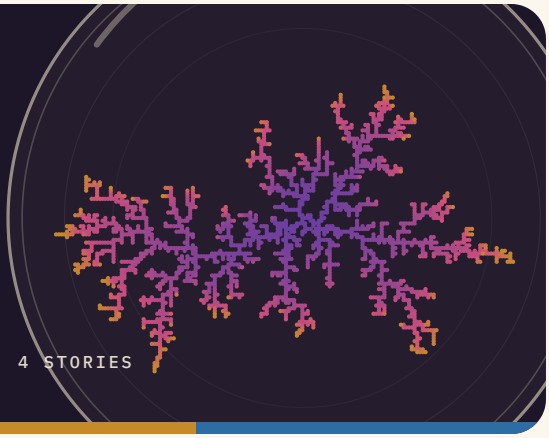
PURSUIT OF ZΩH — THE WEEKLY

This Week in

Microbiology



NO. 007 • 15 NOVEMBER 2026 • NEWS OF 8 NOV – 15 NOV 2026 • 4 STORIES

THIS WEEK

Hantavirus at sea and archaea on a wire

A cruise-ship hantavirus outbreak traced to few spillovers, methane-eating archaea with electric nanowires, an anthrax coat that grows by cracking, and the 13 enzymes a gut microbe needs to eat mucus.

IN THIS ISSUE

01 VIRAL OUTBREAKS
Cruise-ship hantavirus: few spillovers, then spread on board

02 ARCHAEA & METHANE
Methane-eating archaea, grown on electrodes, show their wires

03 BACTERIAL CELL SURFACES
Anthrax bacteria grow their crystal coat through hoop-like cracks

04 GUT MICROBIOME
A gut microbe needs 13 enzymes to take mucus apart

01

VIRAL OUTBREAKS

Cruise-ship hantavirus: few spillovers, then spread on board

In April 2026, Andes virus, a hantavirus that causes a severe lung disease, broke out aboard the cruise ship M/V Hondius.[1] Sharing raw data across countries, an international team obtained viral genomes from 10 of the 13 identified cases.[1] Genomes, symptom onsets and contacts fit one or a very few spillovers from animals before boarding, then person-to-person spread on board.[1] A second team linked the virus to a lineage seen in northern Patagonia from 2018 to 2025, but the first cases' travel timing did not fit the incubation period, so the source is unresolved.[2]

WHY IT MATTERS

The link to a 2018 Argentine outbreak, which may also have involved person-to-person spread, argues for wider surveillance where Andes virus is endemic.[2]

CAVEAT *Andes virus was already known to spread between people under specific conditions, and the ship's virus was not an unusual strain.*[1]

10 of 13

identified outbreak cases for which Andes virus genomes were obtained

SOURCE 1

[1] doi:10.1126/science.aej1376 · [2] doi:10.1126/science.aej1679

ON THE ROAD?

Listen to this issue

6-minute episode, read aloud: the same four stories, written for the ear. Stream it, or download the MP3, from the Microbiology page.

pursuit-of-zoe.com/pages/microbiology#zoh-weekly

02

ARCHAEA & METHANE

Methane-eating archaea, grown on electrodes, show their wires

Anaerobic methanotrophic archaea, or ANME, consume methane where there is no oxygen and help control its emissions, yet none had been grown in pure culture.[3] A Radboud University and Yale team grew a freshwater species on electrodes held at a set potential, reaching 95.8% relative abundance, and proposed the name Candidatus Methanoperedens vercellensis.[3] It doubled in 4.6 days at 30 °C and preferred iron oxides to nitrate.[3] A 3.3 Å cryo-EM structure showed its surface filaments are OmcZ-type cytochrome nanowires, relatives of those Geobacter uses to pass electrons over more than 10 µm.[3]

WHY IT MATTERS

A near-pure culture gives researchers a working model for how archaea move electrons out of the cell along nanowires.[3]

CAVEAT *Unlike the bacterial versions, these archaeal wires do not link into networks and keep their hemes less exposed.*[3]

