\*Disclaimer: All transcripts are provided as a resource and are not guaranteed complete accuracy

Great hi everybody I'm uh Peter Schwartz I'm the director of the IU Center for

bioethics and it's my pleasure today to introduce our inaugural lecture in the

IU Grand Round bioethics Grand round series uh We've the center for bioethics

has hosted many talks in the past and this year we decided to group together our most important and interesting ones

actually maybe just some of them uh as a bioethics grand round series we

have six planned for this year we hope that you'll consider attending the future ones which are all listed on our

website uh and you'll enjoy hopefully and engage with our community and with our overall goal of bringing

together people interested in bioethics and related topics here in our city at our University and across the state I

also welcome our colleagues from other universities especially part of the Indiana ctsi who are online all these

lectures will be in person and also online today's lecture on racing in medicine what can we learn from genetics

is being presented by the perfect inaugural speaker for our series Dr Kyle

brothers who comes to us and is an old collaborator and colleague from he's not

so old but he's a long-standing cultivator and colleague from the University of Louisville school of

medicine where he is the chief scientific officer at the Norton Children's Research Institute there and

we are just thrilled to have him talking us to today and without further Ado thank you

okay thanks so much for uh those of you who are here in person and thanks to all of you who are here virtually

um it's really been a lovely visit to Indianapolis um we come up occasionally to go to the

Children's Museum and do stuff like that but uh it's really wonderful to see very nice people and spend time with you um

so thank you so much for having me I'm going to talk today about first I'm gonna get rid of my picture so I can't

see myself there we go um I'm going to be talking today about race and Medicine

um a key issue that sort of is very active in the minds of many Physicians

these days and kind of long-standing in society is the

um biological basis of race or as we like to say the non-biological basis of race so

um there have been some Empirical research done to look at folks who have

been exposed to ancestry testing and how that might shape the way they view race

and um the the evidence shows that many people when they get exposed to that

kind of information they end up having an increase in the their perception about the biological basis of race so

they think race is biological um but this talk is basically going to

argue um that is a misunderstanding of what's happening with ancestry tests and

hopefully we can use that to make some uh conjectures about what that means for the practice of Medicine

okay first we're going to start off with some definitions and I'm going to go through a very brief uh update on

genetics things have sort of changed from the time and when I was in medical school

where we were taught classical genetics so I wanted to give kind of an update on that we're going to talk about how

genetic ancestry testing works and what that means and then we're going to talk about implications for medicine okay

the help

oh sorry not this screen

top left yeah okay how's that

okay I can I mean I haven't played the video yet

growing up we were German okay I'm not 100 sure people online we'll be able to hear this but let's try we

danced into German dance group I were Lederhosen when I first got on Ancestry I was really surprised that I wasn't

finding all of these Germans in my uh tree I decided to have my DNA tested

through ancestry DNA the big surprise was we're not German at all 52 of my DNA

comes from Scotland and Ireland so I traded in my Lederhosen for a kilt

ancestry has many paths to discovering your story get started for free at ancestry.com

growing so first of all coincidence that this character's name is Kyle and mine is as well second of all this is one of

the most wrong-headed commercials that's ever been on television and I'm going to explain why okay

so genetic essentialism this is the notion that genes can reveal to us the core of what it means to be a human and

also what it means to be an individual separate from other humans and uh this is a Insidious force in in healthcare

and in society and um it I think it's helpful to dig deep

into genetics to really understand why it's so problematic so I want to ask what can genetic

ancestry tell us about our identity and Heritage why Kyle is so horribly wrong and what does that mean for us about

race a few words about our genomes many of us when we learn genetics we were taught

this mendelian framework where they're sort of alleles and there are sort of

two versions of the alleles and you can inherit them in a dominant or recessive fashion and because many of us learn

genetics that way we project that to assume that's what all of human genetics is about and that is it not at all

what's going on in most of uh most of the genetics in the human body

um and in fact um when we cease ancestry testing we assume they sort of are looking at

