

# 12<sup>th</sup> Annual Scientific Workshop

Novotel Barossa Valley

7<sup>th</sup> - 9<sup>th</sup> June 2017

Day One: Wednesday, 7<sup>th</sup> June 2017

## Pre-Function Area

11:00 – 12:00 **Registration and Refreshments**

12:00 – 13:00 **The Cellar Kitchen**

## Lunch

13:00 – 13:15 **Shiraz**

## Welcome

**Tony Cunningham** (ACH<sup>2</sup>) and **Peter Revill** (ACHV)

13:15 – 14:00 **HIV Plenary**

Chair: Tony Cunningham

**Professor Dan Barouch**

Title: **Therapeutic vaccines for targeting persistent SIV**

14:00 – 15:00 **Joint Session 1**

## Advancing Antiviral Vaccines

Chairs: Stephen Kent and Heidi Drummer

14:00 – 14:15 **Branka Grubor-Bauk** [16]

Induction of genotype-cross reactive, hepatitis C virus-specific cell mediated immunity in DNA-vaccinated mice

14:15 – 14:30 **Charani Ranasinghe** [44]

Pre-clinical assessment of intranasally delivered IL-13R $\alpha$ 2 and IL-4R antagonist adjuvanted HIV vaccines

14:30 – 14:45 **Andy Pombourios** [40]

A novel glycan deletion mutation in HIV-1 Env enhances exposure of 4 key broad neutralization epitopes

<b>14:45 – 15:00</b>	<b>Christopher Gonelli</b>		<b>[15]</b>
		Immunogenicity of HIV-1 mature-form virus-like particles with enhanced Env incorporation and antigenicity	
<b>15:00 – 15:30</b>	<b>Pre-Function Area</b>		
	<b>Afternoon Tea</b>		
<b>15:30 – 17:30</b>	<b>Shiraz</b>		
	<b>Joint Session 2</b>		
	<b>Antiviral T-Cell Immunity</b>		
		Chairs: Eric Gowans and Charani Ranasinghe	
<b>15:30 – 15:45</b>	<b>Medhi Rasoli Pirozyan</b>		<b>[39]</b>
		Chemokine-regulated recruitment of HCV-specific T cell sub-populations to the liver in acute and chronic HCV infection	
<b>15:45 – 16:00</b>	<b>Anastasia Agathos</b>		<b>[2]</b>
		The role of CD8 memory stem cells in protection against hepatitis C infection	
<b>16:00 – 16:15</b>	<b>Curtis Cai</b>		<b>[10]</b>
		Phenotyping effector and exhausted CD8+ T cell subsets in chronic HCV infection	
<b>16:15 – 16:30</b>	<b>Jerome Samir</b>		<b>[50]</b>
		Linking phenotype with the clonotype and transcriptome of human B and T cells using VDJPuzzle	
<b>16:30 – 16:45</b>	<b>Silvana Gaudieri</b>		<b>[14]</b>
		Viral adaptation to CD4+ T cell-mediated immune pressure	
<b>16:45 – 17:00</b>	<b>Break</b>		
<b>17:00 - 18:00</b>	<b>Cabernet</b>		
	<b>ACHV AGM</b>		
<b>18:00 – 19:00</b>	<b>Free Time</b>		
<b>19:00</b>	<b>Shiraz</b>		
	<b>Dinner</b>		

## Day Two: Thursday, 8th June 2017

07:00 – 08:30

### The Cellar Kitchen

#### Breakfast

08:30 – 09:15

### Shiraz

#### Hepatitis Plenary

Chair: Peter Revill

**Professor Brian J. McMahon**

Title: **Challenges in the Global Elimination of HBV**

09:15 – 10:00

### Joint Session 3

#### Hepatitis Epidemiology and the Goal of Virus Elimination

Chairs: Michael Beard and Michael Mina

09:15 – 10:45

**Peter Revill**

[45]

The International Coalition to Eliminate Hepatitis B

09:30 – 09:45

**Chaturaka Rodrigo**

[48]

Establishment of the InC3 Viral Sequence Repository (InC3 VSR) and its applications

09:45 – 10:00

**Sofia Bartlett**

[7]

Phylogenetic clustering of recently acquired hepatitis C virus infection from 2004-2015

10:00 – 10:30

### Pre-Function Area

#### Morning Tea

10:30 – 12:15

### Shiraz

#### Concurrent Session 1

#### HIV Persistence

Chairs: Dan Barouch and Sarah Palmer

10:30 – 10:45

**Eunok Lee**

[26]

