WEBVTT

NOTE duration:"00:08:02.6600000"

NOTE recognizability:0.873

NOTE language:en-us

NOTE Confidence: 0.963255767142857

00:00:00.000 --> 00:00:03.540 Welcome everyone to this Symposium

NOTE Confidence: 0.963255767142857

00:00:03.540 --> 00:00:06.211 Human development and organize them.

NOTE Confidence: 0.963255767142857

00:00:06.211 --> 00:00:07.879 Sets of experimental models,

NOTE Confidence: 0.963255767142857

00:00:07.880 --> 00:00:09.612 somatic mosaices,

NOTE Confidence: 0.963255767142857

00:00:09.612 --> 00:00:13.076 developmental disorders and beyond.

NOTE Confidence: 0.963255767142857

00:00:13.080 --> 00:00:17.318 Very glad that we were allowed to do this.

NOTE Confidence: 0.963255767142857

00:00:17.320 --> 00:00:19.672 Thanks to the Dean for allowing

NOTE Confidence: 0.963255767142857

00:00:19.672 --> 00:00:21.240 to organize this workshop.

NOTE Confidence: 0.963255767142857

00:00:21.240 --> 00:00:22.792 Thank you for coming.

NOTE Confidence: 0.963255767142857

00:00:22.792 --> 00:00:25.120 And my name is Flora Vacarino.

NOTE Confidence: 0.963255767142857

00:00:25.120 --> 00:00:26.715 I'm the hardest professor at

NOTE Confidence: 0.963255767142857

00:00:26.715 --> 00:00:28.310 the Child Study Center and

NOTE Confidence: 0.963255767142857

00:00:28.369 --> 00:00:30.399 Department of Neuroscience at Yale.

NOTE Confidence: 0.963255767142857

00:00:30.400 --> 00:00:33.559 And I wanted to just say a few things.

NOTE Confidence: 0.963255767142857

00:00:33.560 --> 00:00:36.600 There will be a survey at the end of the

NOTE Confidence: 0.963255767142857

00:00:36.683 --> 00:00:39.640 workshop that you are invited to respond.

NOTE Confidence: 0.963255767142857

00:00:39.640 --> 00:00:43.640 And we're not going to have a Q&A

NOTE Confidence: 0.963255767142857

00:00:43.640 --> 00:00:45.737 at the end of each presentation

NOTE Confidence: 0.963255767142857

00:00:45.737 --> 00:00:47.519 just because of lack of time.

NOTE Confidence: 0.963255767142857

00:00:47.520 --> 00:00:51.750 But we do have a break.

NOTE Confidence: 0.963255767142857

00:00:51.750 --> 00:00:53.510 And so 15 minutes break.

NOTE Confidence: 0.963255767142857

00:00:53.510 --> 00:00:56.226 So you are all invited to talk

NOTE Confidence: 0.963255767142857

00:00:56.226 --> 00:00:58.990 to each other during that time.

NOTE Confidence: 0.963255767142857

00:00:58.990 --> 00:01:02.950 Also, there are restrooms, of course,

NOTE Confidence: 0.963255767142857

00:01:02.950 --> 00:01:05.026 outside just outside of the room.

NOTE Confidence: 0.963255767142857

00:01:05.030 --> 00:01:07.466 So let me start by introducing

NOTE Confidence: 0.963255767142857

00:01:07.466 --> 00:01:10.190 somebody who needs no introduction,

NOTE Confidence: 0.963255767142857

00:01:10.190 --> 00:01:13.070 our Dean, Doctor Nancy Brown.

NOTE Confidence: 0.963255767142857

00:01:13.070 --> 00:01:14.940 She graduated from New York

NOTE Confidence: 0.963255767142857

00:01:14.940 --> 00:01:16.810 College and her medical degree

NOTE Confidence: 0.963255767142857

00:01:16.876 --> 00:01:18.908 from Harvard University completed

NOTE Confidence: 0.963255767142857

00:01:18.908 --> 00:01:20.940 her internship and residency.

NOTE Confidence: 0.963255767142857

00:01:20.940 --> 00:01:23.740 In medicine at Vanderbilt University

NOTE Confidence: 0.963255767142857

00:01:23.740 --> 00:01:26.404 and then did a fellowship in

NOTE Confidence: 0.963255767142857

00:01:26.404 --> 00:01:27.736 clinical pharmacology there.

