

New link could battle greenhouse gas emissions

30 July 2013

The discovery of a new form of microbial life that can consume the potent greenhouse gas methane has earned University of Queensland (UQ) researchers a place in the prestigious journal Nature.

The research and the Nature article are the results of collaboration between UQ's Advanced Water Management Centre (AWMC) and the Australian Centre for Ecogenomics.

The newly discovered microbial process turns methane into carbon dioxide while breathing nitrate instead of oxygen.

Advanced Water Management Centre Deputy Director Professor Zhiguo Yuan, a lead researcher on the project, said the previously unrecognised metabolism formed a new link between the global nitrogen and carbon cycles.

" This finding could potentially play an important role in the regulation of emissions of methane, a strong greenhouse gas, from aquatic environments to atmosphere, and also has great potential to revolutionise biological wastewater treatment," Professor Yuan said.

UQ's research group, led by Professor Yuan and Dr Gene Tyson, has sequenced the genome of this novel micro-organism.

" Given the simultaneous presence of methane and nitrate in many aquatic environments, we believe this micro-organism could consume vast amounts of methane, preventing it from reaching the atmosphere," Dr Tyson said.

Advanced Water Management Centre Director Professor Jurg Keller said publication of the team's research in Nature was recognition of years of research.

" This research benefited from this multi-disciplinary approach and the close collaboration between process engineers and scientists," Professor Keller said.

The research project has been undertaken by a multi-disciplinary team consisting of microbiologists Mr Mohamed Fauzi Haroon (PhD student), Dr Mike Imelfort, Professor Philip Hugenholtz and Dr Gene Tyson, and process engineers Dr Shihu Hu, Ms Ying Shi (PhD student), Prof Jurg Keller and Professor Zhiguo Yuan.

The paper is available [here](#).

Media: Madelene Flanagan (m.flanagan@uq.edu.au or + 61 7 3365 8525)

Share link:

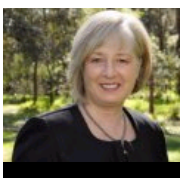
<http://tinyurl.com/n2pr2y2>



Subscribe to the UQ News weekly newsletter



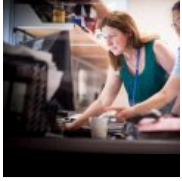
RECENT HEADLINES



[TRI welcomes new CEO](#) ²³
September 2014



Nature's elegant and efficient vision systems can detect cancer 22 September 2014



AIBN to roll out super computer 22 September 2014

UQ's social science strengths recognised 19 September 2014

[More headlines](#)

Three misguided beliefs of the Group of Eight universities 12 September 2014

Soap: a sexy night on the tiles at the Brisbane Festival 15 September 2014

Grand slam: Lally Katz's Doll's House at the Brisbane Festival 16 September 2014

Laser helps find supermassive black hole in a small galaxy 18 September 2014

Dingo control doesn't hurt native wildlife: largest Australian study 18 September 2014

[Read more](#) UQ articles on The Conversation

[Home](#) › [New link could battle greenhouse gas emissions](#)

Brisbane St Lucia, QLD 4072

+61 7 3365 1111

[Other Campuses: UQ Ipswich, UQ Gatton, UQ Herston](#)

[Maps and Directions](#)

© 2014 The University of Queensland

A MEMBER OF



 GROUP OF EIGHT

[Privacy & Terms of use](#) | [Feedback](#)

Authorised by: Director, Office of Marketing and Communications
ABN: 63 942 912 684
CRICOS Provider No: 00025B

QUICK LINKS

-  [For Media](#)
-  [Emergency Contact](#)


SOCIAL MEDIA

NEED HELP?

EMERGENCY

[3365 3333](#)

EXPLORE

-  [Giving to UQ](#)
-  [Faculties & Divisions](#)
-  [UQ Jobs](#)
-  [UQ Contacts](#)
-  [Services & Facilities](#)
-  [Login](#)