



# 3<sup>rd</sup> Annual Neuroscience R&D Technologies Conference

Exploring cutting-edge technologies in pre-clinical neuroscience studies

Radisson Blu Edwardian Heathrow Hotel

28<sup>th</sup> - 29<sup>th</sup> September 2017, London, UK

## Event Overview

Translation from pre-clinical neuroscience to clinical setting is one of the major setback for the researchers working in Neuroscience R&D. However, considering the recent advances in this field there have been newer technologies coming up in the area of Drug target validation, Neuroimaging, Optogenetics, Neuromodulation and Neuroinformatics using different animal models and approaches.

After our two successful editions, **MarketsandMarkets** is proud to announce the **3rd Annual Neuroscience R&D Technologies Conference** to be held on **28th-29th September 2017 in London, UK**. The conference aims to focus on sharing the current market trends, technological advancements and future challenges in the pre-clinical neuroscience research where the leading experts from the pharma industry and research institutes will discuss about the latest technologies in Neuroscience R&D by presenting expert keynote presentations, live case studies and breakthrough panel discussions.

## Key Highlights:

- **Biomarkers and screening human iPSC** in drug discovery
- **Blood-Brain Barrier Proteomics** and its applications in drug discovery
- **Translational Imaging technologies**-EEG, EMG, FMRI for assessment of CNS function
- **Optogenetic tools** used in brain mapping
- Novel **neuroprostheses** for treating CNS disorders
- Trends in **Connectomics**
- **Translational animal models** for CNS disorders



3<sup>rd</sup> Annual

# Neuroscience R&D Technologies Conference

Radisson Blu Edwardian Heathrow Hotel, 28th - 29th September 2017, London, UK

## Sponsors/Exhibitors:



## Supporting Associations:



International Federation of Clinical Neurophysiology



## Media Partner:





3<sup>rd</sup> Annual

# Neuroscience R&D Technologies Conference

Radisson Blu Edwardian Heathrow Hotel, 28th - 29th September 2017, London, UK

## Who should attend?

From Pharmaceutical, Academics and Research Institutes-

Chief Scientific Officer | Directors | Heads | VP | Managers | Senior Scientists | Principal | Scientist | Neuroscientists | Project Leaders | Professors | Research Fellows in:

- ✓ Neuroscience | CNS drug discovery
- ✓ Translational Neuroscience
- ✓ Pre-clinical research
- ✓ Clinical research
- ✓ Computational Neuroscience | Neuroinformatics
- ✓ Neurotechnology
- ✓ Neuroimaging | Translational Imaging
- ✓ Neurodegenerative diseases
- ✓ Neuroengineering
- ✓ Neuropharmacology | Neurobiology
- ✓ Neuromorphic engineers

## Why attend?

- ✓ First ever conference on application of technology in developing neurological treatments
- ✓ Meet global heads of neuroscience from the industry and Academics
- ✓ 100+ neuroscience professionals attending
- ✓ Access to online presentations on-demand post-summit
- ✓ Case studies presented from leading technology collaborations
- ✓ Interactive panel and breakout sessions

## Advisory Committee



**Janet Nicholson**  
Director, CNS Diseases Research  
**Boehringer Ingelheim,**  
**Germany**



**Thomas Jahn**  
Lab Head, Neuroscience  
Discovery  
**AbbVie, Germany**



**Kei Cho**  
Chair, Neuroscience, MRC  
Centre for Synaptic Plasticity  
**University of Bristol, UK**



**Michela Chiappalone**  
Team Leader, Neurotechnology  
**Italian Institute of  
Technology (IIT), Italy**

For more information please contact Amit at  
[amit.shelke@marketsandmarkets.com](mailto:amit.shelke@marketsandmarkets.com) | +91 20 3010 8284



3<sup>rd</sup> Annual

# Neuroscience R&D Technologies Conference

Radisson Blu Edwardian Heathrow Hotel, 28th - 29th September 2017, London, UK

## Expert Speaker Panel



**Janet Nicholson**  
Director, CNS Diseases  
Research  
**Boehringer Ingelheim,  
Germany**



**Thomas Jahn**  
Lab Head, Neuroscience  
Discovery  
**AbbVie, Germany**



**Kei Cho**  
Chair, Neuroscience, MRC  
Centre for Synaptic Plasticity  
**University of Bristol, UK**



**Michela Chiappalone**  
Team Leader, Neurotechnology  
**Italian Institute of Technology  
(IIT), Italy**



**Mike O'Neill**  
Head, Molecular Pathology  
Group  
**Eli Lilly, UK**



**Paul Karila**  
VP of Discovery Services  
**Cellectricon, Sweden**



**Mimoun Azzouz**  
Chair, Translational  
Neuroscience,  
**University of Sheffield, UK**



**Frank Hirth**  
Group Leader, Neural Circuits &  
Behaviour  
**King's College London, UK**



**Keith Wafford**  
Research Advisor  
**Eli Lilly, UK**



**Marco Tripodi**  
Group Leader, MRC Centre  
**University of Cambridge, UK**



**Peter St George-Hyslop**  
Professor, CIMR  
**University of Cambridge, UK**



**Amin Hajitou**  
Deputy Head,  
Neuroinflammation &  
Degeneration Center  
**Imperial College London, UK**



**Andreas Koepke**  
Chief Business Officer  
**SynAging, Germany**



**Simon Schultz**  
Director, Neurotechnology,  
**Imperial College London, UK**



**Silvia Gatti-McArthur**  
Head, Research & Development  
CNS Innovation Center  
**Pierre Fabre, France**



**John Schetz**  
Professor of Pharmacology &  
Neuroscience  
**University of North Texas  
Health Science Center, USA**