alleles for features like skin tone or something like that that help tell them what um you know what ancestry a person

is and actually that's not true either there has nothing to do with any of the phenotype of a human being so

let's look at what they are doing so uh just some

can I hide this upper thing Nick [Music]

anyway it's okay um so the most important parts of our

genomes don't vary much so in fact if you look at parts of our genomes that

are the most important we will actually share those pieces with plants fungi

insects etc. um in fact one of the things that Labs

do when they're trying to understand whether a change in the genome might affect health is they actually look and

see what are the parts of the genome that are conserved from other species like chimpanzees and uh because if we

have a change from those shared things that's probably going to be disease causing because these very important

pieces don't change right um disease-causing variants which we

don't call mutations anymore because it's not really that there's something right that went wrong it's just that

we're all different they are typically those that occur de Nova which means from new they are new

things that occurred in the development of an embryo and rare variants are inherited by a

small number of people so you either have de novo things that pop up for the first time in a person that causes a

disease or there are rare variants that are inherited by a small number of people like cystic fibrosis and cause a

disease so that most of disease affecting genes fit into this category truly harmful variants those that create

sort of a childhood illness aren't common there are common variants that affect

health things like type 2 diabetes heart disease etc. but each of those variants

typically have a very small effect on that outcome so it's not that you have this variance or therefore you're going

to get this disease it's this variant marginally increases your risk of very

small amount and it's only the accumulation of these common variants that might affect your overall risk

so um these are the kinds of differences that make us distinct from one another as humans as you know human diversity is

one of the great things about humanity and these are these genetic differences uh among common variants are the things

that tend to make a difference from one another common variants are typically present in every population throughout the world

but they occur at different frequencies so when we think about how one population is different from another

population it's not that this population has a bunch of stuff this other population doesn't have it's that they

share a lot of these common variants but one has a higher rate of one variant than the other and that's actually why

groups of people are different from one another so uh ancestry testing tends to look at

what's called Snips single nucleotide polymorphisms there are several hundred

thousand of these in the human genome and these are single point locations where a single nucleotide could be one

thing or the other and typically it's that way throughout the entire human population okay there are a small subset

of these where there's three possibilities it could be a g or t but in in the vast majority of cases it's

one or the other a or G

um so in most cases um the two or all three of the

variants found at these simple locations are present in every population throughout the world but they vary and

their frequency which we call a little frequencies okay so this is just a little schematic to

show you what allele frequencies look like let's say we're looking at that particular location there's just one

nucleotide and you look at different populations so each circle is a population in the human species in one

population maybe a and g are pretty equal they have a 50 of a 50 g and then

maybe in other populations a is relatively uncommon and so and then maybe there are a few populations where

everybody is a g okay so with that background let's talk about

how ancestry tests work so um let's just think about a person oh I

should have put a and g here instead of A and B but think about a person who

inherited an a from one parent and a G from the other okay

um which populations could that person be from they could be from the first second or

third population but not the fourth right but which population are they more likely to be from

the one that has an equal distribution right because it would be relatively uncommon in the third population that

has mostly G's it would be relatively uncommon to inherit both okay so that's

how ancestry tests work you do that ten thousand times okay you go through these

single snip locations and you say what are the chances this person is from this population what are the chances this

person is from this population and then you just do that over and over again and the computer adds up the chances okay

there is a second way a slightly more modern way to do this which is based on

haplotypes so a haplotype is a sequence of snips that are not physically located

next to each other in the genome but are located near each other in the genome

and um that are found on a single copy of a chromosome so in this image you can see there's three individuals they're uh

in this segment of DNA there's five Snips and you could look at the pattern

of those five Snips so each of these people have a different haplotype at this location okay

so just like individual sniffs haplotypes occur with different frequencies in different populations and

a haplotype might be relatively unique to one population so because there's different frequencies for each of these

