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Microbe study nets UMass \$21.8 million

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[This story was published back on Tuesday, October 04, 2005]

AMHERST - Geobacter, the muddy microbe that seems to keep on giving, has landed the University of Massachusetts a new \$21.8 million grant from the federal Department of Energy.

The microbe, discovered in 1987 at the bottom of the Potomac River by UMass microbiologist Derek Lovley, has been found to be a gluttonous eater of heavy metal, making it an exciting potential solution for the cleanup of uranium and other hazardous wastes created by decades of nuclear weapons production by the DOE.

It also sprouts tiny wires that conduct electricity, opening the door to the creation of miniature electronic devices or a new source of electricity from the muck of ocean floors.

Lovley has now brought UMass approximately \$45 million in sponsored research funding, making him one of the university's star researchers, it reports.

Under the new grant, Lovley and his team will continue sequencing the DNA of Geobacter and studying which genes it uses under various conditions. They will run computer simulations to determine the conditions under which the organism consumes heavy metals most efficiently, Lovley said Monday.

For example, simulations might show that Geobacter consumes heavy metals most efficiently when nitrogen is added to a hazardous waste site, pointing the way to more effective cleanups.

'We employ over half of my lab on that contract,' he added, estimating the number of people working on Geobacter at 25. 'We also purchase a lot of material.'

Lovley said he might hire up to five more workers for the new, five-year contract funded by the DOE.

The lab will also subcontract some tasks to six other institutions, including The Institute for Genomic Research in Rockville, Md.; University of Tennessee at Memphis; University of Indiana at Bloomington; University of California at San Diego; Genomatica of San Diego; and the Argonne National Laboratory in Argonne, Ill.

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