

## JOHN CUMBERS

Dec 6, 2011

John Cumbers, Ph.D

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OSTP, The White House

Dear OSTP Bioeconomy RFC,

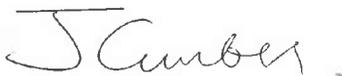
I commend your call for input to the National Bioeconomy Blueprint. I have a M.Sc in Bioinformatics (Edinburgh University) and a Ph.D in Molecular Biology (Brown University). I have been involved in the field of synthetic biology since starting the Brown iGEM team in 2006.

I founded and run the BioSysBio conference in synthetic biology, co-founded the synthetic biology company Universal BioMining and have recently co-founded a synthetic biology incubator called SynBio.me in Silicon Valley. I also work at NASA Ames Research Center and help to run the synthetic biology program there.

I have a simple message:

- 1) The academic education system does not scale well. There are few formal education mechanisms for the bioeconomy outside of the Ph.D system. The Ph.D system is an antiquated apprenticeship and is ill-suited to supply the labor needed for the coming bioeconomy. Radical alternatives should be experimented with.
- 2) The development of ideas could be facilitated by low cost, well equipped and well funded public labs where researchers having new ideas can bring them to fruition without the formal structure of an academic institution. Lab benches should be able to be rented per researcher per month at a low cost.
- 3) One grand challenge to consider is the \$1000 genome. Not sequencing, but synthesis of an entire bacterial genome for less than \$1000.

Sincerely yours,



Sincerely yours,

John Cumbers