TU Delft
Process Technology Institute (DPTI)

Proudly presents the

JACOBUS VAN 'T HOFF LECTURE 2017

'Innovation by Evolution: Expanding the Enzyme Universe'

by

Frances Arnold

(California Institute of Technology, Division of Chemistry and Chemical Engineering in Pasadena).

'We can generate whole new enzyme families that catalyze important reactions not (yet) known in nature'

Not satisfied with nature's vast catalytic repertoire, we want to create new enzymes and expand the range of chemical reactions that can be genetically encoded. I will describe how we can use the most powerful biological design process, evolution, to optimize existing enzymes and invent new ones. Mimicking nature's evolutionary tricks and using a little chemical intuition, we can generate whole new enzyme families that catalyze important reactions not (yet) known in nature, thereby adding new capabilities to the chemistry of the biological world and increasing the scope of molecules and materials we can build. I will show that heme proteins can catalyze an array of increasingly challenging carbene- and nitrene-transfer reactions and that these new activities can be enhanced by directed evolution. These experiments illustrate the mechanisms by which new catalysts have been and will continue to be generated by nature's innovation machine, evolution.

Date and venue

Tuesday, 16 May 2017
17.30 - 20.00 h
Aula, TU Delft Auditorium
Mekelweg 5, 2628 CC Delft
We will start with a buffet dinner
The lecture is public and accessible for everyone

Registration

Register at: http://vanthoff2017.eventbrite.nl
The deadline for the registration is April 30, 2017
Registration required

For more information about TU Delft Process Technology Institute see:
www.process.tudelft.nl

TU Delft

Jacobus van 't Hoff Lectures are named after Jacobus Henricus van 't Hoff, the first Nobel Prize winner in chemistry (1901) who obtained a degree of chemical technologist from Delft University of Technology in 1871. These annual lectures delivered by distinguished international speakers aim at a wide chemical and process engineering audience in the Netherlands and abroad.