WEBVTT

NOTE duration:"00:20:05.3600000"

NOTE recognizability:0.924

NOTE language:en-us

NOTE Confidence: 0.940253545

00:00:00.000 --> 00:00:01.520 It's my pleasure to

NOTE Confidence: 0.94830426

00:00:02.280 --> 00:00:05.040 introduce Doctor Yang,

NOTE Confidence: 0.94830426

00:00:05.040 --> 00:00:09.300 who is received this MD from Shanghai

NOTE Confidence: 0.94830426

00:00:09.300 --> 00:00:12.062 Medical College of Punan University and

NOTE Confidence: 0.94830426

00:00:12.062 --> 00:00:14.998 his PhD at Baylor College of Medicine.

NOTE Confidence: 0.94830426

00:00:15.000 --> 00:00:17.694 And he completed his pediatric residency

NOTE Confidence: 0.94830426

00:00:17.694 --> 00:00:19.958 and Clinical Genetics Fellowship at

NOTE Confidence: 0.94830426

00:00:19.958 --> 00:00:21.958 Texas Children's Hospital at Baylor,

NOTE Confidence: 0.94830426

00:00:21.960 --> 00:00:24.900 at Baylor and then joined the Yale

NOTE Confidence: 0.94830426

00:00:24.900 --> 00:00:26.805 Department of Genetics in 2019.

NOTE Confidence: 0.94830426

00:00:26.805 --> 00:00:29.920 His research focuses are the discovery of

NOTE Confidence: 0.94830426

00:00:29.920 --> 00:00:32.574 rare diseases and modeling neurogenetics

NOTE Confidence: 0.94830426

00:00:32.574 --> 00:00:35.384 and neuro epigenetic disorders using

NOTE Confidence: 0.94830426

00:00:35.384 --> 00:00:38.187 human derived ipscs and mutant mice.

NOTE Confidence: 0.880336425

00:00:48.430 --> 00:00:48.950 Thank you. All right.

NOTE Confidence: 0.944278896

00:00:56.950 --> 00:00:59.158 Well, thank you for and hyphen

NOTE Confidence: 0.944278896

00:00:59.158 --> 00:01:00.630 for organize this event.

NOTE Confidence: 0.944278896

00:01:00.630 --> 00:01:02.250 Also for the invitation,

NOTE Confidence: 0.944278896

00:01:02.250 --> 00:01:03.870 I shoot the clothes.

NOTE Confidence: 0.944278896

00:01:03.870 --> 00:01:06.150 I'm not stem cell biologist,

NOTE Confidence: 0.944278896

00:01:06.150 --> 00:01:08.870 I'm not biomedical engineer either.

NOTE Confidence: 0.944278896

00:01:08.870 --> 00:01:09.990 So while I'm here,

NOTE Confidence: 0.830168774

00:01:12.990 --> 00:01:14.710 sorry, how do I convince?

NOTE Confidence: 0.93396392125

00:01:16.910 --> 00:01:20.030 So how do we get interesting for the

NOTE Confidence: 0.93396392125

00:01:20.030 --> 00:01:23.870 bring organize IPSC and 2DS3 neuron?

NOTE Confidence: 0.93396392125

00:01:23.870 --> 00:01:26.316 So I'm kind of called genetics. I see.

NOTE Confidence: 0.93396392125

00:01:26.316 --> 00:01:27.660 The patient in the clinical. Sorry

NOTE Confidence: 0.94125994

00:01:29.980 --> 00:01:31.132 for real genetic disorder

NOTE Confidence: 0.94125994

00:01:31.132 --> 00:01:32.860 and then back to the lab.

NOTE Confidence: 0.94125994

00:01:32.860 --> 00:01:34.500 Wow, that didn't work. Sorry.

NOTE Confidence: 0.93270605

00:01:39.580 --> 00:01:40.380 Go one more time.

NOTE Confidence: 0.817245815454545

00:01:44.820 --> 00:01:47.368 Oh, OK. Thank you. That means we

NOTE Confidence: 0.817245815454545

00:01:47.368 --> 00:01:52.200 need every step together, right? So.

NOTE Confidence: 0.817245815454545

00:01:52.200 --> 00:01:54.790 Next lab, we can try modeling the

NOTE Confidence: 0.817245815454545

00:01:54.790 --> 00:01:56.747 genetic new epigenetic primary aspect

NOTE Confidence: 0.817245815454545

00:01:56.747 --> 00:01:59.075 of brain development in the lab,

NOTE Confidence: 0.817245815454545

00:01:59.080 --> 00:02:01.360 primarily using the Moss model

NOTE Confidence: 0.817245815454545

00:02:01.360 --> 00:02:02.940 or other animal model,

NOTE Confidence: 0.817245815454545

00:02:02.940 --> 00:02:04.915 understanding the function of gene,

NOTE Confidence: 0.817245815454545

00:02:04.920 --> 00:02:06.804 understanding the disease mechanism,

NOTE Confidence: 0.817245815454545

00:02:06.804 --> 00:02:09.159 passive Physiology as a physician,

NOTE Confidence: 0.817245815454545

00:02:09.160 --> 00:02:10.480 definitely interesting develop

NOTE Confidence: 0.817245815454545

00:02:10.480 --> 00:02:13.120 a treatment back to the family.

NOTE Confidence: 0.817245815454545

00:02:13.120 --> 00:02:16.830 However, as probably I would say

NOTE Confidence: 0.817245815454545

00:02:16.830 --> 00:02:19.045 almost all the success we learn

NOTE Confidence: 0.817245815454545

00:02:19.045 --> 00:02:21.733 primary from the brain from the mice.

NOTE Confidence: 0.817245815454545

00:02:21.740 --> 00:02:24.505 Did not translate well come to the

NOTE Confidence: 0.817245815454545

00:02:24.505 --> 00:02:27.300 human we fail miserably for many,

NOTE Confidence: 0.817245815454545

00:02:27.300 --> 00:02:29.900 many of the successful exciting

NOTE Confidence: 0.817245815454545

00:02:29.900 --> 00:02:31.460 story for mice.

NOTE Confidence: 0.817245815454545

00:02:31.460 --> 00:02:33.860 So that's what we're asking could

NOTE Confidence: 0.817245815454545

00:02:33.860 --> 00:02:36.660 we kind of study for the IPSC,

NOTE Confidence: 0.817245815454545

00:02:36.660 --> 00:02:39.260 derive patient, derive 2DS3 neuron,

NOTE Confidence: 0.817245815454545

00:02:39.260 --> 00:02:42.018 feel this gap, but just this challenge.

NOTE Confidence: 0.817245815454545

00:02:42.020 --> 00:02:43.595 So I'm going to give you two

NOTE Confidence: 0.817245815454545

00:02:43.595 --> 00:02:44.699 example in in my lab,

NOTE Confidence: 0.817245815454545

00:02:44.700 --> 00:02:46.596 probably focus on the

NOTE Confidence: 0.817245815454545

00:02:46.596 --> 00:02:49.440 first one the time I say.

NOTE Confidence: 0.817245815454545

00:02:49.440 --> 00:02:51.520 So I hope you feel these two disorder

NOTE Confidence: 0.817245815454545

00:02:51.520 --> 00:02:53.398 are very interesting in general.

