Hi! I am so excited to be here to talk to you today as an ambassador from the world of SCIENCE

I've spent the last 8 years working in labs trying to understand molecular relationships that are critical to normal cellular function. Right now, I study a disease called Charcot Marie Tooth, which is a peripheral neuropathy with a known genetic cause but an unknown molecular disease mechanism. So – I build virus' to infect cells that model this disease and try to fix it – you know, NBD.

But today I want to talk about something else. I want to talk about the larger environment that shapes how science gets done, how scientists get rewarded, and how the output of scientific research gets packaged and accessed.

Now, this is an open science talk. And in my field, there are a few kinds of open science talks

1. I can show you how much money publishers make and how little research you can access – this talk does a good job of riling people up especially if you preach this to the choir
2. I can focus the reproducibility crisis in science and on tools to improve reproducibility, talk about metadata, how researchers can learn from open source processes
3. But I want to talk about culture

In order to do that, this slide will give you enough background to understand how science works today.

I'll tell it as a personal story:
When I started in the field 8 years ago, it blew my mind that serious researchers were willing to train me to design experiments and collect data on million dollar microscopes
That no longer amazes me, I was cheap and enthusiastic labor.
The longer I stayed in the field, the more I learned about scary things like getting scooped or sabotaged… and I thought all that sounded nuts, but no! I don't want to work on something for five years and have some other group publish first and steal my thunder!
But after even longer in the field… even people who get scooped still do ok. They get jobs. Their world doesn't end. They publish in Neuron instead of Nature. It's not the end. Because there are very few fields where there's just one answer or done discovery that closes the door on a scientific question. So, since it's all about the data, and we are all going to keep our jobs what's the big deal?
Oh… scientific currency of high impact papers is giving data the short end of the stick right now

So the problem is that scientists have reasons for not wanting to share data or and these generally boil down to protecting their interests

There's a vocal minority of scientists who work openly
And documented evidence that this improves the impact of your research
But it's not the standard/normal way of working now
Why is it so hard to move away from existing systems, even when they're bad/dysfunctional?

Why does the Open revolution in science need you? Cultural change happens one person at a time…

1. You fund all of our work – taxpayer agitation for access to research methods and outputs can make an impact.
    a. Blumenauer and other science-friendly politicians
    b. White House OSTP
2. You are friendly smart people who can engage on this topic
    a. Encourage you to learn more
3. Tool, infrastructure, collaboration
    a. Science Hack Day is coming to PDX!
    b. WIS networking night at OMSI
    c. Networking and career development

In closing
Like any big messy system, powerful interests control aspects of science now (publishing, instrumentation...) and I'm not sure how that's going to go. But a lot of smart and enthusiastic people are building new platforms, trying new methods of communicating research, and some of them are working/being adopted.

But we need you.

I encourage you all you learn more about research and come to these events to make some friends and collaborations!

HAHAHA jk – like any entrenched system parts work well and parts of dysfunctional