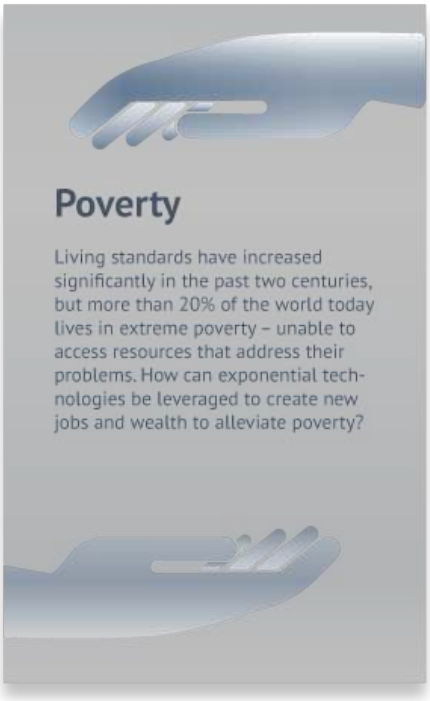
The Team Project for SU's Graduate Studies Program is the centerpiece of the curriculum where students are given a challenging, interdisciplinary, and real world problem that exemplifies one of humanity's grand challenges. Team Projects are called 10^9+ (ten to the ninth, plus), meaning that students will be asked how they can impact 1 Billion people, worldwide, in a positive way, within 10-years time leveraging accelerating technologies.

At the end of the 10 week summer session, students will present their results before a panel of individuals composed of representatives from private and public industries. They will also launch a website and other deliverables to serve as a launchpad for practical solutions and continued international dialogue related to various aspects of the problem.

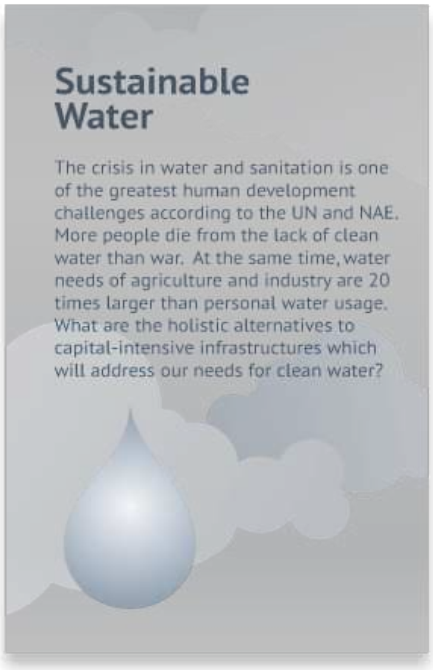
GSP11 Grand Challenge Areas

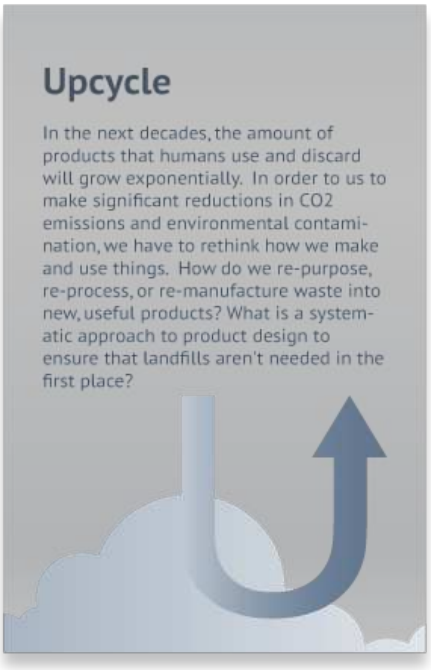






Past Project Areas





Past Projects

GSP10

Food: Agropolis aimed to put hydroponics and vertical farming to work on a local scale. The project dealt with producing little modules that could be decentralized. One potential application would be to grow produce as well as farm-bred tilapia fish and bioengineered meat inside a multistory building, and sell the foodstuffs at a market located in the same building.

Energy: Amunda, which would seek to set up small-scale markets in energy for the developing world. Their application for sharing data about customers and suppliers of energy would guide entrepreneurs in finding the optimum power generation solution for their particular region.

Water: One team project, dubbed Naishio, would enlist converging technologies (bio plus nano plus solar) to desalinate seawater more efficiently. Another venture called Sensoria focused on biology-based sensor technologies to test water purity.

Space: AI Labs was a proposed R&D firm to apply general artificial intelligence to increasingly autonomous tele-operated robots and synthetic biology to help create survivable environments, overcome disease and aging, and extend human presence in space. SpaceBio Labs strove to provide cheap and easy access to highly functional biological experiments in space on automated platforms that are reliable for long duration experiments.

Upcycle: The Fre3dom team worked on a 3-D printing process that would allow local communities in the developing world to make their own spare parts for broken-down equipment using bio-plastic. Another team tried to create more efficient markets for products that one company might see

as industrial waste (i2cycle).

GSP09

The ACASA team project examined how these exponentially growing technologies could be applied to the problem of sub-standard housing, concluding that advances in 3D-printing and Rapid Additive Manufacturing (RAM) technologies could be used to construct customizable, affordable, and environmentally sustainable homes.

OneGlobalVoice is a development platform that gives access to cloud-computing resources through SMS on a basic (2G) cellphone. It demonstrates how innovations commonly carried out on computationally-and-bandwidth heavy internet subscriptions, or on fast and relatively expensive 3G networks (available to less than a quarter of mobile subscribers worldwide) can also take place on the 2G networks available to over half the world's population.