

WEBVTT

NOTE duration:"00:15:10.1290000"

NOTE language:en-us

NOTE Confidence: 0.8816682

00:00:00.000 --> 00:00:01.866 And I'm just really happy to

NOTE Confidence: 0.8816682

00:00:01.866 --> 00:00:04.008 be here today to talk to you.

NOTE Confidence: 0.8816682

00:00:04.010 --> 00:00:06.712 You know, for the first time since

NOTE Confidence: 0.8816682

00:00:06.712 --> 00:00:09.428 I joined the community at Yale.

NOTE Confidence: 0.8816682

00:00:09.430 --> 00:00:11.290 And so today's you know Workshop

NOTE Confidence: 0.8816682

00:00:11.290 --> 00:00:13.130 is focused on human genomics,

NOTE Confidence: 0.8816682

00:00:13.130 --> 00:00:14.810 data science and precision medicine,

NOTE Confidence: 0.8816682

00:00:14.810 --> 00:00:16.882 and it's sort of designed to highlight

NOTE Confidence: 0.8816682

00:00:16.882 --> 00:00:18.961 some of the plans and activities

NOTE Confidence: 0.8816682

00:00:18.961 --> 00:00:20.846 for Center for genomic health.

NOTE Confidence: 0.8539846

00:00:22.860 --> 00:00:24.676 And you know, I'm going to start things

NOTE Confidence: 0.8539846

00:00:24.676 --> 00:00:26.395 off here by giving you an introduction

NOTE Confidence: 0.8539846

00:00:26.395 --> 00:00:28.268 to sort of what we're trying to do,

NOTE Confidence: 0.8539846

00:00:28.270 --> 00:00:29.590 and I'm going to keep it

NOTE Confidence: 0.8539846

00:00:29.590 --> 00:00:30.850 at a really high level.

NOTE Confidence: 0.8539846

00:00:30.850 --> 00:00:32.730 I have no data and very few slides.

NOTE Confidence: 0.8539846

00:00:32.730 --> 00:00:34.375 I really want to sort of outline,

NOTE Confidence: 0.8539846

00:00:34.380 --> 00:00:36.476 you know where the field is at and

NOTE Confidence: 0.8539846

00:00:36.476 --> 00:00:38.491 where we think that we can make

NOTE Confidence: 0.8539846

00:00:38.491 --> 00:00:40.290 a difference in the long term.

NOTE Confidence: 0.8539846

00:00:40.290 --> 00:00:42.530 But before I could start like to reiterate,

NOTE Confidence: 0.8539846

00:00:42.530 --> 00:00:43.930 you know what Antonio said,

NOTE Confidence: 0.8539846

00:00:43.930 --> 00:00:45.106 which is, you know,

NOTE Confidence: 0.8539846

00:00:45.106 --> 00:00:46.870 this center is really the product

NOTE Confidence: 0.8539846

00:00:46.934 --> 00:00:48.880 of a joint effort from the school

NOTE Confidence: 0.8539846

00:00:48.880 --> 00:00:50.791 and the hospital and really was born

NOTE Confidence: 0.8539846

00:00:50.791 --> 00:00:52.575 out of a shared vision and support

NOTE Confidence: 0.8539846

00:00:52.575 --> 00:00:54.290 of the prior Dean bulb output in

NOTE Confidence: 0.8539846

00:00:54.290 --> 00:00:55.970 the prior President Rick Tequila.

NOTE Confidence: 0.8539846

00:00:55.970 --> 00:00:56.723 And you know,
NOTE Confidence: 0.8539846

00:00:56.723 --> 00:00:58.480 really is the product of a lot
NOTE Confidence: 0.8539846

00:00:58.539 --> 00:01:00.285 of people's work over the course
NOTE Confidence: 0.8539846

00:01:00.285 --> 00:01:01.850 of the last couple years.
NOTE Confidence: 0.8539846

00:01:01.850 --> 00:01:02.300 You know,
NOTE Confidence: 0.8539846

00:01:02.300 --> 00:01:04.100 long before I got here and I really
NOTE Confidence: 0.8539846

00:01:04.150 --> 00:01:05.625 appreciate that and I appreciate
NOTE Confidence: 0.8539846

00:01:05.625 --> 00:01:07.490 the ongoing support of the current
NOTE Confidence: 0.8539846

00:01:07.490 --> 00:01:08.850 of the current leadership.
NOTE Confidence: 0.8539846

00:01:08.850 --> 00:01:10.370 You know in this.
NOTE Confidence: 0.8539846

00:01:10.370 --> 00:01:12.650 This joint leadership is really emblematic
NOTE Confidence: 0.8539846

00:01:12.717 --> 00:01:15.189 of the two prong mission of our center,
NOTE Confidence: 0.8539846

00:01:15.190 --> 00:01:17.367 which on one hand is to leave
NOTE Confidence: 0.8539846

00:01:17.367 --> 00:01:18.930 cutting edge genomic research.
NOTE Confidence: 0.8539846

00:01:18.930 --> 00:01:20.630 And on the other hand,
NOTE Confidence: 0.8539846

00:01:20.630 --> 00:01:23.262 is to do our very best to implement

NOTE Confidence: 0.8539846

00:01:23.262 --> 00:01:25.123 these technologies into the clinic

NOTE Confidence: 0.8539846

00:01:25.123 --> 00:01:26.635 to make meaningful improvements

NOTE Confidence: 0.8539846

00:01:26.635 --> 00:01:29.033 in health care and and both of

NOTE Confidence: 0.8539846

00:01:29.033 --> 00:01:30.827 these arms need to work together,

NOTE Confidence: 0.8539846

00:01:30.830 --> 00:01:33.390 and they both need to be strong if

NOTE Confidence: 0.8539846

00:01:33.390 --> 00:01:36.268 we're going to be successful in our vision,

NOTE Confidence: 0.8539846

00:01:36.270 --> 00:01:38.990 and so you know, I'm a basic scientist,

NOTE Confidence: 0.8539846

00:01:38.990 --> 00:01:39.590 genome biologist,

NOTE Confidence: 0.8539846

00:01:39.590 --> 00:01:40.190 Human Genetics.

NOTE Confidence: 0.8539846

00:01:40.190 --> 00:01:42.500 Bring that sort of expertise to the table,

NOTE Confidence: 0.8539846

00:01:42.500 --> 00:01:44.456 but there's really lots of different

NOTE Confidence: 0.8539846

00:01:44.456 --> 00:01:45.760 perspectives that are important

NOTE Confidence: 0.8539846

00:01:45.809 --> 00:01:47.587 here and I look forward to working

NOTE Confidence: 0.8539846

00:01:47.587 --> 00:01:49.178 with everybody for a long time

NOTE Confidence: 0.8539846

00:01:49.178 --> 00:01:50.218 on these important issues.

