

Postdoctoral Associate, SMART CAMP (Ref:  
IRG\_CAMP\_2019\_012)  
Singapore-MIT Alliance for Research and Technology  
(SMART) Centre

Direct Link: <https://www.AcademicKeys.com/r?job=124932>

Downloaded On: Sep. 23, 2019 9:50am

Posted Jun. 28, 2019, set to expire Oct. 28, 2019

<b>Job Title</b>	Postdoctoral Associate, SMART CAMP (Ref: IRG_CAMP_2019_012)
<b>Department</b>	(Critical Analytics for Manufacturing Personalized- medicine) Inter Disciplinary Research Group
<b>Institution</b>	Singapore-MIT Alliance for Research and Technology (SMART) Centre Singapore, Singapore, Singapore
<b>Date Posted</b>	Jun. 28, 2019
<b>Application Deadline</b>	Jul. 27, 2019
<b>Position Start Date</b>	Jun. 27, 2019
<b>Job Categories</b>	Post-Doc
<b>Academic Field(s)</b>	Biology - Microbiology Biology - General
<b>Job Website</b>	<a href="http://smart.mit.edu/careers/career-opportunities">http://smart.mit.edu/careers/career-opportunities</a>

**Apply By Email**

**Job Description**

Project Overview

SMART CAMP (Critical Analytics for Manufacturing Personalized-Medicine) is a new interdisciplinary research programme in Singapore (CREATE international research campus and innovation hub) and at the Massachusetts Institute of Technology (MIT). SMART CAMP addresses key technology bottlenecks in cell therapy manufacturing: (i) critical quality attributes of safe, effective cell therapy products; and (ii) integrated process analytics to monitor and modulate those attributes. While cell therapies are poised to transform healthcare for both the industry and the patient, there remain many outstanding scientific and technical challenges to significant global impact that this R&D programme addresses. This high-impact focus includes measurement and feedback control of processing

Postdoctoral Associate, SMART CAMP (Ref:  
IRG\_CAMP\_2019\_012)  
Singapore-MIT Alliance for Research and Technology  
(SMART) Centre

Direct Link: <https://www.AcademicKeys.com/r?job=124932>

Downloaded On: Sep. 23, 2019 9:50am

Posted Jun 28, 2019, set to expire Oct 28, 2019

parameters (process analytic technologies, or PAT) that contribute to cell viability and function during cell proliferation, and the measurement at intermediate and final steps of the cell product properties correlated with positive therapeutic outcomes (critical quality attributes, or CQA).

This interdisciplinary team comprises engineers, biologists, clinicians, manufacturing, and data analytics experts from multiple MIT academic units, and multiple Singapore-based universities, research centres of excellence, and hospitals who are experienced at translational demonstrations of technologies in safety-regulated industries such as cell therapies. As with all postdoctoral associates (PDAs) in SMART CAMP based in Singapore, the PDA will work in a diverse team of experts including several principal investigators (PIs) and PDAs, and receive direct mentorship regarding career development from a pair of who are based in Singapore and at MIT, respectively.

CAMP's unique, enabling and cross-cutting capabilities include cell and clinical biology, microfluidics, real-time optics and spectroscopies, 3D-printed devices, process analytics, data analytics, and bioinformatics. This programme will demonstrate these approaches required of cell-based personalized medicine through three translational testbeds (three Flagship Projects), ultimately facilitating access for more patients to life-saving, approved cell therapies for currently intractable health challenges. These flagship projects will address allogeneic and autologous cell therapy products, including but not limited to cell sources including adult stem/progenitor cells and immune cells for treatment of specific cancers, tissue degeneration, and autoimmune diseases.

Flagship Project 1: Label-free critical quality attributes (CQA) for personalized efficacy of cell therapies, including multivariate analysis of biological and biophysical attributes

Flagship Project 2: Rapid critical quality attributes (CQA) for safety of cell sources & cell therapy products, including process analytic technologies (PAT)

Flagship Project 3: Integrated process analytic technologies (PAT) for cell proliferation and recovery, including in-line and intermittent monitoring to promote efficacy and safety CQA

#### Job Responsibilities

#### CAMP Flagship Project 2 - Metabolome-based adventitious agent detection

One of the key challenges in deploying cell therapies lies in the analytical assays needed to confirm that they are safe for administration. As part of the development of cell manufacturing for therapeutics, there is an essential need to ensure that the product is free of adventitious agents, especially given that the recipients are typically immune compromised and hence, highly vulnerable to infection.

Postdoctoral Associate, SMART CAMP (Ref:  
IRG\_CAMP\_2019\_012)  
Singapore-MIT Alliance for Research and Technology  
(SMART) Centre

Direct Link: <https://www.AcademicKeys.com/r?job=124932>

Downloaded On: Sep. 23, 2019 9:50am

Posted Jun. 28, 2019, get to expire Oct. 28, 2019

Further, the cell therapy products have limited shelf-lives and the patients are in critical need of rapid treatment. Thus, there is a vital need for methods that can rapidly and reliably assess products for contamination and do so with high sensitivity and speed.

- This PDA will explore detection and screening methodologies based on metabolite screening of microorganisms and virally-infected cells to develop a rapid, sensitive diagnostic tool for safety screening.
- The PDA will take responsibility for identification of candidate analytes, methods for detection, limit of detection determination and detection in complex samples.
- The PDA will be expected to interface with cell biologists, engineers and microbiologists in CAMP and among its collaborators to achieve these objectives.

#### Job Requirements

- Ph.D. degree in microbiology, biotechnology, or relevant discipline is essential.
- Demonstrable expertise in metabolite analysis and data interpretation are essential, including the bio-informatics skills necessary for data analysis.
- An understanding of metabolite identification and quantification by MS/MS, Raman and other spectroscopic techniques is desirable.
- Excellent verbal and written English communication skills are required.
- Experience working with bacteria and or fungi is desirable.
- Self-motivated, independent, with superior organizational and analytical skills
- The ability to work independently is important, as is the ability to work well in a team, in a collaborative fashion.
- Good track record of publication and scientific output
- Able and committed to work in Singapore

To apply, please visit our website at: <http://smart.mit.edu/careers/career-opportunities>. Interested applicants are invited to send in their full CV/resume, cover letter and list of three references (to include reference names and contact information). We regret that only shortlisted candidates will be notified.

#### Contact Information

Please reference Academickeys in your cover letter when applying for or inquiring about this job announcement.

Postdoctoral Associate, SMART CAMP (Ref:  
IRG\_CAMP\_2019\_012)  
Singapore-MIT Alliance for Research and Technology  
(SMART) Centre

Direct Link: <https://www.AcademicKeys.com/r?job=124932>

Downloaded On: Sep. 23, 2019 9:50am

Posted Jun. 28, 2019, set to expire Oct. 28, 2019

**Contact**

Regina Chan

Human Resource

Singapore-MIT Alliance for Research and Technology  
(SMART) Centre

1 CREATE Way

Singapore, Singapore 138602

Singapore

**Phone Number** 65-65168284

**Contact E-mail** regina@smart.mit.edu