Snips these five in a series might be tend to only happen in that one population

so uh hap yeah haplotypes are distinctive patterns of steps that are individually common throughout the entire human

population the individual pieces of a haplotype are very common um and they're typically not relevant to

health or any other phenotype they're literally just changes in the the junk

part of the DNA okay they don't have no biological meaning so

um they're typically not right next to each other so we're not talking about a T and A G right next to each other we're

talking about in The genome with kind of segments of things that are the same for all of us

um they're kind of in series and they're more likely to be inherited together because segments of DNA are inherited

together okay so ancestry estimates are based on

Snips alone or in combination as haplotypes that are individually found in all groups okay these things are

individually found throughout all of the human population but the frequencies vary

um so the fact that companies can estimate ancestry using genetics doesn't mean that these groups are particularly

distinctive from one another um it you know the vast majority of their genomes are identical

um or these differences have medical implications okay so even though we see

this ancestry test and we think oh our genomes are so different from one another this company can tell the difference uh in fact they're all very

similar to each other and this is just a probability game okay

so let's apply this to race and I think it would just be helpful to think about an American individual who

self-identifies as black okay so um let's think about genetic diversity

for just a second and there's two ways in genetics you might think about genetic diversity one is heterozygosity

so heterozygosity means at a particular snip you have a or b okay so you might

have inherited an A and from your mom and a from your dad you might have inherited a G from your dad a G from

your mom but if you got a different you got a from one parent G from the other then your heterozygous at that location

okay so you can look throughout a person's genome um and find and then all those

individuals in a population and see how common is it for a person to in to uh

inherit one from one parent and a different one from the other parent and then you can tell how diverse is this

population because in populations that are not very diverse most people at most

locations are going to have the same it's going to be a and a right the other way oh yeah this is just

showing that reminding you that because of these probabilities that things show up in different frequencies you can

infer from Individual people what the whole population looks like okay the other way you can think about

it is there are some Snips that are biolic there's two different options or

Triolic there's three different options in one population but then every other population in the world everyone

shares exactly the same thing okay so populations that have a lot of private

alleles are more diverse okay so

um yeah in this case uh maybe there's a population where if we look at this particular snip some people have a some

people have G but if you look at every other population in the world it's just G okay we it's not even a snip it's just

like it's just the same and everybody so these populations that have a lot of

private alleles are the more diverse ones okay so these are populations from around the

world the yellow groups are from the continent of Africa so I don't think you

can see that can you see that yeah uh this is heterozygosity the

heterozygosity in populations in Africa is much higher than the rest of the world genetic diversity on the continent of

Africa is much higher than all the rest of the populations of the world this is another one again yellow is

Africa these are private alleles so locations where a population in Africa

has either an A or a g but the whole rest of the world is just a okay you can see there's extremely large number of

private alleles in African populations and the explanation as you all know for historically is that there are a lot of

diversity on the continent of Africa a subset of folks from Africa migrated out and populated the rest of the world

right so all those possibilities all that diversity didn't move out of Africa only a subset of it moved out of Africa

so this is a map um sort of projecting amount of

diversity around the world and you can see there's a lot of adversity in Africa

there's much less diversity in the whole rest of the world so African ancestry groups reflect more

genetic diversity than the rest of global ancestry groups combined okay

so if you pick two random folks who are live on the continent of Africa

they are going to be by chance less genetically simpler than two people from

any other part of the world okay and as a matter of fact the two people from Africa might be more

dissimilar from each other than one of them is from a person from Europe or a person from Asia

okay there's more genetic diversity in Africa than the whole rest of the world

so race is a way of thinking about groups of people based on socio-political categories

um but in our heads we tend to cast that as a biological thing and so we even use very confusing

language like African-American to describe uh races but in fact they don't

correspond very well with genetic ancestry in the way that we expect

so um show you all the

better um do you see the headline here so this is self-identified Black Americans by state

looking at the mean contribution from different continents okay so you can see

people who self-identify as black if you look in different states they're African ancestry May range from 0.65 65 percent

up to over 80 percent okay um if you look at on the bottom here if

you look at the European contribution to people who self-identify as African-American or as black you get

