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What Does My DNA Have to Say About My Identity?

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**EXPLORER
CAFÉ**

APRIL 3

What Does My DNA Have To Say About My Identity?

Jason Diaz, Integrated Science, Business, and Technology

STORIES FROM OUR MEMBERS



“So I traded in my lederhosen for a kilt.”

Growing up, Kyle’s family was German, no doubt about it. He even grew up wearing lederhosen in a German dance troupe. But when Kyle began building his family tree, he couldn’t actually find any German ancestors.

“So I decided to have my DNA tested, and the big surprise was we're not German at all,” he says. And soon enough, Ancestry Hints led him to generations of Scottish ancestors.

What surprises are hiding in your family tree?

[Start with AncestryDNA](#)





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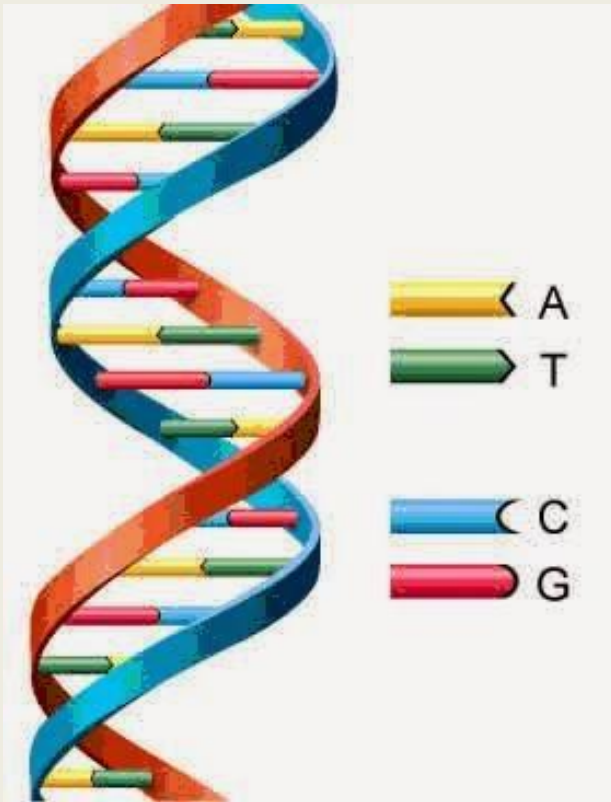
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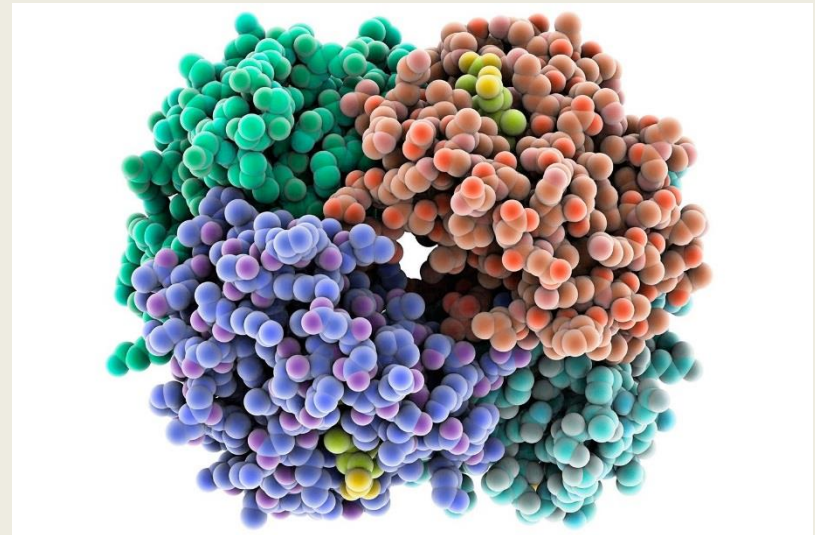
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How does DNA Ancestry
analysis work?



