I want to show you a little video of why this matters.

So weak forces-- now, weak forces are really strong.

We know this because of "Mission: Impossible".

We know this also because of our own students.

There was one of my former students, Rory, and he won all sorts of prizes, because he was trying to be like a gecko.

And so he made gloves that were like gecko gloves, and much to the delight of the facilities people at MIT, he actually climbed one of the buildings using his gloves.

In case you are wondering, it wasn't actually their delight.

But really cool stuff.

So let me show you.

This is like a 30-second video.

He found the answer in the sheer number and design of the hairs on the geckos feet.

Geckos have millions of microscopic hairs on their toes.

And of course, we can't see this with our naked eye, because each hair is only 1/10 the size of a human hair.

And each of those hairs branch down to billions of little split ends.

And they can make such close contact with the surface that weak intermolecular forces can begin to add up to something really strong.

Turns out geckos exploit something called the Van der Waals force.

No.

London, London.

If you think of an atom as a dancing couple, when you bring two atoms into very close contact, part of one atom can get attracted to part of the other.

That very weak bond is the Van der Waals force, and it sticks atoms together.

Proximity is the key.

But bringing two materials that near each other is harder than you'd think.

All right.

Now, obviously, that got me very excited when I saw that, because that is how I see atoms, and that is how I see electrons.

And I saw this, and I almost fell over.

And of course, I played it, and I know all those moves.

I would suggest you guys-- it's a Friday.

There's some good moves in there.

There's some good moves in there.

And you can take this on your phone and just kind of work it out at the club.