NOTE Confidence: 0.8539846

00:01:50.220 --> 00:01:52.526 And so, without further ado, you know.
NOTE Confidence: 0.8539846

00:01:52.526 --> 00:01:55.248 So what is what is genomic health, right?
NOTE Confidence: 0.8539846

00:01:55.248 --> 00:01:57.756 So it's an emerging medical discipline
NOTE Confidence: 0.8539846

00:01:57.756 --> 00:02:00.274 that involves anomic information about an
NOTE Confidence: 0.8539846

00:02:00.274 --> 00:02:03.067 individual as part of their clinical care.
NOTE Confidence: 0.8539846

00:02:03.070 --> 00:02:05.032 So that substantial fraction of the
NOTE Confidence: 0.8539846

00:02:05.032 --> 00:02:07.488 human disease burden has a genetic component,
NOTE Confidence: 0.8539846

00:02:07.490 --> 00:02:07.812 right?
NOTE Confidence: 0.8539846

00:02:07.812 --> 00:02:09.744 So 5% of the world's population
NOTE Confidence: 0.8539846

00:02:09.744 --> 00:02:11.570 suffers from a rare disease.
NOTE Confidence: 0.8539846

00:02:11.570 --> 00:02:13.610 Many of these are caused by
NOTE Confidence: 0.8539846

00:02:13.610 --> 00:02:14.630 rare pathogenic mutations.
NOTE Confidence: 0.8539846

00:02:14.630 --> 00:02:17.238 Most people at some point in your life
NOTE Confidence: 0.8539846

00:02:17.238 --> 00:02:19.387 will suffer from a common disease,
NOTE Confidence: 0.8539846

00:02:19.390 --> 00:02:22.690 and we know that these show
NOTE Confidence: 0.8539846

00:02:22.690 --> 00:02:23.790 substantial heritability.

NOTE Confidence: 0.8539846

00:02:23.790 --> 00:02:25.608 Now we can collect genomic data.

NOTE Confidence: 0.8539846

00:02:25.610 --> 00:02:27.736 You know affordably in that scale, right?

NOTE Confidence: 0.8539846

00:02:27.736 --> 00:02:30.760 So the obvious thing that we want to do is,

NOTE Confidence: 0.8539846

00:02:30.760 --> 00:02:32.080 you know sequence everybody's

NOTE Confidence: 0.8539846

00:02:32.080 --> 00:02:34.060 genome and collect lots of other

NOTE Confidence: 0.8539846

00:02:34.118 --> 00:02:35.606 types of OMICS data as well,

NOTE Confidence: 0.8539846

00:02:35.610 --> 00:02:37.284 and use these data to inform

NOTE Confidence: 0.8539846

00:02:37.284 --> 00:02:38.940 health care in the process.

NOTE Confidence: 0.8539846

00:02:38.940 --> 00:02:40.758 We want to improve care and

NOTE Confidence: 0.8539846

00:02:40.758 --> 00:02:41.667 obviously reduce costs,

NOTE Confidence: 0.8539846

00:02:41.670 --> 00:02:43.488 and so this vision, you know,

NOTE Confidence: 0.8539846

00:02:43.490 --> 00:02:44.411 is not controversial.

NOTE Confidence: 0.8539846

00:02:44.411 --> 00:02:46.560 This has been the vision for the

NOTE Confidence: 0.8539846

00:02:46.623 --> 00:02:48.647 past 30 years, and you know,

NOTE Confidence: 0.8539846

00:02:48.647 --> 00:02:51.101 there's lots of really exciting applications

NOTE Confidence: 0.8539846

00:02:51.101 --> 00:02:53.868 we won't have time to cover them all.

NOTE Confidence: 0.8539846

00:02:53.870 --> 00:02:56.036 And there's been some really nice

NOTE Confidence: 0.8539846

00:02:56.036 --> 00:02:58.020 great success stories along the way,

NOTE Confidence: 0.8539846

00:02:58.020 --> 00:02:58.355 right?

NOTE Confidence: 0.8539846

00:02:58.355 --> 00:03:01.370 But I think it's fair to say that you

NOTE Confidence: 0.8596626

00:03:01.449 --> 00:03:03.555 know, for the vast majority of

NOTE Confidence: 0.8596626

00:03:03.555 --> 00:03:05.294 heritable conditions, you know we're

NOTE Confidence: 0.8596626

00:03:05.294 --> 00:03:07.034 barely scratching the surface of

NOTE Confidence: 0.8596626

00:03:07.034 --> 00:03:09.440 what we could be doing. OK and.

NOTE Confidence: 0.8741393

00:03:12.210 --> 00:03:13.914 You know we need to do our best

NOTE Confidence: 0.8741393

00:03:13.914 --> 00:03:15.825 to push the envelope here because

NOTE Confidence: 0.8741393

00:03:15.825 --> 00:03:17.530 it's an important problem, right?

NOTE Confidence: 0.8741393

00:03:17.530 --> 00:03:19.490 And so so why is that so?

NOTE Confidence: 0.8741393

00:03:19.490 --> 00:03:21.818 It's worth sort of taking a step back

NOTE Confidence: 0.8741393

00:03:21.818 --> 00:03:23.775 and thinking about the big picture about

NOTE Confidence: 0.8741393

00:03:23.775 --> 00:03:26.244 where we are as a field right now and

NOTE Confidence: 0.8741393

00:03:26.244 --> 00:03:28.792 where we need to go because really motivates.

NOTE Confidence: 0.8741393

00:03:28.792 --> 00:03:32.400 Sort of how we're thinking about the center.

NOTE Confidence: 0.8741393

00:03:32.400 --> 00:03:33.596 And so you know,

NOTE Confidence: 0.8741393

00:03:33.596 --> 00:03:35.390 we've come a long way right?

NOTE Confidence: 0.8741393

00:03:35.390 --> 00:03:37.734 So you're 20 years ago we didn't even

NOTE Confidence: 0.8741393

00:03:37.734 --> 00:03:39.878 notice single human genome look like OK,

NOTE Confidence: 0.8741393

00:03:39.880 --> 00:03:41.886 and the Human Genome Project, you know,

NOTE Confidence: 0.8741393

00:03:41.886 --> 00:03:43.692 sort of gave us this solid foundation

NOTE Confidence: 0.8741393

00:03:43.692 --> 00:03:45.857 of human genome structure and function,

NOTE Confidence: 0.8741393

00:03:45.860 --> 00:03:48.510 and it allowed us to sort of start to do

NOTE Confidence: 0.8741393

00:03:48.583 --> 00:03:51.239 Human Genetics in a in a systematic way.