The Impact of Treatment Duration on Defective and Expanded Identical HIV Genomes in T cell Subsets from Peripheral Blood and Tissues

<b>10:45 – 11:00</b>	<b>Bethany Horsburgh</b>	<b>[20]</b>
	Intact HIV-1 provirus is enriched in effector memory and HLA-DR <sup>+</sup> memory CD4 <sup>+</sup> T cells	
<b>11:00 – 11:15</b>	<b>Carolyn Tumpach</b>	<b>[52]</b>
	High prevalence of CXCR4-using virus in long lived latently infected naïve and central memory CD4 <sup>+</sup> T cells in individuals on ART	
<b>11:15 – 11:30</b>	<b>Jenny Anderson</b>	<b>[4]</b>
	CCR6 <sup>+</sup> rectal CD4 <sup>+</sup> T-cells are a significant reservoir in HIV-infected individuals on ART	
<b>11:30 – 11:45</b>	<b>Michael Roche</b>	<b>[47]</b>
	The circadian transcription factors CLOCK and BMAL1 activate HIV transcription through the viral Long Terminal Repeat	
<b>11:45 – 12:00</b>	<b>Youry Kim</b>	<b>[23]</b>
	Evaluation of PI3K inhibitors as a strategy to eliminate latently infected CD4 <sup>+</sup> T-cells	
<b>12:00 – 12:15</b>	<b>Damian Purcell</b>	<b>[42]</b>
	Discovery of new HIV latency reversing agents that target novel gene expression pathways	

**10:30 – 11:45**

## **Cabernet**

### **Concurrent Session 2**

#### **Hepatitis Virus-Host Interactions**

**Chairs: Nick Eyre and Nick Shackel**

<b>10:30 – 10:45</b>	<b>Byron Shue</b>	<b>[51]</b>
	Identification of novel host factors critical for HCV replication using a CRISPR/Cas9 genome-wide KO screen	
<b>10:45 – 11:00</b>	<b>Mustafa Najim</b>	<b>[30]</b>
	Transmembrane 6 superfamily member 2 (TM6SF2) is involved in Hepatitis C virus (HCV) replication	
<b>11:00 – 11:15</b>	<b>Colt Nash</b>	<b>[31]</b>
	Single Cell Analysis of Interferon- $\alpha$ Stimulation and Hepatitis C Virus Infection	
<b>11:15 – 11:30</b>	<b>Zina Valaydon</b>	<b>[55]</b>
	Type 1 interferon is a key mediator of early viral suppression on basal core promoter and precore variants of Hepatitis B	

<b>11:30 – 11:45</b>	<b>Magdalena Budzinska</b>	<b>[9]</b>
	Analysis of HBV DNA integration events in HBeAg-positive and -negative patients	
<b>11:45 – 12:15</b>	Break	
<b>12:15 – 13:00</b>	<b>The Cellar Kitchen</b>	
	<b>Lunch</b>	
	<b>The Cellar Kitchen</b>	
	<b>Lunch with international guests</b>	
	<b>Semillon B</b>	
	<b>ACH<sup>2</sup> Executive Meeting &amp; Working Lunch</b>	
<b>13:00 – 14:30</b>	<b>Shiraz</b>	
	<b>Concurrent Session 3</b>	
	<b>HIV-Host Interaction</b>	
	<b>Chairs: Stuart Turville and Jenny Anderson</b>	
<b>13:00 – 13:15</b>	<b>Najla Nasr</b>	<b>[32]</b>
	Defining the role of HIV-1 accessory proteins in blocking interferon induction by dysregulation of TBK1	
<b>13:15 – 13:30</b>	<b>Alberto Ospina Stella</b>	<b>[34]</b>
	Resolving the intersection of HIV and F-ACTIN	
<b>13:30 – 13:45</b>	<b>Andrew Harman</b>	<b>[17]</b>
	Examining the Role of Human Mononuclear Phagocytes in Mediating Sexual Transmission of HIV	
<b>13:45 – 14:00</b>	<b>Hafsa Rana</b>	<b>[43]</b>
	Identification and Characterisation of Novel Human Epidermal Mononuclear Phagocyte Populations; Implications for Transmission of HIV	
<b>14:00 – 14:15</b>	<b>Jake Rhodes</b>	<b>[46]</b>
	Defining the Subsets of Mononuclear Phagocytes Present in Human Anogenital Tissue	
<b>14:15 – 14:30</b>	<b>Heeva Baharlou</b>	<b>[6]</b>
	An <i>in situ</i> Study to Define Early HIV Target Cells in the Human Anorectal Tract	