from zero to more than 30 percent okay so even though in our heads and we

even use words that say people who self-identify as black are from Africa in fact uh the folks that we identify as

black in this country based on socio-political categories actually have a lot of diversity in their genetics and

remember the part that's from Africa is actually more diverse than the whole rest of the whole rest of the world combined anyway

just to show you this works multiple ways yeah here it is this is uh

self-identified white Americans the scales on these uh are different from the previous kill so it kind of makes it

confusing but you can see there's also diversity within the European population

okay or within white populations there's diversity in the ancestry

okay so Americans reflect a significant amount of genetic admixture

race and ancestry don't correlate conceptually they're not the same thing in our heads but just as importantly

they don't correlate biologically so you all with me we doing okay all

right I know you invited me to talk about ethics Peter so here finally getting from genetics to ethics okay

um it has been very common throughout the history of medicine in the U.S to use race as a way of organizing people

and informing decision making so uh these are graphs the the details are

probably not necessary um showing that neonatologists have used for decades

um to uh estimate the survival the chances of survival based on the gender and race of the infant okay

so this uh this this is based on data from you know uh the studies that

generated these graphs the survival for a black female versus a white male is more than twice the chances of survival

of a black female is more than twice that of a white male in the NICU okay

why is that well I don't know why but it's not it's not about biology

right we already have shown that these people don't correspond in from An

ancestry perspective in the way that we expect this is almost certainly driven by social determinants of Health

so uh yeah this is just an example of race being used and pattern recognition in clinical care which is a very common

practice but it's deeply problematic so uh we're going to talk about eight

reasons using race in medicine is problematic for those of you with philosophy backgrounds you're going to see some of these are actually saying

the same thing but it's actually helpful to say them in slightly different terms because it helps us see things differently okay

so Number One self-reported race is not dependably associated with genetic ancestry okay so that that's one reason

it's problematic to use race in medicine because we're not really talking about ancestry in the way that we think

um perceived race is even worse so uh if a person walks in the clinic and a

person at my friend desk classifies that person based on the what they think they are that's even worse right I've talked

to my front desk that's what they do they say it's super awkward to ask about race so we just put in what we think okay

from a genetic perspective individuals with African ancestry are more dissimilar from one another than they

are from members of other ancestral groups okay so when we see a person who

self-identifies as black in the U.S the component of their ancestry that is inherited from Africa is nothing

specific right because there's so much diversity in Africa we really can't make any inferences based on our assumptions

of race about what the contribution of ancestry from Africa or any other continent is

American residents reflect a significant amount of genetic admixture which is to say ancestry from more than one location

so making an assumption that this person fits into that group is not easily is

not easy to make okay number five oh and just continue number five the evidence suggests uh

that ad mixtures especially true for persons who identify as white Black Or

Hispanic in the U.S um so-called founder effects might be relevant for persons whose recent

ancestors are from a single population such as a specific island in the Pacific

or from an Amish community these groups that are sort of separated from others

and we know that both parents for a person are from a population like that

there that can be useful as a rule of thumb in practice but not for folks who

are in the larger War ad mixed groups white black Hispanic using races practically worthless from a genetic

perspective number six diagnoses driven by racial assumptions will include and will

exclude important possibilities so this is a report from Pediatrics in which an eight-year-old girl who's black

was she was failed to be diagnosed with cystic fibrosis for eight years the only

time the what finally ended up getting her a diagnosis is a radiologist saw another Radiologists images from X-ray

and said hey who's the kid with CF so only the person who didn't see a

black child is the person who recognized CF picking up what I'm putting down here

okay how many times a day does this happen throughout our health care System all across the country

things don't line up the way I expect them to so therefore I make a bad assumption

okay um medical conditions including genetic conditions don't track with race in the

ways we tend to assume and this is a great image of that this

is a frequency of alleles that call the cause the condition Sickle Cell think in

your head about a sickle cell patient now look at the slide it does not correspond in the way that

we think it does folks from Northern Africa their risk might be exactly the same as a person from Europe