NOTE Confidence: 0.817245815454545

00:02:53.400 --> 00:02:56.004 So this is Endrum syndrome which is

NOTE Confidence: 0.817245815454545

00:02:56.004 --> 00:02:58.358 oftentimes many syndrome named by physician,

NOTE Confidence: 0.817245815454545

00:02:58.360 --> 00:03:01.560 the first recognized name endrum,

NOTE Confidence: 0.817245815454545

00:03:01.560 --> 00:03:04.178 it's a very classical severe end of

NOTE Confidence: 0.817245815454545

00:03:04.178 --> 00:03:06.159 the new developmental disorder IQ,

NOTE Confidence: 0.817245815454545

00:03:06.160 --> 00:03:08.320 it's very low IQ like 20,

NOTE Confidence: 0.817245815454545

00:03:08.320 --> 00:03:09.440 they don't speech at all,

NOTE Confidence: 0.817245815454545

00:03:09.440 --> 00:03:11.060 don't have any speech.

NOTE Confidence: 0.817245815454545

00:03:11.060 --> 00:03:13.085 More challenges and they have

NOTE Confidence: 0.817245815454545

00:03:13.085 --> 00:03:15.558 very severe epilepsy and almost

NOTE Confidence: 0.817245815454545

00:03:15.558 --> 00:03:17.550 1/3 is medically intractable.

NOTE Confidence: 0.817245815454545

00:03:17.550 --> 00:03:20.868 It's very devastating to the family.

NOTE Confidence: 0.817245815454545

00:03:20.870 --> 00:03:23.710 It's very interesting molecular basis,

NOTE Confidence: 0.817245815454545

00:03:23.710 --> 00:03:27.803 a primary genetic defect IS15Q11Q13

NOTE Confidence: 0.817245815454545

00:03:27.803 --> 00:03:31.238 and matured patient have a 15Q11Q13

NOTE Confidence: 0.817245815454545

00:03:31.238 --> 00:03:33.510 deletion cross this region,

NOTE Confidence: 0.817245815454545

00:03:33.510 --> 00:03:35.085 but interestingly because

NOTE Confidence: 0.817245815454545

00:03:35.085 --> 00:03:36.660 it's imprinting related.

NOTE Confidence: 0.817245815454545

00:03:36.660 --> 00:03:38.995 So the paternal delition delition

NOTE Confidence: 0.817245815454545

00:03:38.995 --> 00:03:40.863 come from paternal chromosome

NOTE Confidence: 0.817245815454545

00:03:40.863 --> 00:03:43.069 caused a complete separate syndrome

NOTE Confidence: 0.817245815454545

00:03:43.069 --> 00:03:45.494 called the pero alloy and with

NOTE Confidence: 0.817245815454545

00:03:45.494 --> 00:03:47.379 the delition come from mother

NOTE Confidence: 0.817245815454545

00:03:47.379 --> 00:03:49.540 maternal alloy cause the end German.

NOTE Confidence: 0.817245815454545

00:03:49.540 --> 00:03:52.540 So over the time we know the gene

NOTE Confidence: 0.817245815454545

00:03:52.540 --> 00:03:54.995 response for this larger delition

NOTE Confidence: 0.817245815454545

00:03:54.995 --> 00:03:58.088 it's ubiquitin protein like this 3A.

NOTE Confidence: 0.817245815454545

00:03:58.088 --> 00:04:00.416 As more interesting this region is,

NOTE Confidence: 0.817245815454545

00:04:00.420 --> 00:04:03.285 we also know maternal duplication

NOTE Confidence: 0.817245815454545

00:04:03.285 --> 00:04:06.150 only maternal duplication from mother.

NOTE Confidence: 0.817245815454545

00:04:06.150 --> 00:04:08.982 Costs about 1 to 2% in the Ed Pass

NOTE Confidence: 0.817245815454545

00:04:08.982 --> 00:04:11.007 autism but not paternal so you can

NOTE Confidence: 0.817245815454545

00:04:11.007 --> 00:04:12.747 see it's very very interesting.

NOTE Confidence: 0.817245815454545

00:04:12.750 --> 00:04:14.750 If a duplication for father

NOTE Confidence: 0.817245815454545

00:04:14.750 --> 00:04:15.550 relatively normal

NOTE Confidence: 0.9201268

00:04:18.350 --> 00:04:21.871 so. So with with over the time we

NOTE Confidence: 0.9201268

00:04:21.871 --> 00:04:24.047 learned this is more complex sort of

NOTE Confidence: 0.9201268

00:04:24.047 --> 00:04:25.737 a genetic epigenetic defect majority

NOTE Confidence: 0.9201268

00:04:25.737 --> 00:04:28.068 of the logic deletion we have a poor

NOTE Confidence: 0.9201268

00:04:28.068 --> 00:04:30.160 mutation in the maternal chromosome you

NOTE Confidence: 0.9201268

00:04:30.160 --> 00:04:32.845 put in like H3A we have another two

NOTE Confidence: 0.9201268

00:04:32.845 --> 00:04:35.037 class of a where kind of uniprantal

NOTE Confidence: 0.9201268

00:04:35.037 --> 00:04:37.480 dysomy 2 comes come from same parents

NOTE Confidence: 0.9201268

00:04:37.480 --> 00:04:39.793 and of imprinting defect that's also

NOTE Confidence: 0.9201268

00:04:39.793 --> 00:04:43.070 small number for case color you B3

NOTE Confidence: 0.9201268

00:04:43.070 --> 00:04:46.495 gainer function contributor for autism.

NOTE Confidence: 0.9201268

00:04:46.500 --> 00:04:50.510 So now you put in like a G is an open.

NOTE Confidence: 0.9201268

00:04:50.510 --> 00:04:52.841 H3A some of you very familiarly percolation

NOTE Confidence: 0.9201268

00:04:52.841 --> 00:04:54.920 pathway and the most interesting to

NOTE Confidence: 0.9201268

00:04:54.920 --> 00:04:56.954 us is this is epigenetic phenomenon

NOTE Confidence: 0.9201268

00:04:56.954 --> 00:04:58.549 kind of imprinting the expression

NOTE Confidence: 0.9201268

00:04:58.549 --> 00:05:00.772 for the gene in the next generation.

NOTE Confidence: 0.9201268

00:05:00.772 --> 00:05:03.304 It's depend where this come from.

NOTE Confidence: 0.9201268

00:05:03.310 --> 00:05:06.313 So for the ENDROOM gene actually it's

NOTE Confidence: 0.9201268

00:05:06.313 --> 00:05:08.787 very interesting which is first kind

NOTE Confidence: 0.9201268

00:05:08.787 --> 00:05:11.384 of new specific imprinting gene in non

NOTE Confidence: 0.9201268

00:05:11.465 --> 00:05:14.193 neuro both Gene Express both earlier express.

NOTE Confidence: 0.9201268

00:05:14.193 --> 00:05:16.720 In the neuron in the brain only

NOTE Confidence: 0.9201268

00:05:16.795 --> 00:05:18.568 maternal allele expressed.

NOTE Confidence: 0.9201268

00:05:18.570 --> 00:05:20.760 So that's the how interesting this

NOTE Confidence: 0.9201268

00:05:20.760 --> 00:05:23.315 phenomenon is and over the time we

NOTE Confidence: 0.9201268

00:05:23.315 --> 00:05:25.592 and many other understanding for the

NOTE Confidence: 0.9201268

00:05:25.592 --> 00:05:27.866 mechanism how could this they cell

NOTE Confidence: 0.9201268

00:05:27.866 --> 00:05:30.520 type specific as a less specific

NOTE Confidence: 0.9201268

00:05:30.520 --> 00:05:31.966 infinite phenomena happen.