NOTE Confidence: 0.963255767142857

00:01:27.740 --> 00:01:29.344 And in in 2020,

NOTE Confidence: 0.963255767142857

00:01:29.344 --> 00:01:31.750 she became the Jean and David

NOTE Confidence: 0.963255767142857

00:01:31.840 --> 00:01:34.465 Wallace Dean of Medicine and

NOTE Confidence: 0.963255767142857

00:01:34.465 --> 00:01:37.090 CNH Long professor of internal

NOTE Confidence: 0.963255767142857

00:01:37.187 --> 00:01:40.858 medicine at Yalesboro Medicine.

NOTE Confidence: 0.963255767142857

00:01:40.860 --> 00:01:42.420 So thank you Dean Brown,

NOTE Confidence: 0.963255767142857

00:01:42.420 --> 00:01:43.540 please come to the podium.

NOTE Confidence: 0.883191793333333

00:01:49.810 --> 00:01:51.250 So that the pleasure is mine.

NOTE Confidence: 0.883191793333333

00:01:51.250 --> 00:01:53.602 I've been looking forward to this

NOTE Confidence: 0.883191793333333

00:01:53.602 --> 00:01:56.298 workshop for for weeks and talking

NOTE Confidence: 0.883191793333333

00:01:56.298 --> 00:01:59.118 today about human organoids and

NOTE Confidence: 0.883191793333333

00:01:59.118 --> 00:02:02.400 induce potent stem cells and I need

NOTE Confidence: 0.883191793333333

00:02:02.400 --> 00:02:04.410 not tell this argue this audience.

NOTE Confidence: 0.883191793333333

00:02:04.410 --> 00:02:07.130 This technology has been transformative

NOTE Confidence: 0.883191793333333

00:02:07.130 --> 00:02:09.980 in helping us to understand developmental

NOTE Confidence: 0.883191793333333

00:02:09.980 --> 00:02:12.415 processes to understand the effect

NOTE Confidence: 0.883191793333333

00:02:12.415 --> 00:02:14.956 of somatic mutations and I'm really

NOTE Confidence: 0.883191793333333

00:02:14.956 --> 00:02:17.248 is giving the potential we giving

NOTE Confidence: 0.883191793333333

00:02:17.248 --> 00:02:19.647 rise to cell based therapeutics.

NOTE Confidence: 0.883191793333333

00:02:19.650 --> 00:02:21.810 What you're going to hear about today are,

NOTE Confidence: 0.883191793333333

00:02:21.810 --> 00:02:24.030 I think, technological advances

NOTE Confidence: 0.883191793333333

00:02:24.030 --> 00:02:26.805 that can accelerate this work,

NOTE Confidence: 0.883191793333333

00:02:26.810 --> 00:02:30.164 as well as information about plasticity

NOTE Confidence: 0.883191793333333

00:02:30.164 --> 00:02:32.400 and increased understanding and

NOTE Confidence: 0.883191793333333

00:02:32.481 --> 00:02:35.632 developmental programming and again,

NOTE Confidence: 0.883191793333333

00:02:35.632 --> 00:02:39.178 new ways of understanding the impact

NOTE Confidence: 0.883191793333333

00:02:39.178 --> 00:02:42.090 of of altered gene regulation.

NOTE Confidence: 0.883191793333333

00:02:42.090 --> 00:02:45.570 You're going to hear in particular

NOTE Confidence: 0.883191793333333

00:02:45.666 --> 00:02:47.480 from Doctor Alexei Abhisov,

NOTE Confidence: 0.883191793333333

00:02:47.480 --> 00:02:50.360 who has joined us from Mayo.

NOTE Confidence: 0.883191793333333

00:02:50.360 --> 00:02:52.952 And I can only say it is so exciting

NOTE Confidence: 0.883191793333333

00:02:52.952 --> 00:02:56.220 to have a guest speaker here in three

NOTE Confidence: 0.883191793333333

00:02:56.220 --> 00:02:57.960 dimensions and not on the screen.

NOTE Confidence: 0.883191793333333

00:02:57.960 --> 00:03:01.355 And he will speak about somatic mutations,

NOTE Confidence: 0.883191793333333

00:03:01.360 --> 00:03:03.720 reveal personal history and

NOTE Confidence: 0.883191793333333

00:03:03.720 --> 00:03:06.080 of development and aging.

NOTE Confidence: 0.883191793333333

00:03:06.080 --> 00:03:08.016 I I want to thank those of you

NOTE Confidence: 0.883191793333333

00:03:08.016 --> 00:03:10.000 who were involved in organizing,

NOTE Confidence: 0.883191793333333

00:03:10.000 --> 00:03:11.348 particularly Flora.

