

admitting any wrongdoing – that it illegally tested an experimental antibiotic on children, leading to 11 deaths.

Finally, there is a movement in the US to give researchers easier access to prisoners. Current regulations, stemming from past abuses, severely restrict scientists' ability to recruit prisoners for clinical research. But the Institute of Medicine – an influential government advisory body – has recommended relaxing these restrictions. While no decision has been made, the once unthinkable idea of reopening prison gates to biomedical and behavioural research is now back on the table.

These practices highlight how one of the most crucial ethical debates in science and medicine is not over speculative technologies such as synthetic biology. Rather, it concerns the more basic question of how we treat each other. With an entire research industry becoming increasingly dependent upon vulnerable populations to test experimental treatments, not enough thought has been given to issues of justice. We are not back in Tuskegee territory yet, but this approach to recruiting human subjects may give rise to outcomes that are similarly pernicious.

Obama should be commended for instructing his Bioethics Commission to look into ways to prevent further human subject abuses, but its mandate must go beyond checking the rules. Rather, the commission must examine a deeper question: is it ever ethical to ask the most vulnerable members of our society to give their bodies to science? ■

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## One minute with...

# Kosta Grammatis

Access to the internet is a human right, says the campaigner who has a plan to get the whole world online

### You want to buy a communications satellite that is in orbit around the Earth. Why?

To bring internet access to millions of people who can't, currently, get online.

### How will buying a satellite help when billions of people don't have phones or computers to access the internet?

The cost of computing continues to decrease substantially. In India, for example, they are rolling out the \$12 laptop. Some people in developing countries spend half their disposable income on cellphones because telecommunications add value to their lives. If access to the internet were free, people will find a way to get devices to use it.

### Have you got a particular satellite in mind?

Our organisation, [ahumanright.org](http://ahumanright.org), has been thinking about recycling an existing satellite for a while. In 2009 we heard that the company Terrestar was being delisted from the NASDAQ stock exchange. At the time they owned the largest communications satellite ever put in space. We thought it would be a unique opportunity, if they did declare bankruptcy, to buy their satellite. When the company filed for chapter-11 bankruptcy protection in October last year we rolled out [buythissatellite.org](http://buythissatellite.org) to crowd-source the initiative.

### Where is the satellite now? Wouldn't it have to be moved?

Terrestar-1 is currently at the longitude of North America. If we buy it, we will move it to a country that lacks internet access and use it to deliver access there. Every satellite has thrusters which allow it to move.

### What are the main challenges to buying the satellite?

They are financial. Buy this Satellite has a goal of raising \$150,000. That won't buy a satellite, but it will get the process started. The funds will be used for a feasibility study to take to investors and start the legal process of submitting a bid for the satellite. So far, we have raised \$30,957 from 570 donors. The response has been incredible.



### PROFILE

Kosta Grammatis has worked as an avionics engineer for the US space exploration company SpaceX. He is CEO of the organisation [ahumanright.org](http://ahumanright.org) and is a visiting researcher at the MIT Media Lab

### Why do you argue that access to the internet is a human right?

At the moment, the internet is the primary means to access information. Article 19 of the Universal Declaration of Human Rights states that everyone has the right to "hold opinions without interference and to seek, receive, and impart information and ideas through any media and regardless of frontiers". We all know the adage "you can give a man a fish..." If you give someone the internet, and teach them how to use it, they can learn anything they want to know.

### Isn't access to education, healthcare and clean water more important?

Access to the internet, and the information it holds, facilitates education, healthcare and access to clean water. Tele-education helps kids learn in rural areas, tele-medicine allows doctors to treat the sick from anywhere in the world, and incredible online projects like [charitywater.org](http://charitywater.org) help people gain access to clean water.

Interview by Alice Hlidkova