NIHR | Brain Injury MedTech Co-operative

Newsletter, Issue 12, April2021

Patient Inspired Innovation

Welcome to issue 12 of the NIHR Brain Injury MedTech Co-operative newsletter.

Current Topics
In this edition, find out about the results of our Seedcorn competition 2020 and more about our Theme Leads and current research..

About us
The MIC is one of eleven national Medtech and In vitro diagnostic Co-operatives (MICs) funded by the National Institute for Health Research (NIHR).

The MIC works with patients, carers, academics, clinicians and industry to develop new medical devices, healthcare technologies and technology-dependent interventions to improve treatment and quality of life for patients with brain injuries.

Be part of Research
To find out about opportunities to participate or get involved in brain injury research sign up to Register for Healthcare Involvement and Technology Evaluation (RHITE). The register is designed to match researchers with patients and carers who would like to help with our understanding of brain injury and development of new treartments and technologies.
http://www.brainmic. nihr.ac.uk/rhite

Important:
To unsubscribe from RHITE and this newsletter please send an email to:
involve@brainmic.org

An exciting opportunity to take part to Research!

Childhood Traumatic Brain Injury and Neurorehabilitation

Summary: David Young is a paediatric physiotherapist and children's major trauma rehabilitation coordinator at Addenbrooke's Hospital. He specialises in childhood Traumatic Brain Injury (TBI) and neurorehabilitation, and has first-hand experience of the key roles of parents and carers following a chilhood brain injury.

In January 2021 David was awarded NIHR funding (a Clinical Doctoral Research Fellowship) to complete his PhD starting in July 2021.

David will spend time interviewing parents to better understand the experiences and needs of parents to support them to deliver physiotherapy at home after their child leaves hospital. He will then look to develop evidence based support to help parents to deliver this physiotherapy themselves at home.

This research will be based between CUH (Addenbrooke's Hospital), the University of Cambridge and University of East Anglia in Norwich. David is currently setting up his Patient and Public Involvement panel (PPI) and is very much looking forward to working with parents of children with brain injury.

Aim: To look to develop evidence based support in order to better help parents caring for children with Traumatic Brain Injury (TBI) to deliver physiotherapy at home.

Eligibility Criteria: Parents with children who have experienced Traumatic Brain Injury and who were admitted to hospital.

Get involved!

HOW TO GET INVOLVED
If you want to know more about how to get involved in this study, please send an email to involve@brainmic.org

The Brain Injury MIC presents its Theme Leads:

Dr Mark Kotter, Regenerative Neuroscience Theme Lead

As you may be aware, the work of the NIHR Brain Injury MIC is divided into eleven themes led by internationally renowned experts in their respective field. This month we are delighted to introduce to you our Regenerative Neuroscience Theme Lead: Dr Mark Kotter.

Mark Kotter is a fellowship trained complex spine neurosurgeon and a Clinician Scientist at the University of Cambridge. He undertook sub-specialist training in complex spinal surgery with Professor Michael Fehlings at the University of Toronto and specialises in spinal cord injury patients. His research focusses on stem cells, cellular reprogramming and regenerative medicine. As a neurosurgeon, Mark seeks to develop novel regenerative medicine approaches; supported by his Clincian Scientist Award from the National Institute for Health Research (NIHR) and in collaboration with Myelopathy.org and MediciNova, one of these approaches is currently tested in RECEDE Myelopathy, the first regenerative medicine trial for degenerative cervical myelopathy, a common and disabling disease affecting the spinal cord.

Mark is also known for developing opti-ox, a gene targeting approach that enables faithful execution of genetic information in cells. Applied to cellular reprogramming, opti-ox demonstrated that robust activation of a new cell type program (encoded in transcription factors) is necessary and sufficient to deterministically induce a new cellular identity. These findings challenge the theory that cell reprogramming depends on stochastically determined permissive states and enables the production of any human cell within days at purities approaching 100%.