for folks from different areas of India their risk might be the same as folks from Africa but because we make

assumptions from race to ancestry we miss the possibility that we're going to pick up on Sickle Cell in patients who

have no risk or have a high risk okay

um yeah when we use race and clinical pattern recognition we tend to reinforce our own incorrect assumptions about

biological uh basis for race and therefore it sort of creates this uh

cascading effect in everything that we do where we're making other assumptions about how folks are different from one

another and that that's somehow biological or born into them

um yeah in the U.S context risks for medical conditions are not the same between patients who identify as black

and those who identify as white there are generations of research showing over and over and over again the risk or

conditions are not the same for those who are Black versus those who are white but

um because we don't think about systemic racism as a driver of these differences many implicitly assume much of this

difference is biology it's sort of inner genetics but it's not it's in the way the society

and and the way that systemic racism is ingrained in society creates risk for these conditions

um yeah but we know almost all this difference is due to social determinants of Health which has mechanisms of systemic and

interpersonal racism um after all we've already shown

individuals with different self-identified race do not differ from one another genetically in the way genetics essentialism would cause us to

assume so it must be social determinants of Health okay

this is my last slide um I think in general we it's

probably fine to use genetic ancestry tests um but remember human beings are far

more than their genes don't don't be tricked into thinking you're so different from someone else because the

percentage of Scottish ancestry is different on this test right it doesn't mean anything

um and for people like Kyle uh let's just think for 30 seconds about why is

it that Kyle thought he had ancestry from Germany but in fact he had ancestry from Ireland Scotland and Wells

maybe his great-grandfather adopted a child right maybe his last name Merker

if you look that is a German last name right so is are those people irrelevant to his

Heritage of course not he does have German Heritage if that was passed down through his family the fact that his

genetics don't show that is irrelevant okay so uh Kyle is uh subject to genetic

essentialism in the same way many of our health care providers are and uh we're not walking around in kilts but we're

still making mistakes so we need to learn like Kyle that's that's not uh Destiny is not in

our genes okay thank you so much

yeah how are we on time

okay

first I think

yeah great question okay I'm just going to summarize really quickly uh there's a

comment about it's super interesting I completely agree that the story of Kyle really demonstrates the way in which the

politics of these issues is reflected in the way we interpret things completely agree the other question is

um I I said there are haplotypes that are more common or may even be unique to particular populations and

um what can we read into that what can we learn from looking at haplotypes about the history

of individual groups is that fair okay great so

um for those of you who are in medicine who was taught in medical school that black

men have increased hypertension because in Africa there's not a lot of salt

in the in the U.S they're exposed to Salt I always thought that too there there's a very closely related

hypothesis uh I use that term very Loosely that um in fact the the problem

is that there was a selective pressure during the Middle Passage so the transport of African individuals in the

slave trade across the Atlantic Ocean that folks who had certain variants to

hold on to assault were more likely to survive and therefore black populations in the U.S have this genetic risk for

um for hypertension poppycock right

there is absolutely no evidence to support that and as a matter of fact as

you can imagine folks have gone looking for these genetic changes and they are not present okay

so this is just a perfect example of what you're talking about Colin where folks assume that because these

haplotypes are here there's some sort of like historical effect that created that right

that it's not there's you can look at numerous examples and you'll

always come up empty so um the reason that these haplotypes uh

can occur in a relatively unique way in a population is simply because of founder effects so you have the world's

biggest founder effect which is not all of the diversity of Africa made it out

when the world was peopled by folks from Africa right so um you got a Founder

Effect there and you get these multiple other founder effects as groups cross the Bering Strait into Europe

um so you obviously get uh migration and Inter communication of

populations over history so it's certainly not clean in the way that sometimes we assume they are but

fundamentally these patterns of a few half blood types you know are kind of unique that just comes from this history

of groups of people subset of the diversity in a population moves to another place that's simply it

