

RMRC, Bhubaneswar

(Laxmi Narayan Memorial Library)

Weekly Current Awareness Service

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“The closest you will ever come in this life to an orderly universe is a good library.”

— *Ashleigh Brilliant*

About Monday Morning

Monday morning is a weekly E- CAS (Electronic Current Awareness Service) of RMRC Library, Bhubaneswar which carries one Biomedical & health science news item and some useful current medical research links so that the scientists can access the articles. This E- Bulletin starts its journey from 21st Nov. 2016. In this maiden attempt we cordially invite your inputs and suggestions to improve in future.

Dr. Banamber Sahoo, Lib & Inf. Officer
Poonam Singh Deo & Hemanti Mahali (Lib. Trainee)

Artificial Intelligence used to improve dialysis

TECH FLOW

LONDON: Scientists have used an artificial intelligence (AI) system to design a device that may ultimately improve dialysis for patients by optimising blood flow in veins.

Researchers, including those from Imperial College London in the UK, used computer modelling techniques — normally employed to simulate how unsteady air pockets flow over a plane — to model how unsteady currents in blood flows in the veins of patients undergoing dialysis.

When the kidneys stop work-



ing properly, dialysis can be used to remove waste products and excess fluid from the blood by diverting it to a machine to be cleaned. To connect this machine to the patient a special junction must be formed between an ar-

tery and a vein in the patient's wrist or upper arm. This junction is called an arterio-venous fistulae (AVF).

The study, published in the journal *Physics of Fluids*, used modelling techniques from the

aerospace industry to train a computer, using machine learning algorithms. The AI then went ahead and optimised the shape of an AVF so that the unsteadiness in the blood flow could be suppressed. The prototype device developed to hold the AVF in the optimal shape has so far undergone tests in pigs, which have been successful.

“We routinely use computer simulations to study air flow over aeroplanes. These same techniques, can now be used to optimise medical devices, including AVF,” said Peter Vincent, from Imperial College London.



1. Gut bacteria that 'talk' to human cells may lead to new treatments

Scientists developed a method to genetically engineer gut bacteria to produce molecules that have the potential to treat certain disorders by altering human metabolism. For more details click on the below link

<https://www.sciencedaily.com/releases/2017/08/170830141248.htm>

2. Light-Activated Nanoparticles Help Fight Drug-Resistant Superbugs

Our strongest antibiotics are increasingly defenseless against the nastiest bacterial infections, but the use of new light-activated nanoparticles could give those old drugs a fighting chance. In a paper published today in Science Advances, researchers reported that quantum dots—light-activated semiconductor nanoparticles—when engineered at a particular size can sneak into bacteria, disrupt their cellular processes, and make them more susceptible to antibiotics. For more details click on the below link

<https://spectrum.ieee.org/the-human-os/biomedical/devices/light-activated-nanoparticles-help-fight-drug-resistant-superbugs>

3. Magic mushrooms may 'reset' the brains of depressed patients

Patients taking psilocybin to treat depression show reduced symptoms weeks after treatment following a 'reset' of their brain activity. For more details click on the below link

https://www.eurekalert.org/pub_releases/2017-10/icl-mmm101217.php

4. New study suggests that last common ancestor of humans and apes was smaller than thought

New research suggests that the last common ancestor of apes—including great apes and humans—was much smaller than previously thought, about the size of a gibbon. For more details click on the below link

https://www.eurekalert.org/pub_releases/2017-10/amon-nss101117.php



E- CAS (Current Awareness Service)

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