NOTE Confidence: 0.883191793333333

00:03:11.348 --> 00:03:14.970 Also hyphen for your leadership and

NOTE Confidence: 0.883191793333333

00:03:14.970 --> 00:03:16.720 I'm going to sit down and listen.

NOTE Confidence: 0.883191793333333

00:03:16.720 --> 00:03:17.560 So thanks for coming.

NOTE Confidence: 0.9402536

00:03:23.800 --> 00:03:27.070 Well, thank you very much, Dean Brown.

NOTE Confidence: 0.9402536

00:03:27.070 --> 00:03:32.052 And let me now introduce Doctor Lynn Hyphen.

NOTE Confidence: 0.9402536

00:03:32.052 --> 00:03:35.094 Lynn Hyphen is the Eugene Higgins professor

NOTE Confidence: 0.9402536

00:03:35.094 --> 00:03:37.878 of cell biology and professor of genetics,

NOTE Confidence: 0.9402536

00:03:37.880 --> 00:03:40.092 obstetrics and gynecology and

NOTE Confidence: 0.9402536

00:03:40.092 --> 00:03:42.304 reproductive sciences and dermatology

NOTE Confidence: 0.9402536

00:03:42.304 --> 00:03:44.889 at Yale School of Medicine.

NOTE Confidence: 0.9402536

00:03:44.890 --> 00:03:46.888 And he's the director of the

NOTE Confidence: 0.9402536

00:03:46.888 --> 00:03:49.130 well known Yao Stem Cell Center.

NOTE Confidence: 0.9402536

00:03:49.130 --> 00:03:51.570 And him and I will give you a

NOTE Confidence: 0.9402536

00:03:51.570 --> 00:03:53.970 brief overview of the symposium,

NOTE Confidence: 0.946962476666667

00:03:57.690 --> 00:03:59.958 please. Thank you very much for your

NOTE Confidence: 0.946962476666667

00:03:59.958 --> 00:04:02.910 kind introduction and I also wanna thank

NOTE Confidence: 0.946962476666667

00:04:02.910 --> 00:04:05.210 Nancy for your invigorating remarks.

NOTE Confidence: 0.946962476666667

00:04:05.210 --> 00:04:07.400 Good afternoon, everyone.

NOTE Confidence: 0.946962476666667

00:04:07.400 --> 00:04:10.319 You know, as Tim Brown alluded to,

NOTE Confidence: 0.946962476666667

00:04:10.320 --> 00:04:12.895 the advent of human organoids

NOTE Confidence: 0.946962476666667

00:04:12.895 --> 00:04:14.955 really represents a major

NOTE Confidence: 0.946962476666667

00:04:14.955 --> 00:04:17.316 advancement in the stem cell field.

NOTE Confidence: 0.946962476666667

00:04:17.320 --> 00:04:22.245 These in visual cultured 3D stem

NOTE Confidence: 0.946962476666667

00:04:22.245 --> 00:04:25.360 cell derived systems will allow us to

NOTE Confidence: 0.946962476666667

00:04:25.360 --> 00:04:28.245 study human development and diseases

NOTE Confidence: 0.946962476666667

00:04:28.245 --> 00:04:31.530 in ways that otherwise not possible,

NOTE Confidence: 0.946962476666667

00:04:31.530 --> 00:04:34.506 and they also can mimic our

NOTE Confidence: 0.946962476666667

00:04:34.506 --> 00:04:36.144 human organ development.

NOTE Confidence: 0.946962476666667

00:04:36.144 --> 00:04:40.368 Truly in a remarkable detail that we can use

NOTE Confidence: 0.946962476666667

00:04:40.368 --> 00:04:42.600 it for many other important applications.

NOTE Confidence: 0.946962476666667

00:04:42.600 --> 00:04:45.344 And at Yale we actually have a

NOTE Confidence: 0.946962476666667

00:04:45.344 --> 00:04:47.514 vibrant community of human organized

NOTE Confidence: 0.946962476666667

00:04:47.514 --> 00:04:49.999 researchers who are conducting cutting

NOTE Confidence: 0.946962476666667

00:04:49.999 --> 00:04:52.872 edge research in this exciting subject.

