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center for microbial oceanography:
research and education

cmore.soest.hawaii.edu

You are…

Halobacterium salinariumus!

You salty dog! You are *Halobacterium salinariumus!*

Like you, this microbe is a bit messy. Its cell contents aren't neatly organized, in much the same way that your socks never manage to find their way into a drawer!

Just as you prefer the salty ocean to a freshwater lake, *H. salinariumus* is a halophile (an organism that thrives in super salty environments).

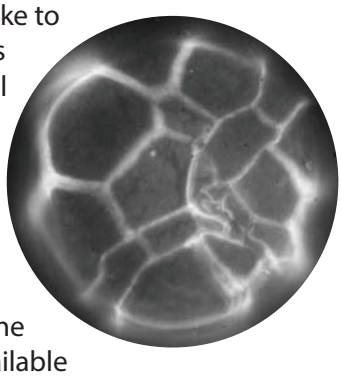
In fact, this microbe can be found in the Dead Sea, which is 5 to 10 times saltier than the ocean!

Photo credit: science.nasa.gov.

You are…

Fragilidium subglobosum!

Lucky you! You are *Fragilidium subglobosum!*



The same way that you like to keep your space tidy, this microbe organizes its cell contents into organelles, such as a nucleus.

Like you, *F. subglobosum* also goes to bed early because most of its work is done during the day, when sunlight is available to perform photosynthesis. You also share with this microbe the ability to make the best of any situation; *F. subglobosum* can either make its own food through photosynthesis or feed on other organisms, depending on the conditions.

Photo credit: Alf Skovgaard, University of Copenhagen.

You are…

Emiliania huxleyi!

Hooray! You are *Emiliania huxleyi!*

This attractive microbe is called a coccolithophore, and it protects itself with chalk-like plates. Like you, *E. huxleyi* also goes to bed early because it works during the day, when sunlight is available to perform photosynthesis. Just as you like to keep your space tidy, this organism organizes its cell contents into organelles, for example, by neatly wrapping up its DNA in a nucleus.

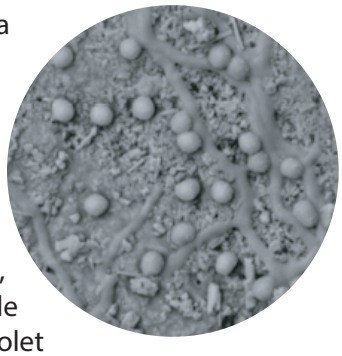
However, just as you are a bit inflexible and like things to be a certain way, *E. huxleyi* only has one way of making food (photosynthesis). Under just the right conditions, it can form algal blooms in which it can outnumber all of the other marine species in the area combined!

Photo credit: Jeremy R. Young, Natural History Museum of London.

You are…

Salinispora tropica!

That's incredible! You are *Salinispora tropica!*



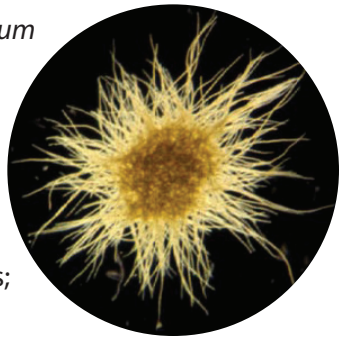
You and *S. tropica* share a taste for "eating out" — this microbe feeds on live bacterial cells and organic debris instead of making its own food. Similar to your fondness for the color purple, this microbe stains purple when rinsed in crystal violet dye which is used to study a microbe cell wall structure.

Also, *S. tropica* is just as unlikely as you are to "hold its breath" for very long because it requires oxygen to survive. Soon after its discovery in 1991, it was found that this amazing microbe produces important anticancer compounds!

Photo credit: Eric Gontang, Scripps Institution of Oceanography, SIO.

You are…

Trichodesmium erythraeum!