DNA stores genetic information. It is written with four chemical “letters” – A T C G

AGTCACTGATACATCATGATCTAG





Individuals

1	AGTCACTGA <u>A</u> ACATCATGATCTAG
2	AGTCACTGA <u>A</u> ACATCATGATCTAG
3	AGTCACTGAT <u>T</u> ACATCATGATCTAG
4	AGTCACTGAT <u>T</u> ACATCATGATCTAG
5	AGTCACTGAT <u>T</u> ACATCATGATCTAG
6	AGTCACTGA <u>A</u> ACATCATGATCTAG
7	AGTCACTGAT <u>T</u> ACATCATGATCTAG
8	AGTCACTGAT <u>T</u> ACATCATGATCTAG
9	AGTCACTGA <u>A</u> ACATCATGATCTAG
10	AGTCACTGAT <u>T</u> ACATCATGATCTAG
11	AGTCACTGAT <u>T</u> ACATCATGATCTAG
12	AGTCACTGAT <u>T</u> ACATCATGATCTAG
13	AGTCACTGA <u>A</u> ACATCATGATCTAG
14	AGTCACTGAT <u>T</u> ACATCATGATCTAG
15	AGTCACTGAT <u>T</u> ACATCATGATCTAG
16	AGTCACTGAT <u>T</u> ACATCATGATCTAG
17	AGTCACTGA <u>A</u> ACATCATGATCTAG
18	AGTCACTGAT <u>T</u> ACATCATGATCTAG
19	AGTCACTGAT <u>T</u> ACATCATGATCTAG
20	AGTCACTGA <u>A</u> ACATCATGATCTAG

Gene X

Reference Populations

South Asia

West Africa

Now you take the test and we ask...do you have an **A** or a **T** at this position?

Combine this with thousands of similar analyses...

Ancestry.com

48%	Italy/Greece
39%	Ireland
7%	European Jewish
1%	Iberian Peninsula
5%	Other Regions

23andMe

11%	Italian
29.5%	British and Irish
1.5%	French and German
17.7%	Northwestern Europe
28.6%	Southern European
0.2 %	North African

One person –
two different
results!

How should we think about
our genetic heritage?

Elizabeth Warren: American Indian?



Warren Apologizes To Cherokee Nation For DNA Test

February 1, 2019 · 6:36 PM ET



ASMA KHALID



Native American Tribal Membership

- Rules vary from tribe to tribe
- Most require documentation of familial connection to the tribe
- Many also require documented affiliation with the tribe
- No tribe allows DNA Ancestry testing as evidence
- Some tribes use a **blood quantum** measurement

BLOOD QUANTUM

○ NON-INDIAN

● FULL BLOOD

◐ $\frac{7}{8}$

◑ $\frac{3}{4}$

◒ $\frac{1}{2}$

◓ $\frac{5}{8}$

◔ $\frac{1}{4}$

●—● MARRIED

↓
CHILDREN

●—○
↓
○—◐ HALF BREED

↓
◐ CHILD
GONE!