NOTE Confidence: 0.946962476666667

00:04:52.872 --> 00:04:56.296 And thanks to Dean Brown and associate

NOTE Confidence: 0.946962476666667

00:04:56.296 --> 00:04:58.576 Dean Luce Montgomery's vision and

NOTE Confidence: 0.946962476666667

00:04:58.576 --> 00:05:01.240 strong support on this timely topic,

NOTE Confidence: 0.946962476666667

00:05:01.240 --> 00:05:06.637 and also thanks to Professor Flora Vecranos.

NOTE Confidence: 0.946962476666667

00:05:06.640 --> 00:05:08.424 Effort in spearheading its

NOTE Confidence: 0.946962476666667

00:05:08.424 --> 00:05:09.316 organization today,

NOTE Confidence: 0.946962476666667

00:05:09.320 --> 00:05:11.630 we really have some of the most

NOTE Confidence: 0.946962476666667

00:05:11.630 --> 00:05:14.240 achieved human organo researchers

NOTE Confidence: 0.946962476666667

00:05:14.240 --> 00:05:16.944 on campus to share with us.

NOTE Confidence: 0.946962476666667

00:05:16.944 --> 00:05:18.424 They are very exciting research

NOTE Confidence: 0.946962476666667

00:05:18.424 --> 00:05:20.624 and we are very fortunate to

NOTE Confidence: 0.946962476666667

00:05:20.624 --> 00:05:23.280 have Professor Alexei Avizov,

NOTE Confidence: 0.946962476666667

00:05:23.280 --> 00:05:25.758 who actually is a Yale alumnus,

NOTE Confidence: 0.946962476666667

00:05:25.760 --> 00:05:28.912 coming back to Yale to enlighten us on

NOTE Confidence: 0.946962476666667

00:05:28.912 --> 00:05:32.308 his work on the somatic genetic variance

NOTE Confidence: 0.946962476666667

00:05:32.308 --> 00:05:35.243 impact on human development disease.

NOTE Confidence: 0.946962476666667

00:05:35.250 --> 00:05:36.866 And this workshop really

NOTE Confidence: 0.946962476666667

00:05:36.866 --> 00:05:38.886 is a Flora's when child.

NOTE Confidence: 0.946962476666667

00:05:38.890 --> 00:05:41.020 And Flora has really invented the

NOTE Confidence: 0.946962476666667

00:05:41.020 --> 00:05:42.889 sanctions banquet of knowledge for us.

NOTE Confidence: 0.946962476666667

00:05:42.890 --> 00:05:43.296 So now,

NOTE Confidence: 0.946962476666667

00:05:43.296 --> 00:05:43.499 actually,

NOTE Confidence: 0.946962476666667

00:05:43.499 --> 00:05:44.920 I'd like to invite Flora to say

NOTE Confidence: 0.946962476666667

00:05:44.964 --> 00:05:46.248 a few words about the workshop.

NOTE Confidence: 0.946962476666667

00:05:46.250 --> 00:05:46.410 Thank

NOTE Confidence: 0.724187508

00:05:47.410 --> 00:05:50.090 you. You're welcome. Thank you.

NOTE Confidence: 0.724187508

00:05:50.090 --> 00:05:54.325 OK, so let's start with the specifics.

NOTE Confidence: 0.724187508

00:05:54.330 --> 00:05:58.874 What's an organoid? An organoid is

NOTE Confidence: 0.724187508

00:05:58.874 --> 00:06:01.714 a collection of pluripotent cells.

NOTE Confidence: 0.724187508

00:06:01.720 --> 00:06:05.200 Or stem cells that will develop together into

NOTE Confidence: 0.724187508

00:06:05.200 --> 00:06:09.636 a mimic of an organ, a model of an organ.

NOTE Confidence: 0.724187508

00:06:09.640 --> 00:06:11.677 So these sets grow and develop together.

NOTE Confidence: 0.724187508

00:06:11.680 --> 00:06:13.798 That's the definition of an organoid.

NOTE Confidence: 0.724187508

00:06:13.800 --> 00:06:16.608 And because it's coming originally from

NOTE Confidence: 0.724187508

00:06:16.608 --> 00:06:19.410 STEM or progenitive sets, those can

NOTE Confidence: 0.724187508

00:06:19.410 --> 00:06:22.665 actually be derived from a living person.

NOTE Confidence: 0.724187508

00:06:22.670 --> 00:06:26.204 So that's really the breakthrough that

NOTE Confidence: 0.724187508

00:06:26.204 --> 00:06:28.990 Yamaraka discovered many years ago.

NOTE Confidence: 0.724187508

00:06:28.990 --> 00:06:31.150 And now, thanks to this,

NOTE Confidence: 0.724187508

00:06:31.150 --> 00:06:32.746 what can we do with this?