He is the founder of two start-ups based on this technology, and co-founder and trustee of Myelopathy.org, the first charity dedicated to a common yet often overseen condition causing a 'slow motion spinal cord injury'. Myelopathy.org was officially launched as a Charity in May 2019 at the House of Lords.

...and an award to our Theme Lead!

Dr Mark Kotter, CEO and Founder of BitBio, recently awarded Biotech Company of the Year!

Congratulations to Mark as CEO and founder of BitBio, recently awarded Biotech Company of the Year at the Cambridge Independent Science and Technology awards.

Accepting the award at a virtual ceremony attended by over 100 guests, Mark said, " Despite COVID and the challenges of this last year, Cambridge is still buzzing with innovation and opportunity. That's clear from the companies and individuals on show at these awards. We are humbled and honoured to have won the Biotech of the Year prize amongst a shortlist of such fantastic organisations. And of course, it's thanks to the team, the Cambridge ecosystem, our investors, our partners and everyone else who is working with us to code cells for health."

Well done to Mark and his team at BitBio!

...Updates on COVID-19

NIHR COVID-19 UPDATE

Now that the COVID vaccination programme has reached the highest risk groups in the population and has helped drive down the effects of the pandemic, we are increasingly focusing on managing the recovery of research into other conditions, building on the lessons learnt during the pandemic. NIHR will continue to work on COVID studies, including the long-term consequences of COVID-19, some vital vaccine and antiviral studies, alongside other studies.

https://www.nihr.ac.uk/covid-19/foundations for this success.

BRAIN MIC COVID-19 UPDATE

The Brain MIC has supported various projects during COVID-19. To find out more about these projects and their progress please go to our website.

https://www.brainmic.nihr.ac.uk

ROYAL COLLEGE OF SURGEONS COVID-19 RESEARCH

The Royal College of Surgeons have also established a research group looking at specific research projects around COVID-19. To find out more on these projects please visit their website.

https://www.rcseng.ac.uk/coronavirus/rcs-covid-research-group/

...upcoming events in the year:

The Brain Injury Technologies Think (BITT) tank 2021 Series

Series 1 - 'Covid-19 Brain Injury Challenges and Solutions'

Kick off is on the 18 June 2021 - Don't forget to register!

This online event is free of charge and will be split into three sessions:

All events

Free-to-attend!

Session 1: Unmet Needs and challenges in a post pandemic world - Sharing the experiences and lessons learnt from clinical, patient and industry perspectives. 18 June 2021

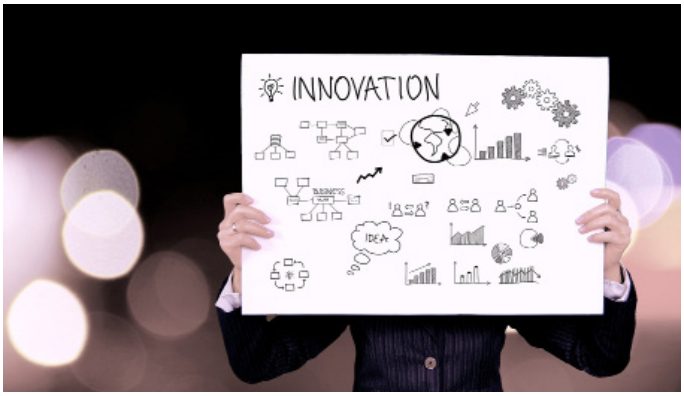
Session 2: Multiple Technology Showcase Events - Limited slot opportunities to present solutions to expert networks followed by:

"Talk to us together! Enhancing Parent Experience of Neonatal Encephalopathy"
Professor Topun Austin, Consultant Neonatologist
Register by 21 June in order to present on 25 June 2021
"Goals & challenges for the next generation of healthcare PPE"
Abigail Bush, Technology Lead, NIHR Brain MIC
Register by 28 June in order to present on 2 July 2021

Session 3: Horizon scanning with relevant partner organisations - Hear what is in the pipeline and how you can find relevant support from across the innovation landscape. Date TBC

For further information on the above event please visit our website:
https://www.brainmic.nihr.ac.uk/bitt-tank-2021

...the lastest news from our funding scheme!
Seedcorn Competition Awards 2021



Also this year, the Brain Injury MIC has awarded novel ideas and technologies that can improve the life of those affected by brain injury through our Seedcorn Competition.