NOTE Confidence: 0.8741393

00:03:51.240 --> 00:03:53.392 OK, and the next big landmark was the

NOTE Confidence: 0.8741393

00:03:53.392 --> 00:03:54.967 development of these high throughput

NOTE Confidence: 0.8741393

00:03:54.967 --> 00:03:56.597 DNA sequencing methods that allowed

NOTE Confidence: 0.8741393

00:03:56.597 --> 00:03:58.709 us to go beyond one genome start.

NOTE Confidence: 0.8741393

00:03:58.710 --> 00:03:59.942 Look at many genomes,
NOTE Confidence: 0.8741393

00:03:59.942 --> 00:04:01.482 start to implement these technologies
NOTE Confidence: 0.8741393

00:04:01.482 --> 00:04:02.370 into the clinic.
NOTE Confidence: 0.8741393

00:04:02.370 --> 00:04:02.802 I mean,
NOTE Confidence: 0.8741393

00:04:02.802 --> 00:04:04.530 you know a couple years ago we finally
NOTE Confidence: 0.8741393

00:04:04.578 --> 00:04:06.156 reached that that long awaited landmark
NOTE Confidence: 0.8741393

00:04:06.156 --> 00:04:08.570 of being able to sequence a genome for \$1000.
NOTE Confidence: 0.8741393

00:04:08.570 --> 00:04:10.058 And this was sort of what
NOTE Confidence: 0.8741393

00:04:10.058 --> 00:04:11.050 everybody was waiting for,
NOTE Confidence: 0.8741393

00:04:11.050 --> 00:04:12.830 right?
NOTE Confidence: 0.8741393

00:04:12.830 --> 00:04:15.022 So these first two steps notice there's many
NOTE Confidence: 0.8741393

00:04:15.022 --> 00:04:16.827 more important things that we need to do,
NOTE Confidence: 0.8741393

00:04:16.830 --> 00:04:17.790 but you know,
NOTE Confidence: 0.8741393

00:04:17.790 --> 00:04:20.030 we're on pretty solid ground right now.
NOTE Confidence: 0.8741393

00:04:20.030 --> 00:04:22.494 And right now we're kind of in the
NOTE Confidence: 0.8741393

00:04:22.494 --> 00:04:24.386 middle of these second, third,

NOTE Confidence: 0.8741393

00:04:24.386 --> 00:04:25.866 and fourth steps where we're

NOTE Confidence: 0.8741393

00:04:25.866 --> 00:04:27.800 trying to take these technologies,

NOTE Confidence: 0.8741393

00:04:27.800 --> 00:04:29.828 apply them at scale across the

NOTE Confidence: 0.8741393

00:04:29.828 --> 00:04:30.504 human population,

NOTE Confidence: 0.8741393

00:04:30.510 --> 00:04:32.508 learn about how genetic variation looks

NOTE Confidence: 0.8741393

00:04:32.508 --> 00:04:34.230 across all different ancestry groups,

NOTE Confidence: 0.8741393

00:04:34.230 --> 00:04:35.915 learn about how genetic variants

NOTE Confidence: 0.8741393

00:04:35.915 --> 00:04:36.926 operate in cells,

NOTE Confidence: 0.8741393

00:04:36.930 --> 00:04:39.898 and obviously to take.

NOTE Confidence: 0.8741393

00:04:39.900 --> 00:04:41.944 You know to look at genetic variation

NOTE Confidence: 0.8741393

00:04:41.944 --> 00:04:44.117 in the context of look the whole

NOTE Confidence: 0.8741393

00:04:44.117 --> 00:04:46.362 companion of human diseases and start to

NOTE Confidence: 0.8741393

00:04:46.362 --> 00:04:48.348 catalog all the different variants that

NOTE Confidence: 0.8741393

00:04:48.348 --> 00:04:50.614 actually have an effect on disease risk,

NOTE Confidence: 0.8741393

00:04:50.614 --> 00:04:50.930 right?

NOTE Confidence: 0.8741393

00:04:50.930 --> 00:04:53.186 And we're kind of in the very beginning

NOTE Confidence: 0.8741393

00:04:53.186 --> 00:04:55.826 of this last stage or sort of taking

NOTE Confidence: 0.8741393

00:04:55.826 --> 00:04:57.545 this information and trying to

NOTE Confidence: 0.8741393

00:04:57.545 --> 00:04:59.750 implement it in the health care system,

NOTE Confidence: 0.8741393

00:04:59.750 --> 00:05:00.075 right?

NOTE Confidence: 0.8741393

00:05:00.075 --> 00:05:02.025 Some of the really exciting technologies

NOTE Confidence: 0.8741393

00:05:02.025 --> 00:05:03.947 are using polygenic risk scores to

NOTE Confidence: 0.8741393

00:05:03.947 --> 00:05:05.729 partition people by common disease risk.

NOTE Confidence: 0.8741393

00:05:05.730 --> 00:05:07.400 Using this technology is to

NOTE Confidence: 0.8741393

00:05:07.400 --> 00:05:08.736 increase the diagnostics diagnostic

NOTE Confidence: 0.8741393

00:05:08.736 --> 00:05:09.950 yield for rare disease.

NOTE Confidence: 0.8741393

00:05:09.950 --> 00:05:12.320 And using these knowledge to

NOTE Confidence: 0.8741393

00:05:12.320 --> 00:05:14.690 drive drug discovery or CRISPR

NOTE Confidence: 0.8741393

00:05:14.776 --> 00:05:17.428 based therapies right and so the.

NOTE Confidence: 0.8741393

00:05:17.430 --> 00:05:19.398 There's a lot to do here.

NOTE Confidence: 0.8741393

00:05:19.400 --> 00:05:21.040 The possibilities are really immense,

NOTE Confidence: 0.8741393

00:05:21.040 --> 00:05:21.382 right?

NOTE Confidence: 0.8741393

00:05:21.382 --> 00:05:23.776 And I think you know we've been

NOTE Confidence: 0.8741393

00:05:23.776 --> 00:05:26.578 trying to do this for 30 years and I

NOTE Confidence: 0.8741393

00:05:26.578 --> 00:05:29.204 think 30 years from now we'll look at

NOTE Confidence: 0.8741393

00:05:29.204 --> 00:05:31.536 the moment that we're in right now.

NOTE Confidence: 0.8741393

00:05:31.536 --> 00:05:34.160 As you know, maybe the Golden age, right?

NOTE Confidence: 0.8741393

00:05:34.160 --> 00:05:35.795 Maybe the inflection point between

NOTE Confidence: 0.8741393

00:05:35.795 --> 00:05:38.090 what came before and what came after.

