From: Linda Gale [mailto:lgale@nteu.org.au]
Sent: Wednesday, 30 November 2016 4:08 PM
To: Nick Ruskin; Monroe, John; Pill, Stuart; Catherine Pugsley; Michael Butler; Chambers - Johns C; Chambers - Kovacic DP; Chambers - Catanzariti VP
Subject: AM2014/229; AM2014/230; AM 2014/224; documents which may be put to witnesses tomorrow

Please note that the following documents may be put to witnesses by NTEU tomorrow:

Professor Crabb:

- Extract from Burnet Institute Annual Report 2015 (attached – Burnet_AR_2-15_extract.pdf)
- Screenshot of Immunity journal article summary (attached – Malaria Article.jpg)
- Table headed Liver-Resident Memory CD8+ T Cells Form Front-Line Defense against Malaria Liver-Stage Infection (attached – Crabb Research Team.docx)

In relation to **Professor Wooden**, NTEU may wish to rely on the Reasonable Hours Test Case, PR072002.

Linda Gale
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excellence innovation impact

ANNUAL REPORT
FOR THE YEAR ENDED
31 DECEMBER 2015

Burnet Institute
Medical Research. Practical Action.

CONTENTS

Cover: Mother and baby in Kokopo, Papua New Guinea

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Professor Michael Toole AM, MBBS, BMedSc
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Design: Francis Maurice Design
Editorial Contributor: Angus Morgan

Burnet Institute gratefully acknowledges funds received from the Victorian Government principally under its Operational Infrastructure Support Program, and from the Federal Government principally through the Department of Foreign Affairs and Trade, and NHMRC.

A full copy of this Annual Financial Report is available on our website, or if you would prefer a printed copy, please call +61 3 9282 2111. This Annual Financial Report has been prepared in accordance with the requirements set out in the Corporations Act, 2001 and the ACFID Code of Conduct. Burnet Institute is a member of the Australian Council for International Development (ACFID) and is a committed signatory to the ACFID Code of Conduct, which is a voluntary, self-regulatory sector code of good practice. The Code requires members to meet high standards of corporate governance, public accountability and financial management.

More information on the Code, including how to make a complaint, can be obtained from www.acfid.asn.au or emailing complaints@acfid.asn.au. Burnet Institute also has its own complaints handling policy which can be activated by phoning Paul Rathbone on +61 3 9282 2111 or emailing feedback@burnet.edu.au.

Burnet Institute is a member of the Association of Australian Medical Research Institutes (AAMRI), the peak body representing Australia's pre-eminent independent medical research institutes. All members of AAMRI are internationally recognised as leaders in health and medical research.

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For more information about our work visit burnet.edu.au or ring +613 9282 2111.

ABOUT US

Burnet Institute is an Australian, unaligned, independent, not-for-profit organisation whose purpose is to improve the health of disadvantaged, poor or otherwise vulnerable people throughout the world.

OUR MISSION

To achieve better health for poor and vulnerable communities in Australia and internationally through research, education and public health.

OUR VALUES

We are passionate in our commitment to working and growing together to create a healthier world. We value excellence, innovation and social justice, and share a desire to extend the boundaries of knowledge and understanding.

OUR UNIQUE APPROACH

Linking medical research with public health action enables us to respond with comprehensive and innovative solutions to complex health issues through:

1) generating new knowledge and health intervention tools,
2) applying the best available evidence to community-level public health programs.

Burnet Institute is a formally accredited medical research organisation with the National Health and Medical Research Council (NHMRC) and as a non-government organisation (NGO) with the Australian Department of Foreign Affairs and Trade – Australian Aid. We are the only organisation in Australia with this dual accreditation.

We have particular expertise in specific infectious diseases of global health significance (especially HIV, malaria, tuberculosis, hepatitis, influenza and emerging infectious diseases), and in understanding immune responses and developing therapies for these infections and other human diseases, including some cancers.

Burnet also focuses on women's and children's health; alcohol, drugs and harm reduction; sexual and reproductive health; and young people's health.

While based in Melbourne, Burnet Institute has offices and representatives in Myanmar, Papua New Guinea, China (Tibet Autonomous Region) and Lao PDR, as well as activities in other Asian and Pacific countries. Approximately a third of our staff is based in these overseas offices.

Burnet Institute is named in honour of Sir Frank Macfarlane Burnet OM, AK, KBE, who received the Nobel Prize for Medicine in 1960.

EDUCATION AND TRAINING

Education is a priority at the Burnet Institute, with students undertaking the research component of their university degrees at the Honours and Postgraduate (Masters and PhD) levels in a range of projects. Students are based in one of Burnet's three Centres, but contribute broadly to the research productivity and major mission statement of the Institute. Burnet supervisors provide high-level research and career training in a collaborative team environment. They also actively engage in education and training programs, delivering public and international short courses and university-accredited postgraduate units.