NOTE Confidence: 0.9201268

00:05:31.970 --> 00:05:33.810 It's actually due to a very very long,

NOTE Confidence: 0.9201268

00:05:33.810 --> 00:05:37.674 almost mega based long non coding a RNA.

NOTE Confidence: 0.9201268

00:05:37.680 --> 00:05:40.416 Are part of what we called also antisense

NOTE Confidence: 0.9201268

00:05:40.416 --> 00:05:43.443 for the UB3 gene only expressed from

NOTE Confidence: 0.9201268

00:05:43.443 --> 00:05:45.713 paternal chromosome then silence for

NOTE Confidence: 0.9201268

00:05:45.785 --> 00:05:48.155 the sense on the paternal console.

NOTE Confidence: 0.9201268

00:05:48.160 --> 00:05:50.617 So that's the mechanism and we also

NOTE Confidence: 0.9201268

00:05:50.617 --> 00:05:52.868 generate a many Moss model over

NOTE Confidence: 0.9201268

00:05:52.868 --> 00:05:55.118 the time to study this mechanism.

NOTE Confidence: 0.9201268

00:05:55.120 --> 00:05:58.330 Overall Moss model provide many many

NOTE Confidence: 0.9201268

00:05:58.330 --> 00:06:01.690 valuable insight however that's.

NOTE Confidence: 0.9201268

00:06:01.690 --> 00:06:05.162 Also the capitulate a lot of the human

NOTE Confidence: 0.9201268

00:06:05.162 --> 00:06:07.098 phenotype reasonable well especially

NOTE Confidence: 0.9201268

00:06:07.098 --> 00:06:09.563 we're interesting for the epilepsy

NOTE Confidence: 0.9201268

00:06:09.563 --> 00:06:11.042 or abnormal EEG.

NOTE Confidence: 0.9201268

00:06:11.050 --> 00:06:13.650 However then we take this one on try

NOTE Confidence: 0.9201268

00:06:13.650 --> 00:06:15.497 understanding it because as you know

NOTE Confidence: 0.9201268

00:06:15.497 --> 00:06:17.939 one set of patient have no control for

NOTE Confidence: 0.9201268

00:06:17.939 --> 00:06:20.326 the seizure or lifetime which is very,

NOTE Confidence: 0.9201268

00:06:20.330 --> 00:06:20.916 very challenging.

NOTE Confidence: 0.9201268

00:06:20.916 --> 00:06:22.088 So we try understanding,

NOTE Confidence: 0.9201268

00:06:22.090 --> 00:06:24.345 use the muscle model industry

NOTE Confidence: 0.9201268

00:06:24.345 --> 00:06:26.600 understanding why this epilepsy so

NOTE Confidence: 0.9201268

00:06:26.675 --> 00:06:28.650 common just highlight one phenomenon

NOTE Confidence: 0.9201268

00:06:28.650 --> 00:06:31.330 we use this is very specific.

NOTE Confidence: 0.9201268

00:06:31.330 --> 00:06:33.940 To Physiology phenomena measure the

NOTE Confidence: 0.9201268

00:06:33.940 --> 00:06:36.028 action potential with particular

NOTE Confidence: 0.9201268

00:06:36.028 --> 00:06:38.879 folks on fast component after

NOTE Confidence: 0.9201268

00:06:38.879 --> 00:06:40.007 hyperpolar polarization.

NOTE Confidence: 0.9201268

00:06:40.010 --> 00:06:42.128 We realized in this particular engine

NOTE Confidence: 0.9201268

00:06:42.128 --> 00:06:44.598 mouse model in the brain and neuron

NOTE Confidence: 0.9201268

00:06:44.598 --> 00:06:47.079 this FHP is increased and we have done

NOTE Confidence: 0.9201268

00:06:47.079 --> 00:06:49.746 a lot of work using the biochemical

NOTE Confidence: 0.9201268

00:06:49.746 --> 00:06:53.129 molecular and linked it to the Ek channel.

NOTE Confidence: 0.9201268

00:06:53.130 --> 00:06:55.770 It's enhanced function for BK

NOTE Confidence: 0.9201268

00:06:55.770 --> 00:06:57.882 channel contribute this phenomena.

NOTE Confidence: 0.9201268

00:06:57.890 --> 00:07:00.066 Then we also show this link to indeed

NOTE Confidence: 0.9201268

00:07:00.066 --> 00:07:02.367 in link to the epilepsy in the mice,

NOTE Confidence: 0.9201268

00:07:02.370 --> 00:07:05.338 which is you can use the antagonist

NOTE Confidence: 0.9201268

00:07:05.338 --> 00:07:08.182 Hassel and can reduce the amplitude

NOTE Confidence: 0.9201268

00:07:08.182 --> 00:07:10.612 and the frequency eventually suppress

NOTE Confidence: 0.9201268

00:07:10.612 --> 00:07:12.809 the seizure in the mice.

NOTE Confidence: 0.9201268

00:07:12.810 --> 00:07:14.154 So that's all good.

NOTE Confidence: 0.9201268

00:07:14.154 --> 00:07:16.170 The question come to whether this

NOTE Confidence: 0.9201268

00:07:16.241 --> 00:07:18.206 is translated between the human

NOTE Confidence: 0.9201268

00:07:18.210 --> 00:07:20.906 so that come to what we got into

NOTE Confidence: 0.9201268

00:07:20.906 --> 00:07:24.160 the IPSC 2D and three you are.

NOTE Confidence: 0.9201268

00:07:24.160 --> 00:07:26.183 That's one time I moved to the

NOTE Confidence: 0.9201268

00:07:26.183 --> 00:07:28.462 Yale and then I realized the world

NOTE Confidence: 0.9201268

00:07:28.462 --> 00:07:30.472 class of the stem cell center.

NOTE Confidence: 0.9201268

00:07:30.480 --> 00:07:33.310 So I talked to Hifi and India and the child

NOTE Confidence: 0.932838463157895

00:07:33.384 --> 00:07:35.760 home and say hey why we just do this

NOTE Confidence: 0.932838463157895

00:07:35.760 --> 00:07:40.386 create a repository for the Andrew IPIC.

NOTE Confidence: 0.932838463157895

00:07:40.386 --> 00:07:43.154 So luckily we got a very generous support

NOTE Confidence: 0.932838463157895

00:07:43.154 --> 00:07:45.266 for the fast foundation for Andrew

NOTE Confidence: 0.932838463157895

00:07:45.266 --> 00:07:47.558 and therapeutic they give very general

NOTE Confidence: 0.932838463157895

00:07:47.558 --> 00:07:49.516 support and right before the COVID.

NOTE Confidence: 0.932838463157895

00:07:49.520 --> 00:07:50.936 So over the last three years

NOTE Confidence: 0.932838463157895

00:07:50.936 --> 00:07:51.880 even during the COVID,

NOTE Confidence: 0.932838463157895

00:07:51.880 --> 00:07:54.630 we were able to generate.

NOTE Confidence: 0.932838463157895

00:07:54.630 --> 00:07:58.725 One day cell line IPS IPSC cell line from

NOTE Confidence: 0.932838463157895

00:07:58.725 --> 00:08:00.750 different genotype including the control.

NOTE Confidence: 0.932838463157895

00:08:00.750 --> 00:08:02.070 This is free to everyone here.