NOTE Confidence: 0.8741393

00:05:38.090 --> 00:05:39.402 But like right now,

NOTE Confidence: 0.8741393

00:05:39.402 --> 00:05:41.370 it's it's kind of moving slow,

NOTE Confidence: 0.8741393

00:05:41.370 --> 00:05:41.671 actually,

NOTE Confidence: 0.8741393

00:05:41.671 --> 00:05:44.079 and we're sort of in this hard slog

NOTE Confidence: 0.8741393

00:05:44.079 --> 00:05:46.418 of trying to lay the foundation

NOTE Confidence: 0.8741393

00:05:46.418 --> 00:05:47.998 of knowledge and technologies

NOTE Confidence: 0.8741393

00:05:47.998 --> 00:05:49.706 that allow us to do this.

NOTE Confidence: 0.8741393

00:05:49.710 --> 00:05:51.300 Not in an anecdotal way,
NOTE Confidence: 0.8741393

00:05:51.300 --> 00:05:54.153 but in a systematic way in a real way.
NOTE Confidence: 0.807848855

00:05:54.160 --> 00:05:56.776 OK so. We're going to slide for awhile,
NOTE Confidence: 0.807848855

00:05:56.780 --> 00:05:57.488 so get comfortable.
NOTE Confidence: 0.807848855

00:05:57.488 --> 00:05:59.157 I mean, I want to discuss or some of
NOTE Confidence: 0.807848855

00:05:59.157 --> 00:06:00.933 the some of the challenges here because
NOTE Confidence: 0.807848855

00:06:00.933 --> 00:06:02.453 these challenges really would motivate
NOTE Confidence: 0.807848855

00:06:02.453 --> 00:06:04.217 like what we're trying to do, OK?
NOTE Confidence: 0.807848855

00:06:04.217 --> 00:06:06.152 So the first first challenge
NOTE Confidence: 0.807848855

00:06:06.152 --> 00:06:08.015 here is genome analysis. OK,
NOTE Confidence: 0.807848855

00:06:08.015 --> 00:06:10.850 so you know we can produce genomic data now.
NOTE Confidence: 0.807848855

00:06:10.850 --> 00:06:11.478 Incredible scale,
NOTE Confidence: 0.807848855

00:06:11.478 --> 00:06:13.048 but we're still not there.
NOTE Confidence: 0.807848855

00:06:13.050 --> 00:06:15.087 Still a lot of challenges in how
NOTE Confidence: 0.807848855

00:06:15.087 --> 00:06:16.830 we analyze and interpret it,
NOTE Confidence: 0.807848855

00:06:16.830 --> 00:06:18.744 so there's types of genetic variants

NOTE Confidence: 0.807848855

00:06:18.744 --> 00:06:20.610 that are very difficult to detect.

NOTE Confidence: 0.807848855

00:06:20.610 --> 00:06:23.208 There's parts of the genome that

NOTE Confidence: 0.807848855

00:06:23.208 --> 00:06:26.188 are really hard for us to look at.

NOTE Confidence: 0.807848855

00:06:26.190 --> 00:06:28.764 It's very difficult for us to

NOTE Confidence: 0.807848855

00:06:28.764 --> 00:06:31.831 predict the function or the impact

NOTE Confidence: 0.807848855

00:06:31.831 --> 00:06:34.367 of genetic variants computationally.

NOTE Confidence: 0.807848855

00:06:34.370 --> 00:06:36.484 You know this is the famous variants

NOTE Confidence: 0.807848855

00:06:36.484 --> 00:06:37.850 of unknown significance problem,

NOTE Confidence: 0.807848855

00:06:37.850 --> 00:06:39.992 and it's a huge problem not playing

NOTE Confidence: 0.807848855

00:06:39.992 --> 00:06:41.949 field and there's no easy solution,

NOTE Confidence: 0.807848855

00:06:41.950 --> 00:06:43.530 and it's something that that

NOTE Confidence: 0.807848855

00:06:43.530 --> 00:06:44.794 we need to solve.

NOTE Confidence: 0.807848855

00:06:44.800 --> 00:06:47.005 You know, one approaches, you know better,

NOTE Confidence: 0.807848855

00:06:47.010 --> 00:06:48.962 fancier machine learning algorithms,

NOTE Confidence: 0.807848855

00:06:48.962 --> 00:06:50.914 and this is important.

NOTE Confidence: 0.807848855

00:06:50.920 --> 00:06:52.858 It helps to just have a
NOTE Confidence: 0.807848855

00:06:52.858 --> 00:06:54.150 lot more genomes around,
NOTE Confidence: 0.807848855

00:06:54.150 --> 00:06:55.722 so that's important too.
NOTE Confidence: 0.807848855

00:06:55.722 --> 00:06:58.631 But we also need a couple this
NOTE Confidence: 0.807848855

00:06:58.631 --> 00:07:00.986 effort with efforts to produce.
NOTE Confidence: 0.807848855

00:07:00.990 --> 00:07:02.385 Catalogs of what variants do
NOTE Confidence: 0.807848855

00:07:02.385 --> 00:07:03.780 in cells using high throughput
NOTE Confidence: 0.807848855

00:07:03.828 --> 00:07:05.148 functional genomics methods so that
NOTE Confidence: 0.807848855

00:07:05.148 --> 00:07:07.273 we have good data to train the next
NOTE Confidence: 0.807848855

00:07:07.273 --> 00:07:08.773 generation of AI based methods for
NOTE Confidence: 0.807848855

00:07:08.773 --> 00:07:10.083 for interpreting genetic variation.
NOTE Confidence: 0.807848855

00:07:10.083 --> 00:07:13.242 And this is what we need to do if
NOTE Confidence: 0.807848855

00:07:13.242 --> 00:07:15.168 we're going to have these technologies
NOTE Confidence: 0.807848855

00:07:15.168 --> 00:07:17.237 being the clinic in a robust way.
NOTE Confidence: 0.807848855

00:07:17.240 --> 00:07:18.268 I'm at least questions.
NOTE Confidence: 0.807848855

00:07:18.268 --> 00:07:19.553 These are questions that our

NOTE Confidence: 0.807848855

00:07:19.553 --> 00:07:20.820 center is very interested in.

NOTE Confidence: 0.807848855

00:07:20.820 --> 00:07:22.356 Is something in my own lab,

NOTE Confidence: 0.807848855

00:07:22.360 --> 00:07:25.430 has worked on for a long time and we think

NOTE Confidence: 0.807848855

00:07:25.504 --> 00:07:28.206 it's going to really push the needle.

NOTE Confidence: 0.807848855

00:07:28.210 --> 00:07:29.932 So the second big challenge here

NOTE Confidence: 0.807848855

00:07:29.932 --> 00:07:31.801 is that this effort to catalog

NOTE Confidence: 0.807848855

00:07:31.801 --> 00:07:33.456 variants that cause disease is.

NOTE Confidence: 0.807848855

00:07:33.460 --> 00:07:34.700 It's just really hard.

