10/31

metaphor 「영어 글쓰기」

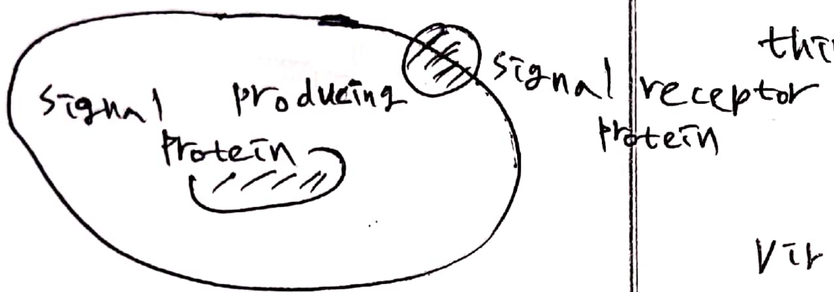
① simile 「직유」

↳ 99 % = (사람) 박테리아.

firefly = 반딧불이

how many neighborhoods

predator - 포식자.



talk to each other

chemical language.

private, secret conversation.

↳ siblings = 형제자매.

molecular bacteria

multi-lingual bacteria

「intra-species」 — 「interspecies」

문어들의 대화 법

antibiotics.

↳ kill 박테리아

anti - quorum

~ is like ~ '

↳ secretes molecules

think of $\boxed{\text{like}}$ a ___

Virulence = 독성.

GEDU 501: Science Writing

POSLEC

Understanding using Science Metaphors

metaphors
X.

Underline or highlight the metaphors. Use the transcript below with the video to find at least 2 example metaphors. Use the space on the bottom right to try to think of 2 metaphors from your field.

First we figured out how this bacterium does this, but then we brought the tools of molecular biology to this to figure out really what's the mechanism. And what we found -- so this is now supposed to be, again, my bacterial cell -- is that Vibrio fischeri has a protein -- that's the red box -- it's an enzyme that makes that little hormone molecule, the red triangle. And then as the cells grow, they're all releasing that molecule into the environment, so there's lots of molecules there. And the bacteria also have a receptor on their cell surface that fits like a lock and key with that molecule. These are just like the receptors on the surfaces of your cells. When the molecule increases to a certain amount -- which says something about the number of cells -- it locks down into that receptor and information comes into the cells that tells the cells to turn on this collective behavior of making light.

Why this is interesting is because in the past decade we have found that this s not just some anomaly of this ridiculous, glow-in-the-dark bacterium that ves in the ocean -- all bacteria have systems like this. So now what we nderstand is that all bacteria can talk to each other. They make chemical ords, they recognize those words, and they turn on group behaviors that are lly successful when all of the cells participate in unison. We have a fancy ame for this: we call it quorum sensing. They vote with these chemical votes, e vote gets counted, and then everybody responds to the vote.

What's important for today's talk is that we know that there are hundreds of behaviors that bacteria carry out in these collective fashions. But the one that's probably the most important to you is virulence. It's not like a couple bacteria get in you and they start secreting some toxins -- you're enormous, that would have no effect on you. You're huge. What they do, we now understand, is they get in you, they wait, they start growing, they count themselves with these little molecules, and they recognize when they have the right cell number that if all of the bacteria launch their virulence attack together, they are going to be successful at overcoming an enormous host. Bacteria always control pathogenicity with quorum sensing. That's how it works.

We also then went to look at what are these molecules -- these were the red triangles on my slides before. This is the Vibrio fischeri molecule. This is the word that it talks in. So then we started to look at other bacteria, and these are just a smattering of the molecules that we've discovered. What I hope you can see is that the molecules are related. The left-hand part of the molecule is identical in every single species of bacteria. But the right-hand part of the molecule is a little bit different in every single species. What that does is to confer exquisite species specificities to these languages. Each molecule fits into its partner receptor and no other. So these are private, secret conversations. These conversations are for intraspecies communication. Each bacteria uses a particular molecule that's its language that allows it to count its own sibling. → 박테리아는 X
형제 "hey bro"

Using the space below, write down 1 long or 2 short metaphors from your field of study: X.

E.g. in a neuromorphic circuit, electronic devices work like the neurons in your brain to receive information. Then memristors behave like synapses and receive info from these 'neurons' and transmit them to different 'neurons'

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next class

GEDU 501: Science Writing

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POSLEC

sing Science Metaphors

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next class

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