NOTE Confidence: 0.932838463157895

00:08:02.070 --> 00:08:04.574 If you're interested you can just e-mail me

NOTE Confidence: 0.932838463157895

00:08:04.574 --> 00:08:07.187 are free to distribute it to each of you.

NOTE Confidence: 0.932838463157895

00:08:07.190 --> 00:08:09.990 So that allow us to really ask the

NOTE Confidence: 0.932838463157895

00:08:09.990 --> 00:08:12.298 question whether phenomenon we study from

NOTE Confidence: 0.932838463157895

00:08:12.298 --> 00:08:15.020 mice is the translator from the mice.

NOTE Confidence: 0.932838463157895

00:08:15.020 --> 00:08:16.721 So I'll just give you a few slide and

NOTE Confidence: 0.932838463157895

00:08:16.721 --> 00:08:18.337 the summers are published already.

NOTE Confidence: 0.932838463157895

00:08:18.340 --> 00:08:20.896 And then to shows the phenomena,

NOTE Confidence: 0.932838463157895

00:08:20.900 --> 00:08:22.760 same phenomena we observed from

NOTE Confidence: 0.932838463157895

00:08:22.760 --> 00:08:25.494 the mice which you can see the FHHP

NOTE Confidence: 0.932838463157895

00:08:25.494 --> 00:08:27.692 which indeed in IPSC the wife the

NOTE Confidence: 0.932838463157895

00:08:27.692 --> 00:08:30.359 2D new one in the cortical new one

NOTE Confidence: 0.932838463157895

00:08:30.359 --> 00:08:32.300 in this is enhanced the two.

NOTE Confidence: 0.932838463157895

00:08:32.300 --> 00:08:34.535 So that's increased the frequency

NOTE Confidence: 0.932838463157895

00:08:34.535 --> 00:08:36.323 suggestion the hyperexcitable new

NOTE Confidence: 0.932838463157895

00:08:36.323 --> 00:08:38.548 one and then we all can can use

NOTE Confidence: 0.932838463157895

00:08:38.548 --> 00:08:40.608 in the sort of rescue indeed it

NOTE Confidence: 0.932838463157895

00:08:40.608 --> 00:08:42.492 shows that deficiency UPC is a

NOTE Confidence: 0.932838463157895

00:08:42.500 --> 00:08:43.630 responsibly electrophysiology.

NOTE Confidence: 0.932838463157895

00:08:43.630 --> 00:08:44.195 Phenomena.

NOTE Confidence: 0.932838463157895

00:08:44.195 --> 00:08:48.660 Now we got to choose also biochemical assay.

NOTE Confidence: 0.932838463157895

00:08:48.660 --> 00:08:51.948 Indeed it's correlated for the BK

NOTE Confidence: 0.932838463157895

00:08:51.948 --> 00:08:54.832 channel function in the 2D neuron.

NOTE Confidence: 0.932838463157895

00:08:54.832 --> 00:08:56.908 Now you can show also the

NOTE Confidence: 0.932838463157895

00:08:56.908 --> 00:08:58.420 paxilance same as in vivo,

NOTE Confidence: 0.932838463157895

00:08:58.420 --> 00:09:00.220 in the mice can suppress

NOTE Confidence: 0.932838463157895

00:09:00.220 --> 00:09:01.373 this hyperexatibility,

NOTE Confidence: 0.932838463157895

00:09:01.373 --> 00:09:05.338 but in the 2D neuron,

NOTE Confidence: 0.932838463157895

00:09:05.340 --> 00:09:06.580 now we move on together.

NOTE Confidence: 0.948639766666667

00:09:13.220 --> 00:09:15.620 That's we cannot advance. So that's

NOTE Confidence: 0.9402536

00:09:21.380 --> 00:09:23.048 right. All right. Maybe I did

NOTE Confidence: 0.9402536

00:09:23.048 --> 00:09:24.579 something which I should not do.

NOTE Confidence: 0.941691228571429

00:09:27.580 --> 00:09:30.235 So then when you organize 3D neurons, it

NOTE Confidence: 0.941691228571429

00:09:30.235 --> 00:09:33.420 shows very similar discovery of funding to.

NOTE Confidence: 0.941691228571429

00:09:33.420 --> 00:09:36.498 Yeah, same thing, the increase the.

NOTE Confidence: 0.95409072625

00:09:38.520 --> 00:09:41.370 Frequency then the pass and

NOTE Confidence: 0.95409072625

00:09:41.370 --> 00:09:43.080 suppress the hyperexcitability.

NOTE Confidence: 0.95409072625

00:09:43.080 --> 00:09:44.790 Of course the question will come

NOTE Confidence: 0.95409072625

00:09:44.790 --> 00:09:46.395 to whether you can recapitulate

NOTE Confidence: 0.95409072625

00:09:46.395 --> 00:09:48.837 epileptic form in the brain organelle.

NOTE Confidence: 0.95409072625

00:09:48.840 --> 00:09:50.760 That's question we still have not

NOTE Confidence: 0.95409072625

00:09:50.760 --> 00:09:53.158 get into that very very very detail.

NOTE Confidence: 0.95409072625

00:09:53.160 --> 00:09:55.190 So that's all looks good because we

NOTE Confidence: 0.95409072625

00:09:55.190 --> 00:09:57.256 can study the mice to translate the

NOTE Confidence: 0.95409072625

00:09:57.256 --> 00:09:59.198 human allow us to the confidence

NOTE Confidence: 0.95409072625

00:09:59.198 --> 00:10:01.268 maybe indeed we can allow these

NOTE Confidence: 0.95409072625

00:10:01.268 --> 00:10:04.030 two system to testing additional.

NOTE Confidence: 0.95409072625

00:10:04.030 --> 00:10:06.391 Particular for treatment strategy.

NOTE Confidence: 0.95409072625

00:10:06.391 --> 00:10:09.010 So one of the thing we are working on

NOTE Confidence: 0.95409072625

00:10:09.075 --> 00:10:11.739 right now is to try to using this strategy.

NOTE Confidence: 0.95409072625

00:10:11.740 --> 00:10:12.664 As I told you,

NOTE Confidence: 0.95409072625

00:10:12.664 --> 00:10:14.819 I could not get into the very detail.

NOTE Confidence: 0.95409072625

00:10:14.820 --> 00:10:16.920 So the mechanism regulate this

NOTE Confidence: 0.95409072625

00:10:16.920 --> 00:10:19.639 imprinting is due to the antisense

NOTE Confidence: 0.95409072625

00:10:19.639 --> 00:10:21.779 Bay long megabase continuous

NOTE Confidence: 0.95409072625

00:10:21.779 --> 00:10:24.454 antisense long line coding RNA.

NOTE Confidence: 0.95409072625

00:10:24.460 --> 00:10:26.740 So the one strategy is if we can

NOTE Confidence: 0.95409072625

00:10:26.740 --> 00:10:28.699 disrupt this long line coding RNA

NOTE Confidence: 0.95409072625

00:10:28.699 --> 00:10:31.060 and then you can reactivate the gene.

NOTE Confidence: 0.95409072625

00:10:31.060 --> 00:10:33.052 On matpat and chromosome is supposed

NOTE Confidence: 0.95409072625

00:10:33.052 --> 00:10:35.819 as like a gene therapy can approach.

NOTE Confidence: 0.95409072625

00:10:35.820 --> 00:10:39.620 So the ASO has proved it's effective and

NOTE Confidence: 0.95409072625

00:10:39.620 --> 00:10:42.293 it's also in the phase one trial right now.