NOTE Confidence: 0.807848855

00:07:34.700 --> 00:07:35.010 OK,

NOTE Confidence: 0.807848855

00:07:35.010 --> 00:07:37.282 that's fair to say that it's a lot

NOTE Confidence: 0.807848855

00:07:37.282 --> 00:07:38.583 harder than people appreciated

NOTE Confidence: 0.807848855

00:07:38.583 --> 00:07:40.258 10 or 20 years ago,

NOTE Confidence: 0.807848855

00:07:40.260 --> 00:07:42.416 and there's lots of reasons for that,

NOTE Confidence: 0.807848855

00:07:42.420 --> 00:07:45.510 but I'll but I'll go into a few of them,

NOTE Confidence: 0.807848855

00:07:45.510 --> 00:07:48.300 right? So on one hand.

NOTE Confidence: 0.807848855

00:07:48.300 --> 00:07:49.890 We now know that common diseases,
NOTE Confidence: 0.807848855

00:07:49.890 --> 00:07:51.480 and in fact most human traits
NOTE Confidence: 0.807848855

00:07:51.480 --> 00:07:52.531 are highly polygenic, right?
NOTE Confidence: 0.807848855

00:07:52.531 --> 00:07:54.288 Which means we have we need to
NOTE Confidence: 0.807848855

00:07:54.288 --> 00:07:55.887 study very large sample sizes in
NOTE Confidence: 0.807848855

00:07:55.887 --> 00:07:57.782 the range of 10s to hundreds of
NOTE Confidence: 0.807848855

00:07:57.782 --> 00:07:59.414 thousands of people if not millions
NOTE Confidence: 0.807848855

00:07:59.414 --> 00:08:01.874 of people you know to really get
NOTE Confidence: 0.807848855

00:08:01.874 --> 00:08:03.929 a handle on the genetics.
NOTE Confidence: 0.807848855

00:08:03.930 --> 00:08:05.220 And even for rare Mendelian
NOTE Confidence: 0.807848855

00:08:05.220 --> 00:08:06.817 diseases where we sort of think
NOTE Confidence: 0.807848855

00:08:06.817 --> 00:08:08.567 about them as being sort of simple,
NOTE Confidence: 0.807848855

00:08:08.570 --> 00:08:10.677 they can also be quite complicated due
NOTE Confidence: 0.807848855

00:08:10.677 --> 00:08:13.068 to the effects of incomplete penetrance.
NOTE Confidence: 0.807848855

00:08:13.070 --> 00:08:15.778 I'm very well expressivity.
NOTE Confidence: 0.807848855

00:08:15.780 --> 00:08:17.315 And this can also require

NOTE Confidence: 0.807848855

00:08:17.315 --> 00:08:18.236 larger sample sizes,

NOTE Confidence: 0.807848855

00:08:18.240 --> 00:08:19.884 and we specially need that if

NOTE Confidence: 0.807848855

00:08:19.884 --> 00:08:21.919 we want to map the modifiers.

NOTE Confidence: 0.807848855

00:08:21.920 --> 00:08:23.148 The protective alleles that

NOTE Confidence: 0.807848855

00:08:23.148 --> 00:08:24.377 suggest drug targets, right?

NOTE Confidence: 0.807848855

00:08:24.377 --> 00:08:26.219 So for both of these reasons,

NOTE Confidence: 0.807848855

00:08:26.220 --> 00:08:27.138 no one institution,

NOTE Confidence: 0.807848855

00:08:27.138 --> 00:08:28.056 no one lab,

NOTE Confidence: 0.807848855

00:08:28.060 --> 00:08:29.908 maybe not even any one nation

NOTE Confidence: 0.807848855

00:08:29.908 --> 00:08:32.050 can really do this on their own.

NOTE Confidence: 0.807848855

00:08:32.050 --> 00:08:34.332 We need to be participating in large

NOTE Confidence: 0.807848855

00:08:34.332 --> 00:08:36.264 scale consortia and team science that

NOTE Confidence: 0.807848855

00:08:36.264 --> 00:08:38.343 really that really get it that we

NOTE Confidence: 0.81356585

00:08:38.404 --> 00:08:40.684 also need to be more clever about how

NOTE Confidence: 0.81356585

00:08:40.684 --> 00:08:42.790 we assemble human cohorts and how we

NOTE Confidence: 0.81356585

00:08:42.790 --> 00:08:44.014 incorporate deep phenotype information.
NOTE Confidence: 0.81356585

00:08:44.020 --> 00:08:46.837 So every health system needs to be a biobank.
NOTE Confidence: 0.81356585

00:08:46.840 --> 00:08:48.568 And and every bio bank you know needs
NOTE Confidence: 0.81356585

00:08:48.568 --> 00:08:50.331 to be connected to every other bio
NOTE Confidence: 0.81356585

00:08:50.331 --> 00:08:52.627 bank in a network that allows us to
NOTE Confidence: 0.81356585

00:08:52.627 --> 00:08:53.911 communicate and identify patients
NOTE Confidence: 0.81356585

00:08:53.911 --> 00:08:55.416 that have similar genomic profiles
NOTE Confidence: 0.81356585

00:08:55.416 --> 00:08:56.488 and similar phenotypic profiles.
NOTE Confidence: 0.81356585

00:08:56.490 --> 00:08:59.885 Just something that we need to do.
NOTE Confidence: 0.81356585

00:08:59.890 --> 00:09:01.714 And the third thing we need to do
NOTE Confidence: 0.81356585

00:09:01.714 --> 00:09:03.489 is make every effort to make sure
NOTE Confidence: 0.81356585

00:09:03.489 --> 00:09:05.945 that we do a better job at including
NOTE Confidence: 0.81356585

00:09:05.945 --> 00:09:07.088 diverse ancestry groups.
NOTE Confidence: 0.81356585

00:09:07.090 --> 00:09:08.746 In the studies that we do,
NOTE Confidence: 0.81356585

00:09:08.750 --> 00:09:09.491 for historical reasons,
NOTE Confidence: 0.81356585

00:09:09.491 --> 00:09:10.973 you know most of our knowledge

NOTE Confidence: 0.81356585

00:09:10.973 --> 00:09:12.812 is built upon large studies of

NOTE Confidence: 0.81356585

00:09:12.812 --> 00:09:13.739 European descent individuals.

NOTE Confidence: 0.81356585

00:09:13.740 --> 00:09:15.264 This is a real problem because

NOTE Confidence: 0.81356585

00:09:15.264 --> 00:09:16.935 it can actually as this trickles

NOTE Confidence: 0.81356585

00:09:16.935 --> 00:09:18.723 down into the health care arena,

NOTE Confidence: 0.81356585

00:09:18.730 --> 00:09:20.690 the algorithms that we use for risk

NOTE Confidence: 0.81356585

00:09:20.690 --> 00:09:21.850 prediction and clinical decision

NOTE Confidence: 0.81356585

00:09:21.850 --> 00:09:23.644 making are going to be biased, right?