hold on yeah so

um oh yeah thank you so much so the question was about uh APO L1 yeah April L1

um there's been some research to that implies it may not explain hypertension but it might explain the progression of

hypertension in Black Americans to needing dialysis

um I don't know about the specific Gene but what I can say is

um geneticists have a habit of using heuristics to estimate the heritability

of traits that they attribute to genes okay but

um you know if you were to add up the causation in like 100 causation what are

the elements that uh comprise that you would say oh this amount of causation is

from genetics this amount of causation is sort of not heritable so we assume it's from the environment and you added

all that together you would get like 500 percent right because causation doesn't

operate in that way it's not a linear thing there's uh social determinants of

Health that are influenced by systemic racism and other effects there's genetic

predispositions and if you can have genetic risk you can have a social

determinant of Health that when they occur together in the same person they do lead to an outcome but if you had

that genetic change with and you were not exposed to that social determinive health you would not have that outcome

so um yeah fundamentally I would say I don't know the particular case but I

would just be very skeptical about any attribution of a cause to a gene because

um every Gene only has an effect within an environment and that's how biology works

yes

perfect question I should have just planted that question um so the question was

um it sounds like I'm saying we should just get rid of race and use other kinds of things what were you suggesting we

would use instead yeah like maybe we should use just uh

genetic ancestry like maybe when people walk in our Clinic we should just test their ancestry and that'll tell us a lot

more yeah so um I do think we should stop using race

in the way that we do in our in our in the practice of medicine um the risk I I'm I know you know this

Nick but the uh the risk if we sort of like pretend like race doesn't exist is

that we will see social determinants of health and the way they affect people and we will ignore the fact that those

social determinants of Health are just mechanisms through which systemic racism operates right so we'll see oh this

poverty thing is really horrible it's causing high blood pressure and high cholesterol and will completely miss the

fact that that is not distributed um like equally in our population right

um and you could do the same thing with a thousand other social determinants of Health so I really don't think we should

eliminate the use of race in our science we need race so that we can see how systemic racism affects the world

I do think when a patient walks in the door we should ignore race we should ignore

the way that ancestry we assume ancestry functions and if we think a person might

has a lung condition and there's a possibility that could be cystic fibrosis we should just check for Cystic

Fibrosis we should just order a genetic test and look because yeah I mean as I kind of

probably drove you crazy saying over and over again if we make assumptions that this person might or might not have a

cystic fibrosis variant then we're going to get it wrong very frequently

um and I honestly don't mean we should truly ignore a race because of course

um the our patients interact with the world they're perceived through their race and so therefore all sorts of

things that they need to be successful with their health are going to be affected by the race so of course we're going to think about it as a mechanism

in Social determinants of health and what our patients need but we're not going to use it to make assumptions

about fundamental biology and how people are different

yes

yes

pretty good

yeah okay so uh the question was uh we

used to have uh you know a 45 year old white male start of our note

um we many doctors stopped doing that unfortunately many have not soft but many have stopped doing that and maybe

it now goes in our exam where we say like this is a black male or something maybe we're even more circumspect and

say something like with dark skin tone or you know um but then many are arguing we should

just completely remove it but then the question remains how do we think about

the social determinants of health and the way that those correspond to race in our practice and does that end up in the

note so I have two pieces one I just want to say something that's relatively obvious

which is when we put race in our notes 45 year old white male we typically

either looked in the medical record to see what was documented or we just made a guess right person came in they look

black to me you know okay blackmail so if we are going to use race in some way

uh we should do it rigorously and therefore we should ask how do you identify yourself

um the best possible way is asking an open-ended like that if you're going to ask us like a multiple choice question there has to be some pretty robust

options um which is a whole mess in itself okay so then the other issue

um should we even have it there at all since we do want to think about um social determinants of Health

um I think the big risk is that we tend to say race but then we don't

um clarify why we're using or what we mean by that and we often will use

euphemisms or or will completely ignore and not use

the words like racism and I think if we are going to talk about race in our notes or in other

settings we should frame it explicitly explain I you know because I'm concerned about