NOTE Confidence: 0.95409072625

00:10:42.300 --> 00:10:44.169 So we think about it with whether

NOTE Confidence: 0.95409072625

00:10:44.169 --> 00:10:46.257 we should do a more permanent fix.

NOTE Confidence: 0.95409072625

00:10:46.260 --> 00:10:48.308 The ASO we need every month sort of

NOTE Confidence: 0.95409072625

00:10:48.308 --> 00:10:51.335 the eye spinal injection and now we

NOTE Confidence: 0.95409072625

00:10:51.335 --> 00:10:54.820 work on this with CRISPR additive.

NOTE Confidence: 0.95409072625

00:10:54.820 --> 00:10:58.450 So working with collaborative with the.

NOTE Confidence: 0.95409072625

00:10:58.450 --> 00:11:00.712 People from the biomedical engineer as

NOTE Confidence: 0.95409072625

00:11:00.712 --> 00:11:03.210 deliver crisp to brain is a challenge.

NOTE Confidence: 0.95409072625

00:11:03.210 --> 00:11:05.443 We actually got this piece of very

NOTE Confidence: 0.95409072625

00:11:05.443 --> 00:11:08.022 exciting data by our AIS in the lab

NOTE Confidence: 0.95409072625

00:11:08.022 --> 00:11:10.632 shall now shows you we use this

NOTE Confidence: 0.95409072625

00:11:10.632 --> 00:11:12.972 chemical modified I MP conjugated

NOTE Confidence: 0.95409072625

00:11:12.972 --> 00:11:16.032 CAS 9 protein and and gala and

NOTE Confidence: 0.95409072625

00:11:16.032 --> 00:11:18.002 they together deliver IT intracego

NOTE Confidence: 0.95409072625

00:11:18.002 --> 00:11:19.608 injection which you can see.

NOTE Confidence: 0.95409072625

00:11:19.610 --> 00:11:22.130 Amazingly this deliver the editing in

NOTE Confidence: 0.95409072625

00:11:22.130 --> 00:11:24.660 the cortical neuro and cerebellum.

NOTE Confidence: 0.95409072625

00:11:24.660 --> 00:11:26.739 Which you can see this a new M cell,

NOTE Confidence: 0.95409072625

00:11:26.740 --> 00:11:29.476 then this green cell,

NOTE Confidence: 0.95409072625

00:11:29.476 --> 00:11:31.616 it's a reactivation after editing

NOTE Confidence: 0.95409072625

00:11:31.616 --> 00:11:32.900 the anti sense.

NOTE Confidence: 0.95409072625

00:11:32.900 --> 00:11:36.152 It's almost like 70% efficiency for

NOTE Confidence: 0.95409072625

00:11:36.152 --> 00:11:39.075 this coach similar to the cortico

NOTE Confidence: 0.95409072625

00:11:39.075 --> 00:11:40.975 that is pretty amazing.

NOTE Confidence: 0.95409072625

00:11:40.980 --> 00:11:43.340 So we feel like this will be the next step.

NOTE Confidence: 0.95409072625

00:11:43.340 --> 00:11:44.954 We are watching actually active working

NOTE Confidence: 0.95409072625

00:11:44.954 --> 00:11:47.297 on the 2D and the 3D neuron right now,

NOTE Confidence: 0.95409072625

00:11:47.300 --> 00:11:49.932 see if for the same delivery it's

NOTE Confidence: 0.95409072625

00:11:49.932 --> 00:11:51.677 effective if entry before we

NOTE Confidence: 0.95409072625

00:11:51.677 --> 00:11:55.370 go to FDI&D and to the human.

NOTE Confidence: 0.95409072625

00:11:55.370 --> 00:11:58.490 So I'm gonna switch the GAIL

NOTE Confidence: 0.95409072625

00:11:58.490 --> 00:11:59.600 for second disorder,

NOTE Confidence: 0.95409072625

00:11:59.600 --> 00:12:01.370 which I hope that you will

NOTE Confidence: 0.95409072625

00:12:01.370 --> 00:12:02.970 find also very interesting.

NOTE Confidence: 0.95409072625

00:12:02.970 --> 00:12:04.806 In the same scene I could

NOTE Confidence: 0.95409072625

00:12:04.806 --> 00:12:05.724 genetically related disorder.

NOTE Confidence: 0.95409072625

00:12:05.730 --> 00:12:07.872 So this is a patient I saw about four

NOTE Confidence: 0.95409072625

00:12:07.872 --> 00:12:09.906 or five years ago in the clinic.

NOTE Confidence: 0.95409072625

00:12:09.910 --> 00:12:12.234 It's a very similar to engerman but

NOTE Confidence: 0.95409072625

00:12:12.234 --> 00:12:13.859 that's definitely severity it's 11

NOTE Confidence: 0.95409072625

00:12:13.859 --> 00:12:15.279 mile and moderated compare engerman

NOTE Confidence: 0.95409072625

00:12:15.279 --> 00:12:17.605 and to me it's a severe and and this

NOTE Confidence: 0.95409072625

00:12:17.605 --> 00:12:19.936 is a moderate and with autism as

NOTE Confidence: 0.95409072625

00:12:19.936 --> 00:12:21.784 a predominant feature intellectual

NOTE Confidence: 0.95409072625

00:12:21.784 --> 00:12:23.566 disability interesting they have

NOTE Confidence: 0.95409072625

00:12:23.566 --> 00:12:25.582 macrosuppony which the big brain is

NOTE Confidence: 0.95409072625

00:12:25.582 --> 00:12:27.918 the bigger they have a low percentage

NOTE Confidence: 0.95409072625

00:12:27.918 --> 00:12:30.094 of low frequent preference of epilepsy

NOTE Confidence: 0.95409072625

00:12:30.094 --> 00:12:33.757 too and so so this is the the boy

NOTE Confidence: 0.95409072625

00:12:33.757 --> 00:12:37.130 and what he was nine years old and then.

NOTE Confidence: 0.95409072625

00:12:37.130 --> 00:12:39.727 Later on then was to find interesting

NOTE Confidence: 0.95409072625

00:12:39.727 --> 00:12:41.769 another end of a phenotype.

NOTE Confidence: 0.95409072625

00:12:41.770 --> 00:12:44.128 This is the

NOTE Confidence: 0.939582706666667

00:12:44.130 --> 00:12:47.763 sort of a longitudinal sort of picture

NOTE Confidence: 0.939582706666667

00:12:47.763 --> 00:12:51.526 from the infant to when he was thirty.

NOTE Confidence: 0.939582706666667

00:12:51.530 --> 00:12:53.006 I hope you probably say okay,

NOTE Confidence: 0.939582706666667

00:12:53.010 --> 00:12:56.769 that's probably not 30 years old face,

NOTE Confidence: 0.939582706666667

00:12:56.770 --> 00:12:58.048 it's probably more old than that.

NOTE Confidence: 0.939582706666667

00:12:58.050 --> 00:12:59.886 So that's a premature Asian phenotype

NOTE Confidence: 0.939582706666667

00:12:59.886 --> 00:13:02.170 that's we think it's also the other end.

NOTE Confidence: 0.939582706666667

00:13:02.170 --> 00:13:03.448 It's very interesting.

NOTE Confidence: 0.939582706666667

00:13:03.448 --> 00:13:05.578 That's a delay early new

NOTE Confidence: 0.939582706666667

00:13:05.578 --> 00:13:07.069 development somehow later on.