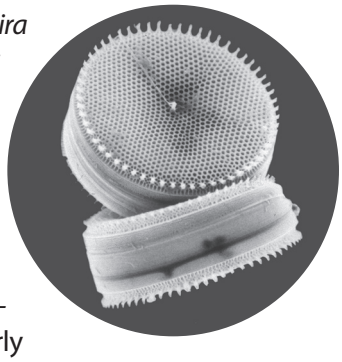


Yipee! You are *Trichodesmium erythraeum,* a.k.a. "*Tricho*"! Both you and this microbe tend to be somewhat messy (its cell contents aren't well-organized), and you both enjoy spending time with friends; *Tricho* forms colonies with other individual cells. Just as you like eating home-cooked meals, *Tricho* uses photosynthesis to make its own food. Under just the right conditions, cells can grow so rapidly that a bloom is formed that can be seen from space!

Photo credit: starcentral.mbl.edu/microscope/portal.php.

You are…

Thalassiosira weissflogii!



Sweet! You are *Thalassiosira weissflogii!* Similar to how you like to keep your space tidy, this organism organizes its cell contents into organelles, for example by neatly wrapping up its DNA in a nucleus. Like you, *T. weissflogii* also goes to bed early because it works during the day, when sunlight is available to perform photosynthesis. *T. weissflogii* is a type of diatom and it protects itself with tough cell walls. Just as you need to wear glasses, diatoms build these cell walls with silica, which is the main component of glass.

Photo credit: F. Hinz, Alfred-Weneger Institute, Germany.

You are…

Synechococcus!

Fantastic! You are *Synechococcus!* You like to hang out on your own, and this solitary microbe is no different. Like you, this microbe prefers staying on the "upper bunk" of the ocean, where it can absorb more sunlight to effectively photosynthesize. And photosynthesize, it does! This microbe cranks out about 25% of the primary production in the ocean.

Just as you like all sorts of weather, *Synechococcus* can withstand colder temperatures and has a wider distribution than its relatives.

Photo credit: Dr. R. Wagner, www.dr-ralf-wagner.de.

You are…

Prochlorococcus marinus!

Right on! You are *Prochlorococcus marinus!*

Like you, *P. marinus* prefers making its own food. In fact, this microbe is so good at photosynthesis that it is responsible for 30–80% of primary production in nutrient-poor regions of the ocean!

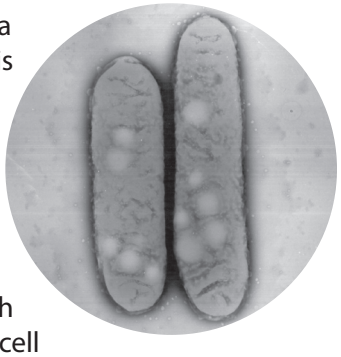
You like to hang out on your own, and this solitary microbe is no different. Furthermore, just as you are sensitive to cold temperatures, *Prochlorococcus* prefers to live in warmer waters compared to some of its relatives.

Photo credit: Claire Ting.

You are…

Ruegeria pomeroyi!

Congratulations! You are *Ruegeria pomeroyi!*



You and *R. pomeroyi* share a taste for "eating out" — this microbe feeds on live bacterial cells and organic debris instea d of making its own food. Just as you don't like the color purple, this microbe does not retain crystal violet dye which is used to study a microbe cell wall structure.

Also, *R. pomeroyi* is just as unlikely as you are to "hold its breath" for very long because it requires oxygen to survive. *R. pomeroyi* also has the unusual ability to form dimethyl sulfide gas, which is important in cloud formation!

Photo credit: Gonzalez et al. 2003 *Int. J. Syst. Evol. Microbiol.* 53: 1261-1269.

You are…

Rhodoferax ferrireducens!

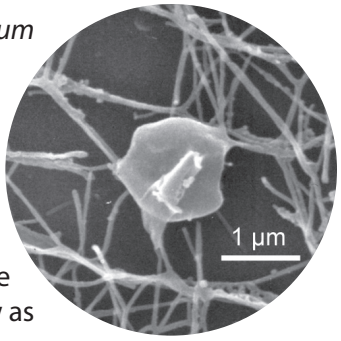
Yahoo! You are *Rhodoferax ferrireducens!* Similar to you, this microbe is bit disorganized. Its cell contents aren't neatly organized, in much the same way that your socks never manage to find their way into a drawer! *R. ferrireducens* takes your ability to hold your breath one step further — it actually lives without oxygen!