13:00 – 14:15

## Cabernet

### Concurrent Session 4

#### Hepatitis Virus Humoral Immunity

Chairs: Andrew Lloyd and Danushka Wijesundara

13:00 – 13:15

Melanie Walker

[57]

Characterising the interplay between viral evolution and the humoral immune response in early primary HCV infection

13:15 – 13:30

Michael Mina

[28]

Anti-envelope antibody responses in highly-exposed seronegative individuals may be associated with protection from HCV infection

13:30 – 13:45

Alex Underwood

[54]

Identification of Novel HCV-specific Epitopes That Induce Broad Neutralising Antibodies

13:45 – 14:00

Nicholas Brasher

[8]

Understanding the immunodominance of B cell epitopes in primary hepatitis C virus infection

14:00 – 14:15

Bing-Ru Wu

[63]

Identification and characterisation of HCV-specific B cells using E2 envelope tetramers

14:15 – 14:30

Penelope Adamson

[1]

Characterisation of serum antibody variable-region repertoires following Hepatitis B (HBV) vaccination

14:30 – 15:00

## Pre-Function Area

### Afternoon Tea

15:00 – 16:15

## Shiraz

### Concurrent Session 5

#### Monocytes, Macrophages and NK Cells in HIV Pathogenesis

Chairs: Anna Hearps and Anupriya Aggarwal

15:00 - 15:15

Michelle Wong

[62]

Persistence of HIV DNA in monocytes from virologically suppressed HIV+ individuals

<b>15:15 – 15:30</b>	<b>Noémi Anna Nagy</b>	<b>[29]</b>
	Evaluating monocyte mitochondrial dysfunction and inflammation biomarkers in frail older HIV+ men in Melbourne Australia	
<b>15:30 – 15:45</b>	<b>Riya Palchaudhuri</b>	<b>[35]</b>
	Evaluating monocyte metabolic activation and mitochondrial changes in frail older HIV+ men in Melbourne Australia	
<b>15:45 – 16:00</b>	<b>Srihari Parise</b>	<b>[37]</b>
	Do Natural Killer Cells Mediate Killing of HIV-infected Macrophages by Natural Cytotoxicity?	

**16:00 – 16:15** Break

**15:00 – 16:15** **Cabernet**

## Concurrent Session 6

### Hepatitis Virus Replication Cycles and Model Systems

Chairs: Margaret Littlejohn and Auda Eltahla

<b>15:00 - 15:15</b>	<b>Nicholas Eyre</b>	<b>[13]</b>
	Sensitive luminescent reporter viruses reveal appreciable release of hepatitis C virus NS5A protein into the extracellular environment	
<b>15:15 – 15:30</b>	<b>Thao Huynh</b>	<b>[21]</b>
	Investigating replication capacity of HBV variants using a 1-mer system	
<b>15:30 – 15:45</b>	<b>Julie Nigro</b>	<b>[33]</b>
	<i>Ex vivo</i> 3-dimensional liver organoids as a novel model for chronic hepatitis B	
<b>15:45 – 16:00</b>	<b>Ciccy Wang</b>	<b>[58]</b>
	A study of HBV infection in vitro using the HepG2-NTCP cell culture model	
<b>16:00 – 16:15</b>	<b>Jackie Yu</b>	<b>[64]</b>
	Modelling chronic hepatitis B induced hepatocellular carcinoma using <i>ex vivo</i> 3D liver organoids	