NOTE Confidence: 0.81356585

00:09:23.644 --> 00:09:25.480 So we all need to do our part to

NOTE Confidence: 0.81356585

00:09:25.541 --> 00:09:27.586 alleviate this potential serious issue.

NOTE Confidence: 0.81356585

00:09:27.590 --> 00:09:30.490 And so this general question of how do we do?

NOTE Confidence: 0.81356585

00:09:30.490 --> 00:09:31.128 Gene discovery,

NOTE Confidence: 0.81356585

00:09:31.128 --> 00:09:32.723 the next generation of gene

NOTE Confidence: 0.81356585

00:09:32.723 --> 00:09:34.259 discovery projects that are bigger,

NOTE Confidence: 0.81356585

00:09:34.260 --> 00:09:35.250 use better technologies,

NOTE Confidence: 0.81356585

00:09:35.250 --> 00:09:37.230 and there are more diverse is
NOTE Confidence: 0.81356585

00:09:37.230 --> 00:09:39.276 a real key goal of our center,
NOTE Confidence: 0.81356585

00:09:39.280 --> 00:09:41.776 and in fact you know many of our
NOTE Confidence: 0.81356585

00:09:41.776 --> 00:09:43.982 members are participating in if not
NOTE Confidence: 0.81356585

00:09:43.982 --> 00:09:46.718 leading some of the most high profile
NOTE Confidence: 0.81356585

00:09:46.718 --> 00:09:49.934 high impact studies in the world right now.
NOTE Confidence: 0.81356585

00:09:49.940 --> 00:09:52.166 And the last thing I'll mention here,
NOTE Confidence: 0.81356585

00:09:52.170 --> 00:09:54.389 I'll do this a little bit faster.
NOTE Confidence: 0.81356585

00:09:54.390 --> 00:09:56.298 Maybe is that you know the
NOTE Confidence: 0.81356585

00:09:56.298 --> 00:09:57.570 last challenge here is,
NOTE Confidence: 0.81356585

00:09:57.570 --> 00:09:58.482 is disease mechanism?
NOTE Confidence: 0.81356585

00:09:58.482 --> 00:09:58.786 OK,
NOTE Confidence: 0.81356585

00:09:58.786 --> 00:10:00.982 so all of the things I've talked
NOTE Confidence: 0.81356585

00:10:00.982 --> 00:10:03.110 about this far oftentimes at the end
NOTE Confidence: 0.81356585

00:10:03.110 --> 00:10:05.517 of that you still have a correlation.
NOTE Confidence: 0.81356585

00:10:05.520 --> 00:10:07.494 You still just have an Association

NOTE Confidence: 0.81356585

00:10:07.494 --> 00:10:09.466 you don't necessarily know how that

NOTE Confidence: 0.81356585

00:10:09.466 --> 00:10:11.248 impacts the biology of the disease,

NOTE Confidence: 0.81356585

00:10:11.250 --> 00:10:12.918 and so it's really important that

NOTE Confidence: 0.81356585

00:10:12.918 --> 00:10:14.792 we take the results of these

NOTE Confidence: 0.81356585

00:10:14.792 --> 00:10:16.552 large scale studies and these

NOTE Confidence: 0.81356585

00:10:16.552 --> 00:10:17.608 clinical sequencing efforts,

NOTE Confidence: 0.81356585

00:10:17.610 --> 00:10:20.306 and we try to translate them into concrete

NOTE Confidence: 0.81356585

00:10:20.306 --> 00:10:22.089 knowledge about disease mechanism.

NOTE Confidence: 0.81356585

00:10:22.090 --> 00:10:24.162 And this is really hard because the

NOTE Confidence: 0.81356585

00:10:24.162 --> 00:10:26.428 approach will vary a lot depending on

NOTE Confidence: 0.81356585

00:10:26.428 --> 00:10:28.073 which disease you're talking about,

NOTE Confidence: 0.81356585

00:10:28.080 --> 00:10:30.278 and so we need to engage with

NOTE Confidence: 0.81356585

00:10:30.278 --> 00:10:30.906 disease experts.

NOTE Confidence: 0.81356585

00:10:30.910 --> 00:10:32.485 People who know exactly how

NOTE Confidence: 0.81356585

00:10:32.485 --> 00:10:33.745 how that disease works.

NOTE Confidence: 0.81356585

00:10:33.750 --> 00:10:35.320 We need to, you know,
NOTE Confidence: 0.81356585

00:10:35.320 --> 00:10:36.516 engage with animal models.
NOTE Confidence: 0.81356585

00:10:36.516 --> 00:10:38.790 We need to use stem cell models,
NOTE Confidence: 0.81356585

00:10:38.790 --> 00:10:40.850 organoid models.
NOTE Confidence: 0.81356585

00:10:40.850 --> 00:10:42.205 And we need high throughput
NOTE Confidence: 0.81356585

00:10:42.205 --> 00:10:43.828 functional methods that allow us to
NOTE Confidence: 0.81356585

00:10:43.828 --> 00:10:45.130 interrogate what these genes do in
NOTE Confidence: 0.81356585

00:10:45.130 --> 00:10:46.780 cells in a high throughput ways.
NOTE Confidence: 0.81356585

00:10:46.780 --> 00:10:50.140 A lot of results to parse through.
NOTE Confidence: 0.81356585

00:10:50.140 --> 00:10:51.865 And then another solution that
NOTE Confidence: 0.81356585

00:10:51.865 --> 00:10:53.982 we're really interested in from the
NOTE Confidence: 0.81356585

00:10:53.982 --> 00:10:55.652 standpoint of getting up disease
NOTE Confidence: 0.81356585

00:10:55.652 --> 00:10:58.008 biology is using health systems as a
NOTE Confidence: 0.81356585

00:10:58.008 --> 00:10:59.934 platform for learning about this right?
NOTE Confidence: 0.81356585