You also both share a taste for "eating out" — this microbe feeds on organic material in marine sediments. What's amazing is that when *R. ferrireducens* breaks down these organic molecules, energy is released that can be harnessed to make electricity to heat our homes and power our light bulbs! So, this powerful little organism could potentially create an environmentally friendly form of electricity.

Photo credit: Derek Lovley, University of Massachusetts.

You are…

Pyrodictium abyssi!



Very cool! *You are Pyrodictium abyssi!* Like you, this microbe likes to lay low and is found on the "bottom bunk" of the ocean, near the sea floor. Your taste for lemonade is reflected in this microbe's preference for acidic conditions as low as pH 4.7.

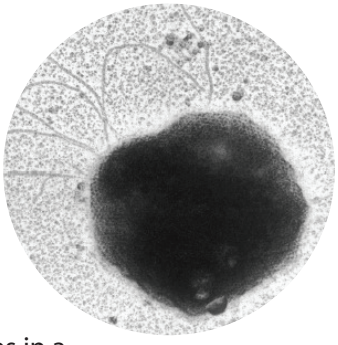
And just as your extended family lives in a variety of different places, this microbe belongs to a family that occupies a broad range of habitats. *P. abyssi* can tolerate temperatures up to 140° C (284° F), and is often found in deep sea hydrothermal vents!

Photo credit: Gertraud Rieger, Karl O. Stetter, Reinhard Ravel, University of Regensburg, René Hermann, Zuerich, Switzerland.

You are…

Hyperthermus butylicus!

How exciting! You are *Hyperthermus butylicus!*

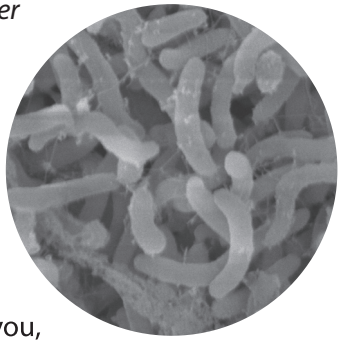


The same way that you inhabit a messy room, *H. butylicus* doesn't organize its cell contents. Like you, this microbe likes to lay low and is found on the "bottom bunk" of the ocean, near the sea floor. And just as your extended family lives in a variety of different places, this microbe belongs to a family that occupies a broad range of habitats. *H. butylicus* thrives in waters of up to 112° C (234° F) and was discovered on the coast of the island of São Miguel, Azores!

Photo credit: Zillig et al. (1990) *J. of Bacteriology* 172(7): 3959-3965.

You are…

Pelagibacter ubique!



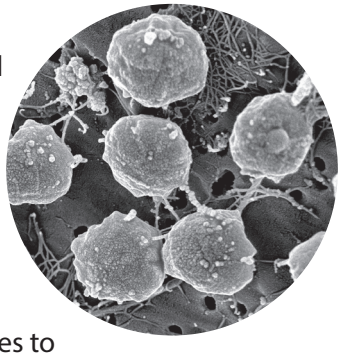
Oh la la! You are *Pelagibacter ubique,* whose nickname is SAR-11! SAR-11 has a banana shape and is tiny, even for a microbe, but it is the most abundant organism in the ocean and its combined weight exceeds that of all the marine fish in the world! Like you, this microbe is a bit disorganized. Its cell contents aren't neatly packaged into organelles, in much the same way that your socks never manage to find their way into a drawer! But, you can both brag about packing lightly — SAR-11 boasts having the smallest genome of any free-living organism! Also, this microbe is just as unlikely as you are to "hold its breath" for very long because it requires oxygen to survive.

Photo credit: Kehau Manoi, C-MORE University of Hawaii. Under guidance of Megan Huggett and Michael Rappé.

You are…

Methanococcus jannischii!

Wow! You are *Methanococcus jannischii!*



Similar to you, this microbe is bit messy. Its cell contents aren't neatly organized, in much the same way that your socks never manage to find their way into a drawer!

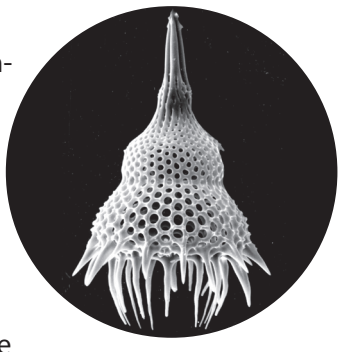
Like you, this microbe likes to lay low and is found on the "bottom bunk" of the ocean, near the sea floor. In fact, the individual in the image was sampled from a hydrothermal vent at a depth of 2,600 m (8,500 ft)!