[3] doi:10.1038/s41467-026-78976-x

95.8%

relative abundance of the archaeon in electrode-grown, near-axenic cultures

SOURCE 3

03

BACTERIAL CELL SURFACES

Anthrax bacteria grow their crystal coat through hoop-like cracks

Bacillus anthracis, the anthrax bacterium, wears an S-layer: a single sheet of protein subunits packed in a near-crystalline lattice and tethered to the cell wall.[4] This rod-shaped cell adds new wall material all along its length, which raises a puzzle: how does a crystal stretch to keep up?[4] Harvard Medical School researchers tagged the S-layer subunits with fluorescent labels and found hoop-like cracks throughout the lattice.[4] Pulse-chase experiments showed new subunits assembling at these cracks in two modes, dispersed and focused.[4]

WHY IT MATTERS

It shows one way a rigid, ordered coat can keep pace with a growing cell.[4]

CAVEAT *That pulling forces from wall growth open the cracks is what the authors say their data suggest, not a measured force.*[4]

[4] doi:10.1038/s41564-026-02544-8

MECHANISM

Cell wall grows along the cylinder

↓

Pulling forces open hoop-like cracks

↓

Subunits fill cracks, dispersed or focused

↓

Lattice expands with the cell

04

GUT MICROBIOME

A gut microbe needs 13 enzymes to take mucus apart

Mucins, the main ingredient of the mucus that shields the gut lining, are decorated with more than 100 different sugar chains called O-glycans.[5] Some gut bacteria break mucins down, which can weaken that barrier and feed inflammation.[5] Working with the common gut symbiont Bacteroides thetaiotaomicron, the researchers found more than 100 genes expressed during growth on various O-glycans.[5] Characterizing 33 of its glycoside hydrolase enzymes mapped the breakdown pathway and identified 13 that together suffice to degrade mucin.[5]

WHY IT MATTERS

In competition experiments in living hosts, enzymes that trim mucin's capping sugars proved central to colonizing the gut, making them candidate targets for blocking mucin breakdown.[5]

CAVEAT *The study maps enzymes and gut colonization; it does not test effects on inflammation or disease.*[5]

[5] doi:10.1016/j.chom.2026.10.008

13

B. thetaiotaomicron enzymes that together are sufficient for colonic mucin degradation

SOURCE 5

WORDS THIS WEEK

Hantavirus
A family of viruses carried mainly by rodents. Andes virus, found in South America, can also pass between people under specific conditions.

S-layer
A coat made of one layer of identical protein subunits arranged in a regular, crystal-like lattice on the surface of many archaea and some bacteria.

Spillover
The jump of a pathogen from an animal host into people. Genomes help tell one spillover followed by human spread from many separate jumps.

Glycoside hydrolase
An enzyme that cuts the bonds linking sugars together. Gut microbes carry many kinds to break down complex carbohydrates.

Candidatus
A provisional label for a proposed microbial species whose formal description is not yet complete, often because it has no pure culture.

SOURCES

1. PAPER B. B. Oude Munnink et al., “Hantavirus pulmonary syndrome outbreak linked to cruise ship travel in April–May 2026,” Science (12 Nov 2026). doi:10.1126/science.aej1376
2. PAPER C. M. Bellomo et al., “Long-term local circulation of an Andes virus lineage in northern Patagonia is linked to the M/V Hondius outbreak,” Science (12 Nov 2026). doi:10.1126/science.aej1679
3. PAPER M. Wissink et al., “Electrode-associated growth reveals structure of OmcZ-type cytochrome nanowires in anaerobic methanotrophic archaea,” Nature Communications (9 Nov 2026). doi:10.1038/s41467-026-78976-x
4. PAPER C. Zhang et al., “S-layer expansion is mediated by hoop-like cracks in the paracrystalline lattice during Bacillus anthracis growth,” Nature Microbiology (10 Nov 2026). doi:10.1038/s41564-026-02544-8
5. PAPER S. R. Schaus et al., “Degradation of mucin O-glycans by a human gut symbiont requires a complex enzyme repertoire and promotes colonization,” Cell Host & Microbe (online 12 Nov 2026). doi:10.1016/j.chom.2026.10.008

How this is made. Each story comes from the past seven days of journal, agency and society releases and is written fresh for curious minds, with a source for every claim. Superscripts refer to the list above. Spotted an error? Tell us through the contact page; corrections run in the next issue.

Choose what we feature next. Signed-in customers vote every other week at pursuit-of-zoe.com/pages/vote.