Research student projects

In 2015, 76 students participated in biomedical laboratory-based projects, epidemiology and field-based research. Our supervisors and their research teams worked to successfully train and mentor 16 Honours students enrolled across three universities:

- Monash University, 13
- University of Melbourne, 1
- La Trobe University, 2

Burnet's PhD program continues to grow in size and productivity with 59 students enrolled in six universities:

- Monash University, 34
- University of Melbourne, 20
- RMIT University, 2
- University of New South Wales, 1
- Queensland University of Technology, 1
- La Trobe University, 1

Research students and supervisors are supported by the Burnet's Research Students Committee (RSC) which has representation from the postgraduate student body, senior scientists from each Burnet Centre, and Honours and Postgraduate Coordinators.

Burnet students continue to have a positive impact on our research output. In 2015, more than a quarter of the peer-reviewed scientific publications produced by Burnet (55 of 218) involved at least one and often multiple students as authors. Our students were first-authors on 32 papers which is an outstanding achievement. Many students received awards based on their poster and oral presentations at major national and international conferences and congresses. Several students who completed or submitted their PhDs this year are pursuing careers in research through postdoctoral positions at leading international research institutes and universities, while others are actively engaged in industry. Our thanks to Dr Paul Ramsland for his contribution as Education Officer in 2015.

Postgraduate international public health studies

Burnet continues to coordinate and deliver ten accredited postgraduate international public health units for Monash University's Master of Public Health and Master of International Health. These courses encompass the breadth of Burnet's global health expertise including: women's and children's health, infectious diseases, HIV, nutrition, alcohol and other drugs, refugee health, health economics and primary health care and also focus on key communication, training and field methods skills for global health practitioners and researchers. The courses attract domestic and international postgraduate students as well as short course participants from government and non-government organisations in Asia, Africa and the Pacific, with 230 enrolments in 2015.

Burnet is striving to provide the best possible research environment for its students and aims to create greater opportunities for their learning, such as student symposiums and educational workshops.

– DR RAFFI GUGASYAN,
EDUCATION OFFICER, 2016

EDUCATION IN NUMBERS

76 students

59 PhD students

1 Masters student

16 Honours students

10 accredited postgraduate international public health units

3 centres

230 enrolments in public health courses

218 peer-reviewed publications in 2015

PHD STUDENTS

CONGRATULATIONS TO THE STUDENTS RECEIVING PHDS IN 2015

Burnet's PhD program continues to flourish with 59 students enrolled in six universities.

We place great emphasis on postgraduate study, providing high-quality research and training in areas related to public health, and basic science in infectious diseases and immunology. Recent PhDs investigated HIV entry and replication, HCV virology and immunology, autoimmune disease, malaria, tuberculosis, drug misuse, sexual health, modelling of infectious diseases, and vaccine development.

"Burnet provides a unique environment where clinical outcomes in patients influence basic research in the laboratory. Throughout my PhD I greatly benefitted from the strong ties Burnet Institute holds with The Alfred hospital and the HIV-positive community in general, allowing me to evaluate the mechanisms driving non-AIDS related diseases in people currently living with HIV."

– DR THOMAS ANGELOVICH PHD
POSTDOCTORAL SCIENTIST, JAWOROWSKI LABORATORY
CENTRE FOR BIOMEDICAL RESEARCH

WE CONGRATULATE THE STUDENTS WHO RECEIVED PHD AWARDS:

Yousef Al-Hammad
Functions of Hepatitis C Virus Glycoprotein E2 Variable Regions

Thomas (Tom) Angelovich
Investigating the impact of chronic inflammation on monocyte function in HIV+ individuals and the elderly

Sarah Charnaud
Novel components used for protein export and functionality in *Plasmodium falciparum*.

Joseph (Joe) Doyle
Effectiveness of treating recent acquired hepatitis C infection in Australia

Brendan Elsworth
Characterisation of the *Plasmodium falciparum* Export Complex

Ben Fancke
Where It All Begins: Exploring Dendritic Cell Control of Viral Infection and Cell Development in the Bone Marrow