The NIHR Brain Injury MedTech Cooperative is delighted to announce the winners of the Seedcorn Competition 2020.

To find out more about the competion and to see details of all winners to date please click here:

The 2020 winners are:

- Novel remote follow-up technology in neurotrauma (PROMPT), Mr Brandon Smith, University of Cambridge
- Revolutionary Assessment for concussion in sports: Investigation of the Precision finger grip to support PItchside Diagnosis of mild Concussion: RAPID-C, Dr Genevieve Williams, University of Exeter
- Meeting the neurorehabilitation need for kinematic measures of everyday movement using novel motion tracking (Biokido): validity and test-retest reliability, Professor Valerie Pomeroy, University of East Anglia
- Implementation of machine learning to facilitate Brain Lesion Analysis and Segmentation Tool using Computed Tomography in traumatic brain injury (Implement BLAST-CT), Dr Virginia Newcombe, University of Cambridge
- Feasibility study of an in-situ brain-chemistry monitoring optical probe, Dr Farah Alimagham, University of Cambridge

Feasibility Study of a Virtual Reality Telerehabilitation Programme for Stroke patients in the community.
Hobbs Rehabilitation - Seedcorn Winner 2019

Hobbs Rehabilitation received Seedcorn funding in 2019 to work with the rehabilitation technology company Evolv in order to test the usability of their CE certified EvolvRehab virtual therapy software platform and their proprietary RehabKit hardware solution as a means of delivering telerehabilitation to stroke survivors. The University of Winchester are also involved to help assess the usability of the system based on patients' feedback.

EvolvRehab uses Virtual Reality, motion capture systems like the Microsoft Azure Kinect and Gamification to help increase the dose and intensity of therapeutic activity to traditional rehabilitation in clinical settings.

.....Hobbs Rehabilitation continued

Covid 19 has had devastating effects on the amount of specialised rehabilitation received by stroke and other brain injury survivors since the pandemic began. There has been an important reduction in vital inpatient and outpatient rehabilitation services with patients not receiving the dose and intensity of rehabilitation required to lead to improved outcomes once discharged from the hospital.

The result is that stroke survivors will have a greater level of disability which will be more prolonged and, in the end, require greater care with the corresponding costs to families as well as the British economy.

David Fried, the CEO of Evolv says the results of the Hobbs Telerehabilitation project so far reflect similar findings in similar telerehabilitation projects in the UK and other countries, “What we’re finding is that both therapists, patients and their carers and families are normally seeing marked improvements in patients’ range of motion, balance, coordination while showing reduced levels of fatigue after using their personalised therapy through EvolvRehab at home for several months or even less time in some cases".

.....and finally, our most recent event
Cambridge Festival 2021

The NIHR Brain Injury MIC was delighted to p[articipate in the Festival by showcasing 3 exciting projects around sports concussion.

Now Closed!
26 March - 4 April 2020
https://www.festival.cam.ac.uk/

RESCUR-RACER - Dr Naomi Deakin
A two year study in motorsport funded by the FIA Foundation and delivered in partnership with world motorsport’s governing body the Fédération Internationale de l’Automobile (FIA).

What is a mild traumatic brain injury? - Dr Virginia Newcombe
Projects based in the Emergency Department and Neurosciences Critical Care Unit, this research encompasses the entire spectrum of TBI from mild to severe.

SCORES Project - Dr Michael Grey
The SCORES project is an independent research study designed to better understand the cognitive health of athletes as they age.

To find out more about the specific Sports Concussion projects which we showcased and to watch the podcasts by our Clinicians, please visit our website: https://www.brainmic.nihr.ac.uk/sports-concussion

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