Photo credit: courtesy of B. Boonyaratanakornkit and D.S. Clark, Chemical Engineering, and G. Vrdoljak, Electron Microscope Laboratory, University of California, Berkeley.

You are…

Lamprocyclas maritalis!

How charming! You are *Lamprocyclas maritalis!*



This attractive microbe is a type of radiolarian that constructs beautiful, complex shells of silica (glass). Like you, *L. maritalis* also stays up late; this microbe actively preys day and night. *L. maritalis* also shares your sense of organization and tidiness. Its cell contents are packaged in organelles; for example, its DNA is neatly contained within a nucleus.

Like your straight hair, this microbe has straight extensions from its shell that help protect it from predators.

Photo credit: Kjell R. Børklund, National History Museum of Norway, University of Oslo.

You are…

Elphidium crispum!

Lucky you! You are *Elphidium crispum!*

This swirly-shelled microbe is a type of foraminifera, or "foram" for short. *E. crispum* shares your sense of organization and tidiness. Its cell contents are packaged in organelles. For example, its DNA is neatly contained within a nucleus. Like you, *E. crispum* also stays up late; this microbe actively preys day and night. Forams construct beautiful shells of calcium carbonate (chalk). The roundabout style of shell that forams make is much like your curly hair. These shells provide fossils that are valued by geologists for estimating the age of rocks and finding oil deposits!

Photo credit: Spike Walker.

You are…

Desulfovibrio desulfuricans!

Nice! You are *Desulfovibrio desulfuricans!*

You both share a taste for "eating out" — *D. desulfuricans* feeds on organic material in marine sediments. This microbe's type of metabolism forms a stinky gas that smells like rotten eggs — does this sound like you when you eat beans?! You also both can hold your breath for a long time, and in fact *D. desulfuricans* lives without oxygen.

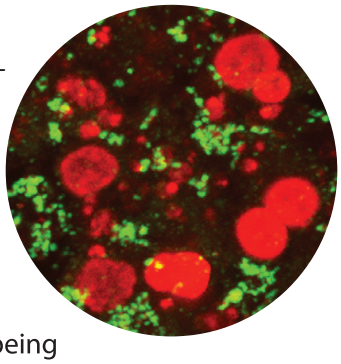
What's more, scientists at the U.S. Dept. of Energy are studying this microbe's amazing ability to convert highly toxic radioactive metals intoa non-toxic form!

Photo credit: Alice Dohnalkova, Pacific Northwest National Laboratory .

You are…

Cenarchaeum symbiosum!

How fun! You are *Cenarchaeum symbiosum!*



The same way you leave your room messy, *C. symbiosum* doesn't organize its cell contents.

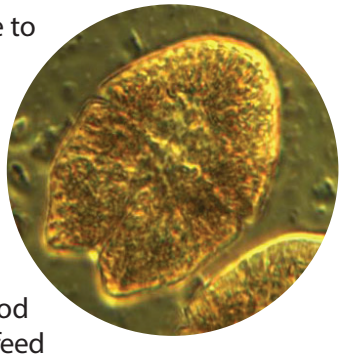
Like you, this microbe likes to lay low and is found on the "bottom bunk" of the ocean, near the sea floor. You enjoy being part of a team and do well in group activities. Similarly, *C. symbiosum* lives symbiotically (in close association) with a marine sponge — their lives are improved by working together.

Photo credit: Christina Preston, Monterey Bay Aquarium Research Institute, MBARI.

You are…

Akashiwo sanguineum!

Oh my! You are *Akashiwo sanguineum!*



The same way that you like to keep your space tidy, this microbe organizes its cell contents into organelles, such as a nucleus. Just as you have the ability to make the best of any situation, *A. sanguineum* can either make its own food through photosynthesis or feed on other organisms — adapting to whatever the conditions call for.

But you also share a streak for being feisty and mischievous; this species packs a bite, forming blooms that can kill shellfish.

Photo credit: Fernanda Mazzillo, Scripps Institution of Oceanography.