NOTE Confidence: 0.939582706666667

00:13:07.070 --> 00:13:10.830 Is actually accelerated aging process

NOTE Confidence: 0.939582706666667

00:13:10.830 --> 00:13:13.118 so that's clear a puzzle and and then

NOTE Confidence: 0.939582706666667

00:13:13.118 --> 00:13:15.013 we're looking for the genetic we we

NOTE Confidence: 0.939582706666667

00:13:15.013 --> 00:13:17.349 did a whole accident in the clinic we

NOTE Confidence: 0.939582706666667

00:13:17.349 --> 00:13:19.371 identified the first mutation is patient

NOTE Confidence: 0.939582706666667

00:13:19.371 --> 00:13:22.940 other colleague from UK also similar

NOTE Confidence: 0.939582706666667

00:13:22.940 --> 00:13:25.852 time 2017 2018 report a few other

NOTE Confidence: 0.939582706666667

00:13:25.852 --> 00:13:28.276 case and eventually last five years

NOTE Confidence: 0.939582706666667

00:13:28.276 --> 00:13:30.784 will accumulate almost 100 case now.

NOTE Confidence: 0.939582706666667

00:13:30.790 --> 00:13:33.328 So what you notice quickly matured

NOTE Confidence: 0.939582706666667

00:13:33.328 --> 00:13:36.520 for mutation in the C terminal domain.

NOTE Confidence: 0.939582706666667

00:13:36.520 --> 00:13:38.845 And majority for them it's

NOTE Confidence: 0.939582706666667

00:13:38.845 --> 00:13:40.240 A-frame shift mutation.

NOTE Confidence: 0.939582706666667

00:13:40.240 --> 00:13:42.060 What's more interesting when you

NOTE Confidence: 0.939582706666667

00:13:42.060 --> 00:13:43.516 do the computational prediction,

NOTE Confidence: 0.939582706666667

00:13:43.520 --> 00:13:45.200 the open reading frame,

NOTE Confidence: 0.939582706666667

00:13:45.200 --> 00:13:46.880 actually it's quite interesting,

NOTE Confidence: 0.939582706666667

00:13:46.880 --> 00:13:50.939 you can see here if you do the open

NOTE Confidence: 0.939582706666667

00:13:50.939 --> 00:13:54.348 reading from open reading from prediction,

NOTE Confidence: 0.939582706666667

00:13:54.348 --> 00:13:56.776 regardless where the mutation

NOTE Confidence: 0.939582706666667

00:13:56.776 --> 00:13:59.944 location near all and very very same

NOTE Confidence: 0.939582706666667

00:13:59.944 --> 00:14:04.310 tail about for the amino acid at N.

NOTE Confidence: 0.939582706666667

00:14:04.310 --> 00:14:07.350 So that's to me is a little unusual.

NOTE Confidence: 0.939582706666667

00:14:07.350 --> 00:14:08.118 I'm a geneticist,

NOTE Confidence: 0.939582706666667

00:14:08.118 --> 00:14:09.910 I see a lot of patient database.

NOTE Confidence: 0.939582706666667

00:14:09.910 --> 00:14:11.926 I have not seen this kind of

NOTE Confidence: 0.939582706666667

00:14:11.926 --> 00:14:12.790 phenomenon very often.

NOTE Confidence: 0.939582706666667

00:14:12.790 --> 00:14:13.870 If it happen one of you,

NOTE Confidence: 0.939582706666667

00:14:13.870 --> 00:14:16.147 you have some case like this talking

NOTE Confidence: 0.939582706666667

00:14:16.147 --> 00:14:18.086 to me and we kind of working

NOTE Confidence: 0.939582706666667

00:14:18.086 --> 00:14:20.029 together to figure out this puzzle.

NOTE Confidence: 0.939582706666667

00:14:20.030 --> 00:14:22.670 Interestingly we also generate and

NOTE Confidence: 0.939582706666667

00:14:22.670 --> 00:14:26.110 antibody specifically against this tail.

NOTE Confidence: 0.939582706666667

00:14:26.110 --> 00:14:27.870 The antibody actually very easy

NOTE Confidence: 0.939582706666667

00:14:27.870 --> 00:14:30.032 to generate because this tail if

NOTE Confidence: 0.939582706666667

00:14:30.032 --> 00:14:32.072 you against the genome or podium

NOTE Confidence: 0.939582706666667

00:14:32.072 --> 00:14:33.092 actually pretty unique.

NOTE Confidence: 0.939582706666667

00:14:33.100 --> 00:14:35.098 So allow you to very quickly

NOTE Confidence: 0.939582706666667

00:14:35.098 --> 00:14:36.097 generate this antibody.

NOTE Confidence: 0.939582706666667

00:14:36.100 --> 00:14:37.696 Now you're testing the patient IP.

NOTE Confidence: 0.939582706666667

00:14:37.700 --> 00:14:41.460 At the same time we generate about a

NOTE Confidence: 0.939582706666667

00:14:41.460 --> 00:14:44.540 IPSC cell line from this patient too.

NOTE Confidence: 0.939582706666667

00:14:44.540 --> 00:14:47.116 So you can see this IPSC cell

NOTE Confidence: 0.939582706666667

00:14:47.116 --> 00:14:49.592 line and this abnormal tail,

NOTE Confidence: 0.939582706666667

00:14:49.592 --> 00:14:52.336 it's indeed it's stable.

NOTE Confidence: 0.939582706666667

00:14:52.340 --> 00:14:54.180 So that raised the question

NOTE Confidence: 0.939582706666667

00:14:54.180 --> 00:14:55.652 whether this abnormal tail.

NOTE Confidence: 0.939582706666667

00:14:55.660 --> 00:14:57.592 It's actually gain of function or

NOTE Confidence: 0.939582706666667

00:14:57.592 --> 00:14:59.161 dominant net function because when

NOTE Confidence: 0.939582706666667

00:14:59.161 --> 00:15:00.977 you now call this gene in the mice,

NOTE Confidence: 0.939582706666667

00:15:00.980 --> 00:15:03.740 they have no significant phenotype.

NOTE Confidence: 0.939582706666667

00:15:03.740 --> 00:15:05.777 But in the habazygs in the human,

NOTE Confidence: 0.939582706666667

00:15:05.780 --> 00:15:08.699 it's very definitely a very severe phenotype.

NOTE Confidence: 0.939582706666667

00:15:08.700 --> 00:15:11.462 So that we interesting also this

NOTE Confidence: 0.939582706666667

00:15:11.462 --> 00:15:13.466 is same mutation or same mutation

NOTE Confidence: 0.939582706666667

00:15:13.466 --> 00:15:15.540 in the mouse gene or mouse gene,

NOTE Confidence: 0.939582706666667

00:15:15.540 --> 00:15:19.300 you won't be able to create the same tail.

NOTE Confidence: 0.939582706666667

00:15:19.300 --> 00:15:22.380 So it's only to the human coating.

NOTE Confidence: 0.939582706666667

00:15:22.380 --> 00:15:24.150 So that create a little challenge

NOTE Confidence: 0.939582706666667

00:15:24.150 --> 00:15:26.090 to to manipulate in the mice but

NOTE Confidence: 0.939582706666667

00:15:26.090 --> 00:15:27.500 of course we can't do it.