**Bill Martin**  
CSO, Head, R&D  
**BlackThorn Therapeutics, USA**



**Jean-Pierre Mothet**  
Director of Research, CNRS  
**Aix-Marseille University,  
France**



**Dirk Schubert**  
Assistant Professor Cellular  
Neurophysiology  
**Radboud University  
Nijmegen Medical Centre,  
Netherlands**



3<sup>rd</sup> Annual

# Neuroscience R&D Technologies Conference

Radisson Blu Edwardian Heathrow Hotel, 28th - 29th September 2017, London, UK

## Day 1, 28th September 2017

08:15 Registration

08:55 Welcome note from MnM Conferences

09:00 Opening Remarks from the Chairman

09:10 **Keynote Presentation: TREM2, CD33 and clusterin: markers of innate immune dysfunction in Alzheimer disease**

- Genetic variants in TREM2, CD33 and clusterin are associated with increased risk for Alzheimer's disease (AD).
- These 3 genes are expressed in microglia and signal to and/or bind to each other, and likely represent an important pathway responding to the extracellular accumulation of misfolded protein aggregates.
- The disease associated variants in these genes likely cause dysfunction in this pathway.
- These genes therefore represent potential therapeutic and/or diagnostic targets for the modulation and monitoring of disease activity, particularly related to innate immune dysfunction.

**Peter St George-Hyslop**, Professor, CIMR, University of Cambridge, UK

### Technologies for Drug Target Validation

09:40 **Discovery and development of functionally-selective ligands as prospective disease-modifying therapeutics for Alzheimer's disease and frontotemporal lobe dementia**

**John Schetz**, Professor of Pharmacology & Neuroscience, University of North Texas Health Science Center, USA

10:10 **Misfolded-protein-induced neurodegeneration; oligomers and fibrils of amyloid- $\beta$  tau, and  $\beta$ synuclein**

- Drug testing in human tau-oligomer induced:
- In vitro models in primary rodent neurons
- In vitro models in human neuronal culture
- In vivo cognitive decline, synaptic loss and neuroinflammation in mice

**Andreas Koepke**, Chief Business Officer, SynAging, Germany

10:25 *Morning Refreshments and Poster Presentation | One-to-One Networking Meetings*

11:10 **Screening for modulators of neural activity using a novel phenotypic assay platform**

- Optical electrophysiology based on electric field stimulation & plate-based imaging for assessing neural excitability & synaptic communication in high throughput format
- KNIME-based multiparametric data extraction for combined optical electrophysiology and high content imaging to cover both functional and morphological disease aspects
- Increased relevance in early drug discovery for complex, multi-factorial neurological disorders

**Paul Karila**, VP, Discovery Services, Cellectricon

11:40 **Future aspects in screening human IPS cells for CNS drug discovery**

12:10 **Solution Provider Presentation; Please contact Abhinay Roy at [abhinay.roy@marketsandmarkets.com](mailto:abhinay.roy@marketsandmarkets.com)**

12:40 **Panel: Challenges in the translation of pre-clinical to clinical research in CNS drug discovery**

13:10 *Lunch and Poster Presentation | One-to-One Networking Meetings*

14:10 **Synapse weakening signals and potential intervention for Alzheimer's disease**

- Synaptic plasticity – underlying mechanism of learning and memory
- Cellular and molecular mechanisms of 'Synapse Weakening' – new approach for neurodegenerative disease drug discovery
- Microtubule associate protein Tau-mediated synapse weakening – novel therapeutic candidate for tauopathy

**Kei Cho**, Chair of Neuroscience, MRC Centre for Synaptic Plasticity, University of Bristol, UK

### Translational Imaging and Optical Methodologies

14:40 **Non-Invasive electrical brain stimulation using EEG and EMG for assessment of cognitive function**

14:55 **Role of fMRI for identifying preclinical CNS disorders**

15:25 **Solution Provider Presentation; Please contact Abhinay Roy at [abhinay.roy@marketsandmarkets.com](mailto:abhinay.roy@marketsandmarkets.com)**





3<sup>rd</sup> Annual

# Neuroscience R&D Technologies Conference

Radisson Blu Edwardian Heathrow Hotel, 28th - 29th September 2017, London, UK

15:40 Afternoon Refreshments and Poster Presentation | One-to-One Networking Meetings