NOTE Confidence: 0.724187508

00:06:32.750 --> 00:06:36.526 Well, we can understand something

NOTE Confidence: 0.724187508

00:06:36.526 --> 00:06:38.068 called human diversity.

NOTE Confidence: 0.724187508

00:06:38.070 --> 00:06:40.478 And this is a subject that I'm

NOTE Confidence: 0.724187508

00:06:40.478 --> 00:06:42.431 very passionate about. And it can.

NOTE Confidence: 0.724187508

00:06:42.431 --> 00:06:44.580 It comes from more than 20 years

NOTE Confidence: 0.724187508

00:06:44.654 --> 00:06:46.470 studying the human genome.

NOTE Confidence: 0.724187508

00:06:46.470 --> 00:06:48.948 We're all very different from each other.

NOTE Confidence: 0.724187508

00:06:48.950 --> 00:06:51.038 We're different at the.

NOTE Confidence: 0.724187508

00:06:51.040 --> 00:06:51.692 Genomic level,

NOTE Confidence: 0.724187508

00:06:51.692 --> 00:06:53.648 the part that we inherited from

NOTE Confidence: 0.724187508

00:06:53.648 --> 00:06:55.636 our parents who are also different

NOTE Confidence: 0.724187508

00:06:55.636 --> 00:06:57.556 at the level of somatic mutations,

NOTE Confidence: 0.724187508

00:06:57.560 --> 00:06:59.396 which as Alexei will tell us,

NOTE Confidence: 0.724187508

00:06:59.400 --> 00:07:02.916 accumulate over each other over life,

NOTE Confidence: 0.724187508

00:07:02.920 --> 00:07:04.840 during life.

NOTE Confidence: 0.724187508

00:07:04.840 --> 00:07:07.024 So that's an additional source of

NOTE Confidence: 0.724187508

00:07:07.024 --> 00:07:08.480 differences that is individual.

NOTE Confidence: 0.724187508

00:07:08.480 --> 00:07:11.140 And then we were different at the

NOTE Confidence: 0.724187508

00:07:11.140 --> 00:07:13.188 level of epigenomic alterations that

NOTE Confidence: 0.724187508

00:07:13.188 --> 00:07:15.684 model the DNA in 3D confirmation

NOTE Confidence: 0.724187508

00:07:15.684 --> 00:07:18.532 that are peculiar for each person

NOTE Confidence: 0.724187508

00:07:18.532 --> 00:07:20.544 and regulate gene expression.

NOTE Confidence: 0.724187508

00:07:20.550 --> 00:07:22.230 And this could be also modulated

NOTE Confidence: 0.724187508

00:07:22.230 --> 00:07:23.070 by the environment.

NOTE Confidence: 0.724187508

00:07:23.070 --> 00:07:25.362 So altogether makes each one of

NOTE Confidence: 0.724187508

00:07:25.362 --> 00:07:27.750 us unique with respect to another.

NOTE Confidence: 0.724187508

00:07:27.750 --> 00:07:30.420 And the organoids is probably the

NOTE Confidence: 0.724187508

00:07:30.420 --> 00:07:33.206 only opportunity we have to study

NOTE Confidence: 0.724187508

00:07:33.206 --> 00:07:34.589 how this development,

NOTE Confidence: 0.724187508

00:07:34.590 --> 00:07:37.070 this developmental trajectory are

NOTE Confidence: 0.724187508

00:07:37.070 --> 00:07:39.550 different across individual people.

NOTE Confidence: 0.724187508

00:07:39.550 --> 00:07:42.200 And the implication from for

NOTE Confidence: 0.724187508

00:07:42.200 --> 00:07:44.371 disorders is profound because

NOTE Confidence: 0.724187508

00:07:44.371 --> 00:07:47.857 although this model is still imperfect.

NOTE Confidence: 0.724187508

00:07:47.860 --> 00:07:51.640 Has the potential to model also

NOTE Confidence: 0.724187508

00:07:51.640 --> 00:07:55.009 susceptibility to various disorders and

NOTE Confidence: 0.724187508

00:07:55.009 --> 00:07:58.017 there therefore inform therapeutics,

NOTE Confidence: 0.724187508

00:07:58.020 --> 00:08:00.700 prevention and all and all of the above.

NOTE Confidence: 0.724187508

00:08:00.700 --> 00:08:02.660 So thank you very much for coming.