NOTE Confidence: 0.939582706666667

00:15:27.500 --> 00:15:30.195 We made in the humanized mouse model

NOTE Confidence: 0.939582706666667

00:15:30.195 --> 00:15:32.476 by engineering the entire human gene

NOTE Confidence: 0.939582706666667

00:15:32.476 --> 00:15:34.962 in the marketing of the car knocking

NOTE Confidence: 0.939582706666667

00:15:34.962 --> 00:15:37.254 and replace the anti mouse genome.

NOTE Confidence: 0.939582706666667

00:15:37.260 --> 00:15:38.871 So that's ongoing.

NOTE Confidence: 0.939582706666667

00:15:38.871 --> 00:15:41.670 We're just talking to people outside

NOTE Confidence: 0.939582706666667

00:15:41.670 --> 00:15:43.945 like it's a mouse have azyg have

NOTE Confidence: 0.939582706666667

00:15:43.945 --> 00:15:45.818 mild phenol type homozygic actually

NOTE Confidence: 0.939582706666667

00:15:45.818 --> 00:15:48.032 end the post Natal early so.

NOTE Confidence: 0.939582706666667

00:15:48.040 --> 00:15:48.230 So,

NOTE Confidence: 0.939582706666667

00:15:48.230 --> 00:15:49.940 but in any way so we will say OK

NOTE Confidence: 0.939582706666667

00:15:50.000 --> 00:15:52.043 that would be good to kind of look a

NOTE Confidence: 0.939582706666667

00:15:52.043 --> 00:15:53.915 little more this is a very definitely

NOTE Confidence: 0.941691154285714

00:15:53.920 --> 00:15:56.314 because my title is a new epigenetic.

NOTE Confidence: 0.941691154285714

00:15:56.320 --> 00:15:58.528 So it's a, it's a H1 link protein

NOTE Confidence: 0.941691154285714

00:15:58.528 --> 00:16:00.428 as you know probably have about

NOTE Confidence: 0.941691154285714

00:16:00.428 --> 00:16:03.097 11 H one link some of the somatic

NOTE Confidence: 0.941691154285714

00:16:03.097 --> 00:16:05.512 form is one of five somatic form.

NOTE Confidence: 0.941691154285714

00:16:05.520 --> 00:16:07.739 So this H1 link and the function

NOTE Confidence: 0.941691154285714

00:16:07.739 --> 00:16:10.269 for H1 link in largely we still

NOTE Confidence: 0.941691154285714

00:16:10.269 --> 00:16:12.519 don't know because over the last

NOTE Confidence: 0.941691154285714

00:16:12.595 --> 00:16:15.045 25 years lot of people study cold.

NOTE Confidence: 0.941691154285714

00:16:15.050 --> 00:16:16.930 For histone, very, very detailed,

NOTE Confidence: 0.941691154285714

00:16:16.930 --> 00:16:19.289 but this is almost like a forgotten

NOTE Confidence: 0.941691154285714

00:16:19.290 --> 00:16:21.210 histone for over the last decade.

NOTE Confidence: 0.941691154285714

00:16:21.210 --> 00:16:23.786 But now you can come to interesting for

NOTE Confidence: 0.941691154285714

00:16:23.786 --> 00:16:26.448 many people because the human disease link.

NOTE Confidence: 0.941691154285714

00:16:26.450 --> 00:16:29.124 So again it's a link histone with

NOTE Confidence: 0.941691154285714

00:16:29.124 --> 00:16:31.410 the link DNA and it's core histone.

NOTE Confidence: 0.941691154285714

00:16:31.410 --> 00:16:33.810 Presumably function is making the

NOTE Confidence: 0.941691154285714

00:16:33.810 --> 00:16:36.426 chromity more compact but it's a

NOTE Confidence: 0.941691154285714

00:16:36.426 --> 00:16:38.782 very basic component of the histone,

NOTE Confidence: 0.941691154285714

00:16:38.782 --> 00:16:41.140 but the link to very selectively

NOTE Confidence: 0.941691154285714

00:16:41.217 --> 00:16:43.932 human neuro behaviour and neuro

NOTE Confidence: 0.941691154285714

00:16:43.932 --> 00:16:45.018 developmental phenotype.

NOTE Confidence: 0.941691154285714

00:16:45.020 --> 00:16:47.176 So, so that's what we would generate

NOTE Confidence: 0.941691154285714

00:16:47.176 --> 00:16:48.842 a panel of an IPSL again,

NOTE Confidence: 0.941691154285714

00:16:48.842 --> 00:16:50.739 again a child home and in yon.

NOTE Confidence: 0.941691154285714

00:16:50.740 --> 00:16:53.420 And for this effort,

NOTE Confidence: 0.941691154285714

00:16:53.420 --> 00:16:55.105 sometimes people ask and say

NOTE Confidence: 0.941691154285714

00:16:55.105 --> 00:16:57.420 why you didn't do it at Duke.

NOTE Confidence: 0.941691154285714

00:16:57.420 --> 00:16:58.180 And I would say, well,

NOTE Confidence: 0.941691154285714

00:16:58.180 --> 00:16:59.496 yeah, we want to do at Duke,

NOTE Confidence: 0.941691154285714

00:16:59.500 --> 00:17:02.500 but we don't have a facility like here.

NOTE Confidence: 0.941691154285714

00:17:02.500 --> 00:17:04.404 I find I left two years ago

NOTE Confidence: 0.941691154285714

00:17:04.404 --> 00:17:05.859 before I joined the Duke.

NOTE Confidence: 0.941691154285714

00:17:05.860 --> 00:17:07.210 But that's what we lost high

NOTE Confidence: 0.941691154285714

00:17:07.210 --> 00:17:08.776 final deal and now we don't have

NOTE Confidence: 0.941691154285714

00:17:08.776 --> 00:17:10.376 the stem cell facility there.

NOTE Confidence: 0.941691154285714

00:17:10.376 --> 00:17:12.890 So that's what's asking you should have

NOTE Confidence: 0.941691154285714

00:17:12.890 --> 00:17:15.375 taken advantage of for we have indeed

NOTE Confidence: 0.941691154285714

00:17:15.375 --> 00:17:17.139 excellent facility environment here.

NOTE Confidence: 0.941691154285714

00:17:17.140 --> 00:17:19.708 So again remind you this phenotype

NOTE Confidence: 0.941691154285714

00:17:19.708 --> 00:17:21.420 patient have a macrocell,

NOTE Confidence: 0.941691154285714

00:17:21.420 --> 00:17:22.380 a big cell,

NOTE Confidence: 0.941691154285714

00:17:22.380 --> 00:17:23.340 a big brain.

NOTE Confidence: 0.941691154285714

00:17:23.340 --> 00:17:26.035 So you look at the cell proliferation

NOTE Confidence: 0.941691154285714

00:17:26.035 --> 00:17:27.679 indeed somehow suggesting that

NOTE Confidence: 0.941691154285714

00:17:27.679 --> 00:17:29.814 maybe correlate the human phenotype

NOTE Confidence: 0.941691154285714

00:17:29.814 --> 00:17:31.522 they are proliferated faster.

NOTE Confidence: 0.941691154285714

00:17:31.530 --> 00:17:36.678 Then both in IPSA and MPSC new one early

NOTE Confidence: 0.941691154285714

00:17:36.678 --> 00:17:39.490 precursor and we also did it for the I,

NOTE Confidence: 0.941691154285714

00:17:39.490 --> 00:17:42.087 I and they seek and looking for.