the effects of systemic racism in this case so yeah I guess in a one-liner don't

talk about race talk about racism because then you're not creating this sort of world where racism doesn't exist

you're reminding everybody racism does exist yes

yes

yes yeah okay I'm gonna summarize that uh

and it's brilliant so the comments from a dermatologist for the online audience

about uh the uh role that melanocytes play in the tone of the skin and how

that is uh very limited to just the melanocytes and doesn't affect the whole

rest of the skin structure which I completely agree with and I think you're exactly right

um one thing to remember just a comment is um you're aware of what is called the

one drop rule right so this is a rule of thumb that

Americans have used for all maybe more than two or two centuries to say this person is black this person

is white okay and in general a person who is perceived to have any darker skin

tone is assigned the black category and people with lighter skin tones are assigned the white category right when

you look at the genetics of white people and black people in the U.S it is really not uh when you look at the big picture

of that they just look like a big Clump that makes a lie okay

if you sort of break them apart so you can see who self-identifies as white and

who self-identifies as black there's this an end of that kind of line that

kind of Clump where all the um people who identify as white are who have European ancestry and then there's

this sort of like spectrum of people who self-identify as black who have a admixture of European African other

kinds of ancestry but we can only see that separation because we already know the one drop rule it lives in our brain

right with and doesn't pay rent right so um but if you just look at the genetics

this is just a clump right and skin tone is a perfect example of that it is

not only something people use to assign race um it is the mechanisms you're

talking about are a spectrum they are not dichotomous right so um

it I I mean it is very helpful to understand like the way in which we use

sort of phenotype in this case skin tone in the way that we assign race but also

remember that that causes us to see people as sort of separating out into

two groups but if you were just to use a uh you know a photo of the skin tone or

if you would use the genetics you wouldn't be able to see a difference there you would just see a spectrum

perfect comment thank you yeah

yes

yes but just

what's up

yeah um I don't know if you all know Colin and I are academic siblings so

everything he says I'm like this guy's a genius um so

um I'm going to uh summarize uh so first you commented

uh what I think is completely right that there are many ethics consults where

um the interpersonal racism or perceptions of interpersonal racism and

in some cases act you know more systemic forms of racism are the key issue and we

ignore them because we leave out the race or we sort of like hide it and I completely agree with you I think uh we

should be super forthright about what maybe what explicitly happened and also

our interpretation as a person who lives within the society about what's happening so I I think it's totally okay

to say this family was black and I think perceptions of interpersonal racism played a role here I think we should

just be super explicit and use that those terms the other comment which is also brilliant is

um we have large data sets we use all different kinds of analytical techniques

and we end up we see that there are certain genetic variants or biomarkers as you said that are more common uh or

that are associated with outcomes like IQ tests or educational attainment or

other kinds of things and then we can sort of attribute those by biomarkers to populations and we start to think like

oh these are kind of like baked in things to these populations fundamentally because they're not we

can't interpret causation from this data in that way all we can say is these things are associated with each other

and because the biomarker is so bio we assume that this is like the bio

couldn't could not have been caused by interpersonal racism so this must be

baked in and therefore it leads to this outcome but in fact it is almost always

the other way but we can never see it that way this is fundamentally the same issue Peter was talking about earlier

with April L1 right there's Gene by environment interactions and we think of

genetics as immutable um so any differences or you know or

changes are going to be attributed to the environment because the genes are always the same you know and that's sort

of determinative something could not have caused the genes it must be the genes causing everything else

um yeah but I completely agree that that error is made over and over and over

again every day in science where we assume biological causes and sort of you

know medical or environmental uh uh results effects but in fact there's so

much going on there um you know there are articles all the time uh sometimes the science itself

frames it this way but sometimes it's just the um uh the news interpretation of the

science it basically says um you know risk for depression is

hardwired into our brains because we can find the biological

structural correlates of some trait uh on an MRI and and therefore we say it's

hardwired like it must have been that this thing caused this thing instead of

yeah of of course uh conditions that have to do with effects on the brain can

be picked up by things looking at the brain why do you think the brain has a difference there right so um but we

