

If I had a trillion dollars

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What are the limits of science? I don't mean science in general, I mean you: your science. What is holding you back from the goals you wrote down in your thesis project, your R01, your reason for becoming a scientist in the first place? Methods development is the science of solving these problems. What drew me to synchrotron science was not so much the big fancy toys, but the opportunities it presents for making a pivotal difference in the careers of so many other scientists. The moment of solving a structure and seeing the density for the first time is immensely rewarding, and I have had the pleasure of sharing that moment with hundreds of brilliant minds. Since I am not competing with any of them our discussions can be open, and because their success is my success I can focus all my energies on studying the method itself. The answers to questions my users ask every day sets the compass of my research, like "what exposure time should I use?" Being in this position has allowed me to learn a great deal about all aspects of structural science: biology, physics, chemistry, computing, and those little laboratory tricks that never get published. In preparation for the Diffraction Methods GRC that would have happened last week if not for the pandemic, I surveyed the community for the biggest and most impactful challenges our community faces. I was surprised to find the #1 answer was: money. I was surprised because I believe the impact that science has on the human condition is far greater than the dollars put into it. Like many I have become an expert at doing more with less, but now that we have seen the massive economic impact that just one virus can have, perhaps it is time we scientists started to think on a larger and grander scale. We are not held back by our budgets; we are held back by limiting our thinking to the budget we think we can get. What would you do with a million, a billion, or a trillion dollars? If you can't think of anything, think harder. Ending a global pandemic with only \$1 trillion would be a bargain. All we need is a plan that will work. I will outline an idea for testing every human being on the planet for SARS-CoV-2 simultaneously and encourage the audience to point out any problems with this plan. No single person can do this on their own, we need to work together, and I believe we will look back on 2020, in hindsight, and realize this is the way science works best.