NOTE Confidence: 0.941691154285714

00:17:42.090 --> 00:17:44.475 Whether it's a chromatin structure

NOTE Confidence: 0.941691154285714

00:17:44.475 --> 00:17:46.383 affect the downstream transcription

NOTE Confidence: 0.941691154285714

00:17:46.383 --> 00:17:49.049 indeed is when you have this mutation

NOTE Confidence: 0.941691154285714

00:17:49.049 --> 00:17:51.090 chromatin sounds like more relaxing.

NOTE Confidence: 0.941691154285714

00:17:51.090 --> 00:17:53.334 So more gene up regulated and

NOTE Confidence: 0.941691154285714

00:17:53.334 --> 00:17:55.641 surprising to us it's you actually

NOTE Confidence: 0.941691154285714

00:17:55.641 --> 00:17:58.210 see the set of a gene regulated,

NOTE Confidence: 0.941691154285714

00:17:58.210 --> 00:17:59.860 it's actually still in the

NOTE Confidence: 0.941691154285714

00:17:59.860 --> 00:18:00.850 chromatin related gene.

NOTE Confidence: 0.941691154285714

00:18:00.850 --> 00:18:03.328 Many ask actually chromatin related gene.

NOTE Confidence: 0.941691154285714

00:18:03.330 --> 00:18:04.950 So we are very,

NOTE Confidence: 0.941691154285714

00:18:04.950 --> 00:18:06.975 very intriguing by this founding.

NOTE Confidence: 0.941691154285714

00:18:06.980 --> 00:18:08.828 We also look at because this is a

NOTE Confidence: 0.941691154285714

00:18:08.828 --> 00:18:09.939 chromatin structural later protein,

NOTE Confidence: 0.941691154285714

00:18:09.940 --> 00:18:12.560 we asking whether that's actually

NOTE Confidence: 0.941691154285714

00:18:12.560 --> 00:18:15.092 indeed affect the chromatin nuclear

NOTE Confidence: 0.941691154285714

00:18:15.092 --> 00:18:16.820 morphology or chromatin structure.

NOTE Confidence: 0.941691154285714

00:18:16.820 --> 00:18:19.614 So we did a EM for this IPIC and

NOTE Confidence: 0.941691154285714

00:18:19.614 --> 00:18:21.833 and the neuron we look in the

NOTE Confidence: 0.941691154285714

00:18:21.833 --> 00:18:23.643 morphology of the nucleolo and

NOTE Confidence: 0.941691154285714

00:18:23.643 --> 00:18:25.423 the nucleus indeed that's alter

NOTE Confidence: 0.941691154285714

00:18:25.423 --> 00:18:27.658 the morphology from the nucleus.

NOTE Confidence: 0.941691154285714

00:18:27.660 --> 00:18:30.090 So indeed because the unique

NOTE Confidence: 0.941691154285714

00:18:30.090 --> 00:18:32.034 this protein alteration which

NOTE Confidence: 0.941691154285714

00:18:32.034 --> 00:18:34.613 are not mimicking in the mice.

NOTE Confidence: 0.941691154285714

00:18:34.613 --> 00:18:38.100 So that I PRC derived 2D and 3D new

NOTE Confidence: 0.941691154285714

00:18:38.100 --> 00:18:40.717 one actually indeed it's the one way

NOTE Confidence: 0.941691154285714

00:18:40.717 --> 00:18:42.690 to to do more sort of investigation.

NOTE Confidence: 0.941691154285714

00:18:42.690 --> 00:18:44.962 I do have time to show you the

NOTE Confidence: 0.941691154285714

00:18:44.962 --> 00:18:47.059 organized other data on different time

NOTE Confidence: 0.941691154285714

00:18:47.059 --> 00:18:49.249 and almost close perfect time there.

NOTE Confidence: 0.941691154285714

00:18:49.250 --> 00:18:52.450 So I hope that by using the two

NOTE Confidence: 0.941691154285714

00:18:52.450 --> 00:18:54.084 example illustrated 21 is that

NOTE Confidence: 0.941691154285714

00:18:54.084 --> 00:18:56.030 you don't have to be the stem

NOTE Confidence: 0.937885741176471

00:18:56.100 --> 00:18:58.809 cell biologist to study stem cell work.

NOTE Confidence: 0.937885741176471

00:18:58.810 --> 00:19:01.588 Second is I hope you also.

NOTE Confidence: 0.937885741176471

00:19:01.590 --> 00:19:03.384 Data from if you study mice

NOTE Confidence: 0.937885741176471

00:19:03.384 --> 00:19:05.620 actually indeed it would be good to

NOTE Confidence: 0.937885741176471

00:19:05.620 --> 00:19:07.255 translate what your mouse discovery

NOTE Confidence: 0.937885741176471

00:19:07.255 --> 00:19:09.441 of funding from mutant mice to one

NOTE Confidence: 0.937885741176471

00:19:09.441 --> 00:19:11.510 more step between the human device,

NOTE Confidence: 0.937885741176471

00:19:11.510 --> 00:19:15.110 this neuron before moving to the

NOTE Confidence: 0.937885741176471

00:19:15.110 --> 00:19:18.338 we call it FDI&D study because

NOTE Confidence: 0.937885741176471

00:19:18.338 --> 00:19:21.532 we are fail many many occasion,

NOTE Confidence: 0.937885741176471

00:19:21.532 --> 00:19:23.380 many example everything is

NOTE Confidence: 0.937885741176471

00:19:23.380 --> 00:19:25.228 beautiful in the mice,

NOTE Confidence: 0.937885741176471

00:19:25.230 --> 00:19:28.107 it's a fail in the human stage.

NOTE Confidence: 0.937885741176471

00:19:28.110 --> 00:19:30.686 So large of the people in the lab

NOTE Confidence: 0.937885741176471

00:19:30.686 --> 00:19:32.837 primarily I think the people Kung

NOTE Confidence: 0.937885741176471

00:19:32.837 --> 00:19:36.010 Yun is the primary thing is now here

NOTE Confidence: 0.937885741176471

00:19:36.010 --> 00:19:38.620 working on the andrewman IPSC and

NOTE Confidence: 0.937885741176471

00:19:38.713 --> 00:19:41.758 IPSC organelle and then so nice data

NOTE Confidence: 0.937885741176471

00:19:41.758 --> 00:19:44.651 from the mouse for the IP and then

NOTE Confidence: 0.937885741176471

00:19:44.651 --> 00:19:46.982 a few other kind of also work in the

NOTE Confidence: 0.937885741176471

00:19:46.982 --> 00:19:48.628 similar sort of standing project.

NOTE Confidence: 0.937885741176471

00:19:48.630 --> 00:19:52.510 And then of course without your stem

NOTE Confidence: 0.937885741176471

00:19:52.510 --> 00:19:54.890 cell center support this kind of large

NOTE Confidence: 0.937885741176471

00:19:54.890 --> 00:19:57.555 scale production will not be the feasible.

NOTE Confidence: 0.937885741176471

00:19:57.560 --> 00:20:00.332 And all the support I've received and

NOTE Confidence: 0.937885741176471

00:20:00.332 --> 00:20:02.601 also the collaboration with Duke and

NOTE Confidence: 0.937885741176471

00:20:02.601 --> 00:20:04.960 the EOS for the engine work together.

NOTE Confidence: 0.937885741176471

00:20:04.960 --> 00:20:05.360 Thank you.