16:25 **New neurotechnologies for probing neural circuit function in health and disease:**

- Two photon targeted, robotically automated whole cell patch clamp electrophysiology
- Two photon calcium imaging of hippocampal circuit dynamics in mice during performance of a memory task

**Simon Schultz**, Director, Neurotechnology, **Imperial College London, UK**

16:55 **Latest Optogenetic tools for controlling neuronal circuits used in brain mapping**

17:25 **New viral methods for manipulating neural circuits using two-photon microscopy**

- Methods for neural circuits mapping
- Viral approaches for circuit manipulation
- Imaging network activity combining viral approaches and two-photon microscopy

**Marco Tripodi**, Group Leader, MRC Centre, **University of Cambridge, UK**

17:55 **Closing Remarks from the Chairman**

18:00 Drinks Reception & Networking

**End of Day 1**



3<sup>rd</sup> Annual

# Neuroscience R&D Technologies Conference

Radisson Blu Edwardian Heathrow Hotel, 28th - 29th September 2017, London, UK

## Day 2, 29th September 2017

- 08:15**      **Registration**
- 08:55**      **Welcome note from MnM Conferences**
- 09:00**      **Opening Remarks from the Chairman**
- 09:10**      **Keynote: Applying a dimensional understanding of neurobehavioral disorders to advance the discovery and development of novel therapeutics**
- Overview of the preclinical-clinical translational gaps in neurobehavioral drug discovery and development
  - Importance of linking brain physiology to behavior using objective assessment tools that quantify emotional and behavioral domains
  - A targeted therapeutics approach that leverages a deeper understanding of the underlying physiology of neurobehavioral disorders to design accurate and less expensive clinical trials
- Bill Martin, CSO, Head, R&D, BlackThorn Therapeutics, USA**

### Translational Animal Models for CNS disorders

- 09:40**      **Strategies to establish translatable in vitro models for neurodegenerative disease**
- Lessons from screening invertebrate disease models
  - Current approaches to establish mechanistically novel Alzheimer's Disease models
- Thomas Jahn, Lab Head, Neuroscience Discovery, AbbVie, Germany**
- 10:10**      **Solution Provider Presentation; Please contact Abhinay Roy at [abhinay.roy@marketsandmarkets.com](mailto:abhinay.roy@marketsandmarkets.com)**
- 10:25**      *Morning Refreshments and Poster Presentation | One-to-One Networking Meetings*
- 11:10**      **Developing in vivo models of tau pathogenesis and tau propagation which are relevant to human disease and applicable to pre-clinical drug discovery**
- Summarise AD transgenic models with a focus on tau models used in literature and by industry for drug discovery
  - Update on novel models of tau propagation and how to optimise these uses in drug discovery and translational studies
  - Highlight the key considerations for model optimisation and show examples of how these models can be applied to evaluate therapeutic targets and mechanisms
- Mike O'Neill, Head, Molecular Pathology Group, Eli Lilly, UK**
- 11:40**      **The relevance of small animal models for translational research into mental health disorders**
- Case study: C9ALS/FTD - from molecule to mind
  - The road ahead: from bench to bedside
- Frank Hirth, Group Leader, Neural Circuits and Behaviour, King's College London, UK**
- 12:10**      **Solution Provider Presentation; Please contact Abhinay Roy at [abhinay.roy@marketsandmarkets.com](mailto:abhinay.roy@marketsandmarkets.com)**
- 12:40**      **Targeted gene transfer technologies to brain tumours through the blood brain barrier**
- Intravenous gene therapy against brain tumours
  - Towards a bacteria virus that targets and destroys brain tumors
  - Systemic chemovirotherapy against brain tumours
- Amin Hajitou, Deputy Head, Neuroinflammation & Degeneration Center, Imperial College London, UK**
- 13:10**      *Lunch and Poster Presentation | One-to-One Networking Meetings*
- 14:10**      **Novel neuroprostheses for treating neurological disorders: from in vitro to in vivo studies**
- Dissociated neurons in vitro can be coupled to Micro-Electrode Arrays (MEA)
  - A closed-loop communication between a MEA culture and a model can be realized
  - The same system can be exploited for the development of innovative brain-prostheses
  - Innovative brain-prostheses rely also on stimulation protocols, to be tested in vivo
- Michela Chiappalone, Team Leader, Neurotechnology, Italian Institute of Technology (IIT), Italy**
- 14:40**      **Treating epileptic seizures with brain stimulation**



**3<sup>rd</sup> Annual**

# Neuroscience R&D Technologies Conference

Radisson Blu Edwardian Heathrow Hotel, 28th - 29th September 2017, London, UK

## Computational Neuroscience & Neuroinformatics

- 15:10**      **Novel approach in decoding and encoding in neuronal populations for assessment of cognitive behaviour**
  - 15:25**      **Trends in Connectomics for understanding the synaptic conditions**
  - 15:55**      **Closing remarks from the Chairman**
  - 16:25**      **End of Conference**
-