Philippe Latour
Development of an Immunotherapy to Treat Persistent Hepatitis C

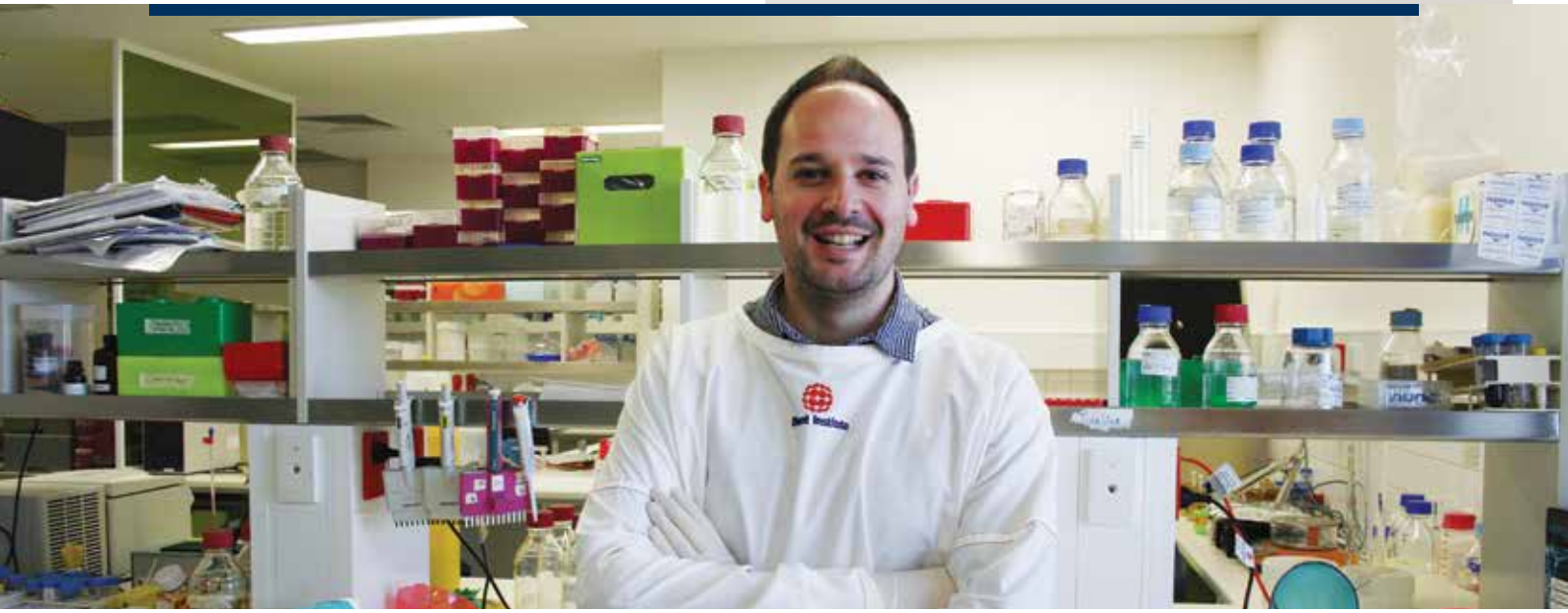
Siti Khayriyyah (Kye) Mohd Hanafiah
Dimeric IgA (dIgA) and cell wall components of M. tuberculosis (MTB) as tools in point-of-care (POC) diagnostics Infection

Rachel Sacks-Davis
Hepatitis C Transmission and Natural history of newly acquired hepatitis C in people who inject drugs

Sushama Telwatte
Analysis of ligands and calcium signals used by *Plasmodium falciparum* parasites during the invasion of erythrocytes

Tana Taechalertpaisarn
Role of Silent Mutations K65K and K66K in Subtype B HIV-1 Reverse Transcriptase Selected During Drug Therapy

Xu-Dong Zhang (Stella)
Vulnerabilities and opportunities for improving sexual and reproductive health and rights for adolescent female sex workers in Kunming, China



Liver-Resident Memory CD8$^+$ T Cells Form a Front-Line Defense against Malaria Liver-Stage Infection

Immunity

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Immunity

< Previous Article

Volume 45, Issue 4, p889–902, 18 October 2016

Next Article >

Article

Liver-Resident Memory CD8$^+$ T Cells Form a Front-Line Defense against Malaria Liver-Stage Infection

Daniel Fernandez-Ruiz, Wei Yi Ng, Lauren E. Holz, Joel Z. Ma, Ali Zaid, Yik Chun Wong, Lei Shong Lau, Vanessa Mollard, Anton Cozijnsen, Nicholas Collins, Jessica Li, Gayle M. Davey, Yu Kato, Sapna Devi, Roghieh Skandari, Michael Pauley, Jonathan H. Manton, Dale I. Godfrey, Asolina Braun, Szun Szun Tay, Peck Szee Tan, David G. Bowen, Friedrich Koch-Nolte, Björn Rissiek, Francis R. Carbone, Brendan S. Crabb, Mireille Lahoud, Ian A. Cockburn, Scott N. Mueller, Patrick Bertolino, Geoffrey I. McFadden, Irina Caminschi[10], William R. Heath[10]

[10] Lead contact

DOI: http://dx.doi.org/10.1016/j.immuni.2016.08.011 | CrossMark

Highlights

- CD8$^+$ tissue-resident memory T cells (Trm cells) can be found in the murine liver
- These liver Trm cells survey the liver from within the sinusoids
- A prime-and-trap vaccination strategy efficiently induces liver Trm cells
- Liver Trm cells are essential for protection against liver-stage malaria after vaccination

Summary

In recent years, various intervention strategies have reduced malaria morbidity and mortality, but further improvements probably depend upon development of a broadly protective vaccine. To better understand immune requirement for protection, we examined liver-stage immunity after vaccination with irradiated sporozoites, an effective though logistically difficult vaccine. We identified a population of memory CD8$^+$ T cells that expressed the gene signature of tissue-resident memory T (Trm) cells and remained permanently within the liver, where they patrolled the sinusoids. Exploring the requirements for liver Trm cell induction, we showed that by combining dendritic cell-targeted priming with liver

Graphical Abstract