



# RESEARCH2REALITY

Shining a light on research & innovation.

## Come Together, Right Now, Over Science

An interview with 2018 Gairdner Award Laureates:

**Edward Boyden**, Neurobiological Engineer, MIT McGovern Institute

**Christopher Murray**, Physician & Health Economist, University of Washington

**Alan Lopez**, Health Economist, University of Melbourne

### Edward Boyden

Biology and medicine are really, really tough problems. If you could solve these by being smart and working hard by yourself, we would have solved them already. It's hard to think of a single biological discovery or a single medical cure that was done only by one person working alone.

### Christopher Murray

The Global Burden of Disease is a super dynamic collaboration. We started with one tool kit thirty years ago, and now there's a tremendous amount of energy about machine learning, how you apply some of the advances in computer science to what we do. And what we want to make sure is that we've got all the people who are at the edge of the analysis and the methods so that in five years there may be something completely new that will drive innovation and study. And I think we've been successful by having a multi-disciplinary collaboration.

### Edward Boyden

Biology and medicine require serendipity. You have to be willing to go out and look for luck. And so one of the things I teach my students is how to, if you will, engineer your luck. Can you be deliberately lucky?

The ability to look at a problem from many perspectives is key. If somebody is an expert at a problem, but they don't know how to solve it, and another person is an engineer who can solve problems but they don't know what the

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big problems are, they naturally want to work together, because that's how you have more impact. And so I call this strategy 'architecting' — I try to bring together people in small groups to help them work together. And now at our group at MIT, we collaborate closely with probably about a hundred groups all over the world, and that's at the core of how we innovate.

### **Alan Lopez**

Chris has training health economics and medicine; I have training in demography and epidemiology. These are good basic sciences, but they weren't enough, obviously. And as we've evolved, we've gotten more and more disciplines involved.

### **Christopher Murray**

In terms of figuring out what are people's health problems, and then getting people to use that information, the most important step of that process is for people in each country to understand the data, the methods, and the results, and to really own them — to be a co-owner of them. And that model of co-ownership of the study means that you have a whole group of people who will then take up, using the results, in that policy context.

Two or three weeks ago, our collaborative team in India published I think six analyses around the Burden of Disease by state, and it was the front page of every major Indian newspaper. You had the government saying, this is really important and we're going to act on this. That model of co-ownership is, I think, the right model, and we're going to keep investing and building that collaboration.