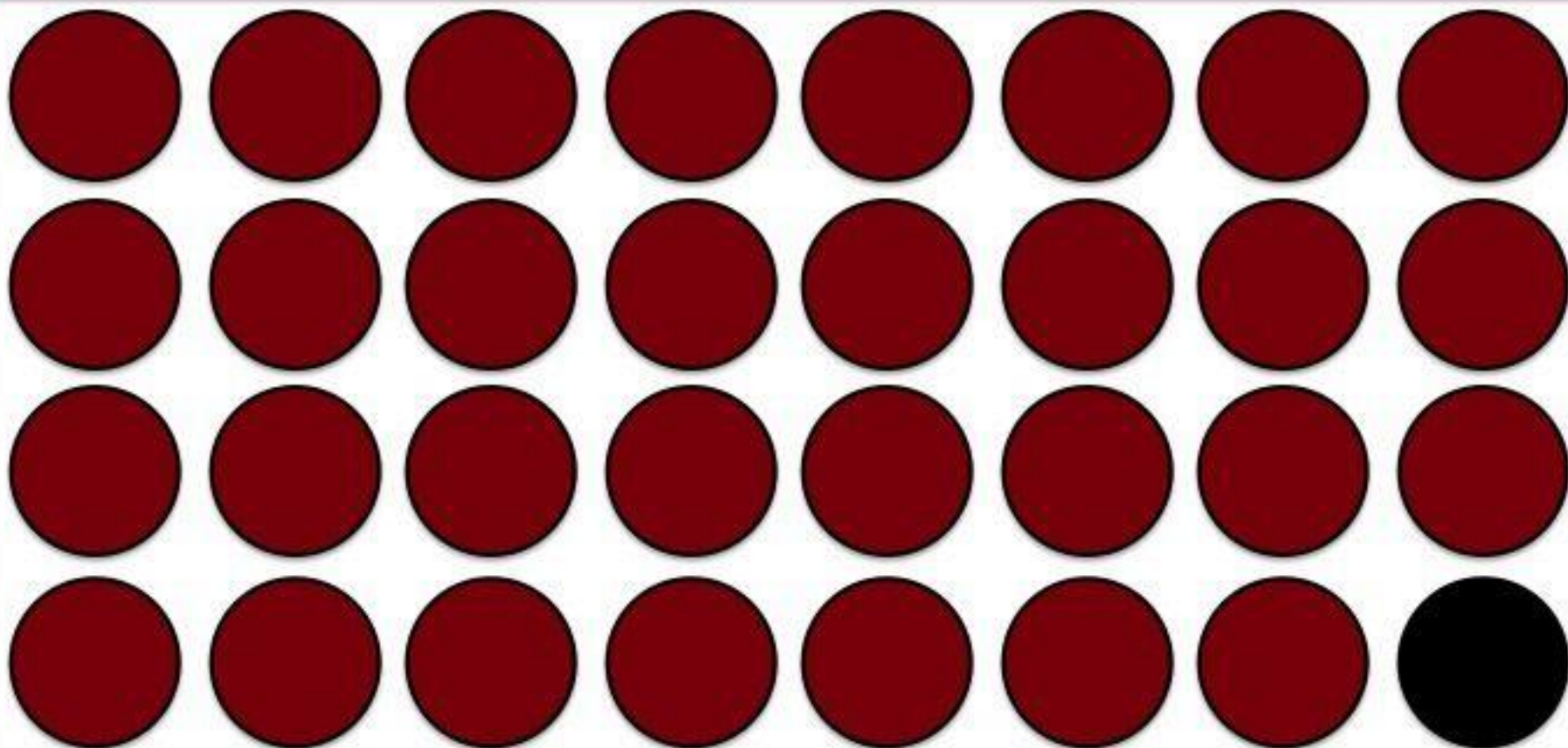
●—● $\frac{3}{4}$
↓
◐ $\frac{7}{8}$



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MARTY
Two Bulls
m2bulls.com

Hey wait a minute, we're disappearing!

One-Drop Rule



Refers to how U.S. courts and law books historically declared that a mixed race person with one black ancestor or one drop of black blood should be categorized as black. If any person has $1/32$ black blood in their system they are considered African-American.

Can you name any other ethnic communities that try to maintain genetic/blood “purity”?

How would you define eligibility for membership in your ethnic community?

Would you require evidence of familial connection?

Blood ties? How would this be measured?

What about adoptions and other “non-biological” inclusions?

DNA Testing, Race and an Admissions Lawsuit

Federal judge allows to proceed a suit in which white student says an admissions officer told her she might improve her odds of getting into medical school by discovering Native American or African American lineage.

By [Scott Jaschik](#) // January 28, 2019



BLACK AND JEWISH

Why My 16-Year-Old Son Took a DNA Test to Prove He's Black

BY ALINA ADAMS

Is he black?



Slavery erased much of the history of the enslaved people forcibly brought to America.

Descendants of these enslaved people deserve to know their history.

How should we incorporate our genetic history into our sense of identity?

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And now...a little perspective.

What percentage of DNA is the same between these two movie stars?



99.5% Identical

Genetics, Anthropology, and Archeology Support a History of Migration Out of Africa



Some Facts to Keep in Mind

- The Human Genome is ~3 Billion letters long
- There are ~21,000 protein-coding genes
- These genes make up ~2% of the whole genome
- Even if **1,000** genes governed the physical features we see (and judge) every day, that would account for...
- **...0.1% of your genome**

My Thoughts...

- Communities are social constructs
- Communities are often built on biological realities
- **No single fact will give you a ticket into or out of a community**
- Community membership is ultimately a **conversation** between members

Your DNA ancestry is...

...at best...

...a conversation starter.

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