00:10:59.940 --> 00:11:01.630 And so if you have,
NOTE Confidence: 0.81356585

00:11:01.630 --> 00:11:05.010 if you have a lot of people where you have,

NOTE Confidence: 0.81356585
00:11:05.010 --> 00:11:06.230 you know genomic information
NOTE Confidence: 0.81356585
00:11:06.230 --> 00:11:08.060 and you also have well organized
NOTE Confidence: 0.81356585
00:11:08.110 --> 00:11:09.409 electronic health records,
NOTE Confidence: 0.81356585
00:11:09.410 --> 00:11:11.330 you can start to design studies
NOTE Confidence: 0.81356585
00:11:11.330 --> 00:11:13.247 where you select groups of people
NOTE Confidence: 0.81356585
00:11:13.247 --> 00:11:15.242 based on their genotype and do a
NOTE Confidence: 0.81356585
00:11:15.242 --> 00:11:17.598 better job at looking for phenotype
NOTE Confidence: 0.81356585
00:11:17.598 --> 00:11:19.202 and doing focused investigations.
NOTE Confidence: 0.8324761
00:11:19.210 --> 00:11:20.960 And this is really crucial.
NOTE Confidence: 0.8324761
00:11:20.960 --> 00:11:22.598 I think for taking this types
NOTE Confidence: 0.8324761
00:11:22.598 --> 00:11:24.389 of studies to the next level,
NOTE Confidence: 0.8324761
00:11:24.390 --> 00:11:26.189 and of course this is something that
NOTE Confidence: 0.8324761
00:11:26.189 --> 00:11:28.047 we're trying to build here at yo
NOTE Confidence: 0.8324761
00:11:28.047 --> 00:11:29.589 with the generations project in the
NOTE Confidence: 0.8324761
00:11:29.647 --> 00:11:31.307 computational health platform and you'll
NOTE Confidence: 0.8324761

00:11:31.307 --> 00:11:33.438 hear more about that later today.

NOTE Confidence: 0.8324761

00:11:33.438 --> 00:11:36.276 So I think look, we covered it.

NOTE Confidence: 0.8324761

00:11:36.276 --> 00:11:38.530 There's a lot of ground covered here.

NOTE Confidence: 0.8324761

00:11:38.530 --> 00:11:40.805 I think you know there's a few

NOTE Confidence: 0.8324761

00:11:40.805 --> 00:11:42.708 take home messages you know one.

NOTE Confidence: 0.8324761

00:11:42.710 --> 00:11:45.920 This is a really hard problem.

NOTE Confidence: 0.8324761

00:11:45.920 --> 00:11:47.753 It requires collaboration.

NOTE Confidence: 0.8324761

00:11:47.753 --> 00:11:51.419 It requires input from lots of

NOTE Confidence: 0.8324761

00:11:51.419 --> 00:11:53.860 different types of expertise.

NOTE Confidence: 0.8324761

00:11:53.860 --> 00:11:54.859 Right, and actually,

NOTE Confidence: 0.8324761

00:11:54.859 --> 00:11:56.857 you know the most exciting projects.

NOTE Confidence: 0.8324761

00:11:56.860 --> 00:11:58.725 The most impactful projects and

NOTE Confidence: 0.8324761

00:11:58.725 --> 00:12:01.351 initiatives are going to come at the

NOTE Confidence: 0.8324761

00:12:01.351 --> 00:12:03.780 intersection of areas that I just mentioned.

NOTE Confidence: 0.8324761

00:12:03.780 --> 00:12:06.270 OK, and that's really the motivation

NOTE Confidence: 0.8324761

00:12:06.270 --> 00:12:09.049 for forming the center is to have a

NOTE Confidence: 0.8324761

00:12:09.049 --> 00:12:11.146 team to have a venue for combining

NOTE Confidence: 0.8324761

00:12:11.146 --> 00:12:13.894 people with lots of different expertise

NOTE Confidence: 0.8324761

00:12:13.894 --> 00:12:16.476 that can tackle these questions

NOTE Confidence: 0.8324761

00:12:16.476 --> 00:12:20.697 in a in a really impactful way.

NOTE Confidence: 0.8324761

00:12:20.700 --> 00:12:23.444 And so we sort of formed this center.

NOTE Confidence: 0.8324761

00:12:23.450 --> 00:12:25.304 Now you know there's been going

NOTE Confidence: 0.8324761

00:12:25.304 --> 00:12:27.745 on for a couple years on the

NOTE Confidence: 0.8324761

00:12:27.745 --> 00:12:29.635 clinical side's been very active.

NOTE Confidence: 0.8324761

00:12:29.640 --> 00:12:31.878 We've now sort of assembled the

NOTE Confidence: 0.8324761

00:12:31.878 --> 00:12:34.173 first initial group of members who

NOTE Confidence: 0.8324761

00:12:34.173 --> 00:12:36.735 sort of span the whole range of

NOTE Confidence: 0.8324761

00:12:36.735 --> 00:12:38.897 expertise that I just talked about.

NOTE Confidence: 0.8324761

00:12:38.900 --> 00:12:40.930 And this is just an initial group.

NOTE Confidence: 0.8324761

00:12:40.930 --> 00:12:41.506 You know.

NOTE Confidence: 0.8324761

00:12:41.506 --> 00:12:44.120 I'm new here so I don't know everybody yet.

NOTE Confidence: 0.8324761

00:12:44.120 --> 00:12:46.400 And so if you know if you're doing
NOTE Confidence: 0.8324761

00:12:46.400 --> 00:12:48.757 relevant work and you want to get involved,
NOTE Confidence: 0.8324761

00:12:48.760 --> 00:12:50.210 you know, please contact me.
NOTE Confidence: 0.8324761

00:12:50.210 --> 00:12:52.240 So what are we going to wear?
NOTE Confidence: 0.8324761

00:12:52.240 --> 00:12:53.690 Center of Excellence in genomics?
NOTE Confidence: 0.8324761

00:12:53.690 --> 00:12:55.140 Data science in precision medicine?
NOTE Confidence: 0.8324761

00:12:55.140 --> 00:12:56.802 You know we're trying to harness
NOTE Confidence: 0.8324761

00:12:56.802 --> 00:12:57.910 these technologies to improve
NOTE Confidence: 0.8324761

00:12:57.961 --> 00:12:59.653 healthcare and our principles are to
NOTE Confidence: 0.8324761

00:12:59.653 --> 00:13:01.230 collaborate on high impact projects,
NOTE Confidence: 0.8324761

00:13:01.230 --> 00:13:02.994 to share data and tools and to
NOTE Confidence: 0.8324761

00:13:02.994 --> 00:13:04.710 really be a global partner.
NOTE Confidence: 0.8324761

00:13:04.710 --> 00:13:06.714 To participate in these very large
NOTE Confidence: 0.8324761

00:13:06.714 --> 00:13:08.050 population scale efforts that
NOTE Confidence: 0.8324761

00:13:08.111 --> 00:13:09.206 we really need to do.
NOTE Confidence: 0.8324761

00:13:09.210 --> 00:13:10.740 To push the envelope here,

NOTE Confidence: 0.8324761

00:13:10.740 --> 00:13:12.576 but to bring all that technology,

NOTE Confidence: 0.8324761

00:13:12.580 --> 00:13:14.410 all that knowledge, all that data,

NOTE Confidence: 0.8324761

00:13:14.410 --> 00:13:16.246 all those tools to bear in

NOTE Confidence: 0.8324761

00:13:16.246 --> 00:13:17.164 our local population.