can't ever infer causation there so we just assume like oh this must be kind of baked in because the brain is the brain

you know so yeah completely agree

yes Tom

um

yeah which is the question I think so uh I'm gonna say this for people online and

feel free people online to enter your thoughts on the chat um question is why does this continue if

it's so um you know the science is so clear that uh the differences in individual

patients that we attribute to race are not caused by genetics they're caused by social determinants of Health why do we

keep making that mistake over and over again so I I don't have an answer to that I'd

love to hear what you all think and people online feel free to jump in with some thoughts um I

so uh I joked about it but you noticed it took me more than half of my talk to

get to the point where we could talk about why ancestry doesn't mean people are really fundamentally different right

um I don't think that that concept is super straightforward so we sort of

get sensitized to these multiple reminders about how different people from different races are so different

from one another which we attribute to sort of fundamental things right biology

and the explanation about why that's false really takes some time to dig into

right you it takes some deconstructing work and I think that is one mechanism it's

it's sort of like uh vaccine hesitancy right um it's easy to say why you should not

get a vaccine it's hard to explain why you should get a vaccine you know like oh uh We've had the MMR vaccine

for decades and we people are still getting measles so why should I get it right and it's like well let's look at

the rates of measles over time you know um it's like really impossible to

explain that um and uh I'm sorry I know your philosopher but for the most part people

don't think that way anyway right they're they don't think rationally they're kind of like just exposed to

these you know Shadows on the wall and we just sort of like interpret what we're how we're going to interpret it

so yeah and uh I I say this all the time and uh like there are things baked in

here right like we I grew up a Protestant I don't really practice religion anymore but Protestant lit a

Protestantism lives here and I will never not have Protestantism living up there right I was brought up

in a highly segregated race-based society and race still lives here and I

can give this talk a thousand times and I'll still see race and it'll be hard for me to unbake that right so I just

think it takes work

yeah that's yeah I think that's super interesting

the comment was basically uh there's work going on here funded by the NSF to

um teach high schoolers instead of teaching the mendelian genetics to teach them sort of genomics modern genomics

about uh multi uh Factor genetics and uh

that it really has a strong effect on genetic essentialism which I think is totally awesome and

I think NSF should fund you more that's all I know but I'm still going to say it

yeah

yeah so the question is about um yeah there is a an assumption

there genes are kind of what they are they're always the same throughout our life but in fact there's all these other

biological mechanisms that we're well aware of that um through stress and other factors that

create changes in gene expression that um yeah I mean and there's epigenetics

which we don't understand super well yet but it sure seems that some of these

changes could be heritable for some period of time even if they're not

actually in the gene sequence but they're actually just in the expression of genes um yeah I I think

that might be one of the most important areas of science today that it needs so

much more work because um there is very clear evidence that

sort of the epidemiological level that there is very strong heritability in

many of these effects of social determinants of Health right a mom who is stressed has babies who have certain

kinds of effects and often we don't know what the mechanism was we just know it happened right same thing with health disparities

we know the disparities happen we just often don't study the mechanisms so

I I think that could be shared environment it could be you know it could be that stressed moms are exposed

to stressful environments the baby is also exposed to a stressful environment so maybe that's what's happening could

could there be things that are more ingrained that that sort of stick with people

um I one of the so this is my dream is that if we could better understand these

mechanisms by which things are inherited then we could convince everybody who

thinks we just pull ourselves up by our bootstraps and it's just about our own personal responsibility that

um no we don't all start at the same place we don't all have the same likelihood of being able to achieve

certain kinds of outcomes and it's not just that you know one person's

parents have more money in the bank than the other person's parents there's all these other ways in which uh you know

benefit and success or whatever the outcome is not is not merely a matter

of personal responsibility it's all this other stuff again it goes back to the stuff that's

even if we understand it explaining it to people is super hard

but I think it's worth doing yeah thank you