AUSTRALIAN FRENCH ASSOCIATION FOR SCIENCE AND TECHNOLOGY (VIC) Inc.
Incorporated in Victoria - Registration No. A0039471B ABN 76 767 903 306
GPO Box 903, Melbourne 3001, Australia Email: mail.vic@afas.org.au www.afas.org.au

AFAS Vic 2018 Fellowship Presentation

15th Annual Awards

Friday 2nd of November 2018

Swinburne University
Burwood Road Hawthorn
Advanced Technologies Centre, Room 205

Programme

6:00 pm Arrival & Welcome glass

6:30 pm Introduction & AFAS 2018 overview, Peter Tolé, President, AFAS-Vic

6:45 pm Presentation by Nicholas Welch & Q&A

7:30 pm Presentation of Award Certificate

7:45 pm Finger food & Refreshments

8:30 pm Finish

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AFAS Award goes to

Nicholas Welch - CSIRO

Anti-fibrotic Surface Coatings for Biomedical Devices

Currently, success and viability of vital new implantable medical devices and cell therapies such as the cochlear implants, indwelling medical sensors, and diabetes islet cell treatment is severely hampered by the natural foreign body response (FBR) that results in formation of a fibrotic capsule around the implant.

The anticipated outcomes for Nicholas' study mission are quite specific: 1) improve the current state-of-the-art implantable cell therapy treatment for diabetes by applying our anti-fibrotic coating and thereby extending functional devices lifetime; 2) establish an Australian capability for automated high-throughput discovery of novel biomaterials that mitigate the foreign body response by transferring cell assay procedures from the current labs of best practice.

His study mission aims to apply novel anti-fibrotic surface coatings to the current state-of-the-art cell therapy for addressing diabetes with the plan to extend the implant lifetime, and therefore the therapeutic effect. Here, the Institut Universitaire de Technologie (IUT), Villeurbanne in France has extensive experience in the development of new designer cell lines (Cell 2018) that could hold great promise for fibrosis research.

As a part of his study mission Nicholas will visit the IUT's Département Génie Biologique to discuss the use of existing cell lines or the development of new cell lines that can actively upregulate genes associated with anti-inflammatory and anti-fibrotic activity in the body. Much like the caffeine-stimulated cells developed for treating diabetes, a new class of cells could be developed that would respond to natural wound-healing biomarkers and feedback to the local environment suppression signals to reduce the foreign body response. These cells could then be co-incorporated into new cell therapies to actively resist fibrotic encapsulation of the device.

It is Nicholas' aim that this study mission will provide a new collaboration opportunity between IUT and CSIRO and that this can grow into a long-lasting, mutually beneficial arrangement that permits the development of novel cell lines at IUT and their assessment with CSIRO's high-throughput production and in vitro screening of biomaterials.

The study mission will also provide an opportunity to interact and collaborate with the broader Europe; in Switzerland (2wks), Germany (2wks), France (2wks), Greece (4days).