NOTE Confidence: 0.8324761

00:13:17.170 --> 00:13:18.330 OK, that's the mission.

NOTE Confidence: 0.8324761

00:13:18.330 --> 00:13:20.070 And we've got a lot of

NOTE Confidence: 0.8324761

00:13:20.136 --> 00:13:21.840 important partners in this.

NOTE Confidence: 0.8324761

00:13:21.840 --> 00:13:22.356 You know,

NOTE Confidence: 0.8324761

00:13:22.356 --> 00:13:23.646 we're not doing this alone,

NOTE Confidence: 0.8324761

00:13:23.650 --> 00:13:24.678 most notably the Yale

NOTE Confidence: 0.8324761

00:13:24.678 --> 00:13:25.706 Center for Genome Analysis,

NOTE Confidence: 0.8324761

00:13:25.710 --> 00:13:27.000 which is super important partner.

NOTE Confidence: 0.8324761

00:13:27.000 --> 00:13:29.080 And what we're trying to do Center for

NOTE Confidence: 0.8324761

00:13:29.080 --> 00:13:30.651 outcomes evaluation of her research and

NOTE Confidence: 0.8324761

00:13:30.651 --> 00:13:32.157 evaluation core is also another one,

NOTE Confidence: 0.8324761

00:13:32.160 --> 00:13:34.216 and there's probably others I left off here.

NOTE Confidence: 0.8324761

00:13:34.220 --> 00:13:35.930 They don't know about more

NOTE Confidence: 0.8324761

00:13:35.930 --> 00:13:37.640 when I've been here longer.

NOTE Confidence: 0.8324761

00:13:37.640 --> 00:13:38.210 So very,

NOTE Confidence: 0.8324761

00:13:38.210 --> 00:13:40.490 very excited to do all this just to

NOTE Confidence: 0.8324761

00:13:40.555 --> 00:13:43.035 sort of be a little bit more explicit

NOTE Confidence: 0.8324761

00:13:43.035 --> 00:13:44.957 about what we're trying to do.

NOTE Confidence: 0.8324761

00:13:44.960 --> 00:13:47.588 You know the the the one of the main

NOTE Confidence: 0.8324761

00:13:47.588 --> 00:13:49.836 goals is to sort of build shares,

NOTE Confidence: 0.8324761

00:13:49.840 --> 00:13:51.365 core technology platforms for the

NOTE Confidence: 0.8324761

00:13:51.365 --> 00:13:52.890 integrative analysis of genomic data,

NOTE Confidence: 0.8324761

00:13:52.890 --> 00:13:54.110 and the HR data.

NOTE Confidence: 0.8324761

00:13:54.110 --> 00:13:55.330 This is super important,

NOTE Confidence: 0.8324761

00:13:55.330 --> 00:13:56.855 and it's something that's going

NOTE Confidence: 0.8324761

00:13:56.855 --> 00:13:57.770 to benefit everybody.

NOTE Confidence: 0.8324761

00:13:57.770 --> 00:13:59.818 This is supposed to be a a shared

NOTE Confidence: 0.8324761
00:13:59.818 --> 00:14:01.776 resource that anybody at the school
NOTE Confidence: 0.8324761
00:14:01.776 --> 00:14:03.864 medicine can access for research projects.
NOTE Confidence: 0.8276645
00:14:03.870 --> 00:14:04.785 This includes generations,
NOTE Confidence: 0.8276645
00:14:04.785 --> 00:14:06.005 project, highly cloud project,
NOTE Confidence: 0.8276645
00:14:06.010 --> 00:14:08.530 led by Mike Murray that we hear about.
NOTE Confidence: 0.8276645
00:14:08.530 --> 00:14:09.810 Computational health platform led
NOTE Confidence: 0.8276645
00:14:09.810 --> 00:14:12.060 by Wade Schultz as part of core,
NOTE Confidence: 0.8276645
00:14:12.060 --> 00:14:14.321 and we're also my group in collaboration
NOTE Confidence: 0.8276645
00:14:14.321 --> 00:14:16.917 with Jim Knight and Y CG or building
NOTE Confidence: 0.8276645
00:14:16.917 --> 00:14:18.477 in Genomic Data Science platform,
NOTE Confidence: 0.8276645
00:14:18.480 --> 00:14:20.713 which is essentially a set of pipeline
NOTE Confidence: 0.8276645
00:14:20.713 --> 00:14:22.718 of really cutting edge genome analysis
NOTE Confidence: 0.8276645
00:14:22.718 --> 00:14:24.698 tools that are designed to really
NOTE Confidence: 0.8276645
00:14:24.698 --> 00:14:27.204 get the most out of the genomic data
NOTE Confidence: 0.8276645
00:14:27.204 --> 00:14:28.923 that we're producing here at Yale.
NOTE Confidence: 0.8276645

00:14:28.923 --> 00:14:31.307 And to make sure that all of these
NOTE Confidence: 0.8276645

00:14:31.307 --> 00:14:33.791 three things get integrated really well
NOTE Confidence: 0.8276645

00:14:33.791 --> 00:14:36.198 together to really push the science.
NOTE Confidence: 0.8276645

00:14:36.200 --> 00:14:38.256 I think that you know big goal here
NOTE Confidence: 0.8276645

00:14:38.256 --> 00:14:40.838 is to catalyze collaborative projects,
NOTE Confidence: 0.8276645

00:14:40.840 --> 00:14:43.612 focus on all the areas that I just talked
NOTE Confidence: 0.8276645

00:14:43.612 --> 00:14:46.751 about to work on with the hospital to
NOTE Confidence: 0.8276645

00:14:46.751 --> 00:14:49.049 implement these technologies into the clinic,
NOTE Confidence: 0.8276645

00:14:49.050 --> 00:14:50.835 and then just more generally
NOTE Confidence: 0.8276645

00:14:50.835 --> 00:14:52.263 to build a bigger,
NOTE Confidence: 0.8276645

00:14:52.270 --> 00:14:54.406 stronger genomics community here at Yale.
NOTE Confidence: 0.8276645

00:14:54.410 --> 00:14:56.190 From the standpoint of recruitment,
NOTE Confidence: 0.8276645

00:14:56.190 --> 00:14:56.904 training, workshops,
NOTE Confidence: 0.8276645

00:14:56.904 --> 00:14:59.760 seminars and so really excited to do this,
NOTE Confidence: 0.8276645

00:14:59.760 --> 00:15:01.550 really excited to be here,
NOTE Confidence: 0.8276645

00:15:01.550 --> 00:15:03.686 I can't wait to get started.

NOTE Confidence: 0.8276645

00:15:03.690 --> 00:15:06.644 Work with all of you here an.

NOTE Confidence: 0.8276645

00:15:06.650 --> 00:15:10.124 With that, I'll say thank you.