**16:15 – 16:30** **Break**

**16:30 – 17:45** **Shiraz**

## Joint session 4

## Developments of Diagnostics

Chairs: David Anderson and Scott Bowden

<b>16:30-16:45</b>	<b>Francois Lamoury</b>	<b>[25]</b>
	Hepatitis C virus core antigen as simplified hepatitis C virus diagnostic tools	
<b>16:45-17:00</b>	<b>Tanya Applegate</b>	<b>[5]</b>
	Evaluation of the Xpert® HCV Viral Load point-of-care assay from venipuncture-collected and finger-stick capillary whole-blood samples: A prospective study	
<b>17:00-17:15</b>	<b>Huy Van</b>	<b>[56]</b>
	An immunochromatographic test for measurement of Alanine Aminotransferase (ALT) at point-of-care	
<b>17:15-17:30</b>	<b>Clovis Palmer</b>	<b>[36]</b>
	Glut1 SNP to predict HIV disease progression and immune functions in people living with HIV infection	
<b>17:30-17:45</b>	<b>Sofia Bartlett</b>	<b>[66]</b>
	Methods for sequencing of hepatitis C virus to detect direct-acting antiviral resistance: Systematic review & expert guidance	
<b>17:45-18:45</b>	<b>Free Time</b>	
<b>18:45</b>	<b>Coaches depart for Chateau Tanunda</b>	
<b>19:00</b>	<b>Pre-Dinner Drinks</b>	
<b>19:30</b>	<b>Dinner</b>	
<b>22:30</b>	<b>First Coach departs Chateau Tanunda</b>	
<b>23:00</b>	<b>Last Coach departs Chateau Tanunda</b>	



## Day Three: Friday, 9<sup>th</sup> June 2017

07:00 – 08:30

### The Cellar Kitchen

#### Breakfast

08:30 – 9:15

### Shiraz

#### Special Guest Speaker

Chair: Gilda Tachedjian

Professor Alan Landay

Title: HIV and the Microbiome

09:15 – 09:45

### Joint Session 5

#### Microbicides

Chairs: Andrew Harman and Najla Nasr

09:15 – 09:30

David Tyssen

[53]

Lactic acid and its role in the intrinsic anti-HIV properties of cervicovaginal fluid

09:30 – 09:45

Anna Hearps

[19]

Vaginal lactic acid elicits an anti-inflammatory response from human cervicovaginal epithelial cells and inhibits production of pro-inflammatory mediators associated with HIV acquisition

9:45 – 10:15

### Pre-Function Area

#### Morning Tea

10:15 – 11:45

### Shiraz

#### Concurrent Session 7

#### Antiviral Therapeutics

Chairs: Brian McMahon and Tanya Applegate

10:15 – 10:30

Darren Wong

[61]

On-treatment ALT flares are associated with HBsAg loss in genotype A chronic hepatitis B-infected subjects treated with nucleotide analogue therapy

10:30 – 10:45

Stephen Headey

[18]

Developing high affinity inhibitors of LEDGF-integrase interaction

**10:45 – 11:00**      **Adam Johnson**      **[22]**

New drug classes for HIV: Allosteric inhibitors targeting novel sites on HIV-1 reverse transcriptase

**11:00 – 11:15**      **Rebecca Pavlos (EoI Update)**      **[38]**

Variation In ERAP Influences Risk For HLA-B\*57:01 Positive Abacavir Hypersensitivity

**11:15 – 11:30**      **Andrew Wong**      **[60]**

Design of a Gene Therapy Particle to Functionally Cure of HIV-1

**11:30 – 11:45**      **Break**

**10:15 – 12:00**      **Cabernet**

## Concurrent Session 8

### Novel Vaccine Strategies for Hepatitis and HIV

Chairs: Andy Pombourios and Branka Grubor-Bauk

**10:15 – 10:30**      **Heidi Drummer**      **[12]**

Refolding the HCV E2 glycoprotein for vaccine production

**10:30 – 10:45**      **Makutiro Masavuli**      **[27]**

Novel DNA vaccine formulations encoding secreted HCV-E1/E2 fused to the IMX313 oligomerisation domain are immunogenic in mice

**10:45 – 11:00**      **Danushka Kumara Wijesundara**      **[59]**

A novel mucosal HIV vaccination regimen to elicit protective HIV-specific immunity

**11:00 – 11:15**      **Hannah King**      **[15]**

Introduction of a novel glycan deletion mutation into a Transmitter/Founder HIV Envelope protein enhances exposure of a major bNAbs epitope

**11:15 – 11:30**      **Natalia Salazar-Quiroz**      **[49]**

Characterisation of the antibody response in cows elicited by different HIV Envelope gp140 vaccine regimens

**11:30 – 11:45**      **Damian Purcell**      **[41]**

Evolution of anti-HIV bovine neutralising antibodies

**11:45 – 12:00**      **Bruce Wines**      **[65]**

Novel methods for predicting the FcR-dependent effector function of anti-HIV

envelope antibodies

**12:00 – 13:00**

**The Cellar Kitchen**

**Lunch**

**13:00 – 13:45**

**Shiraz**

**13:15 – 13:30**

**Awards Presentation**

**13:30 – 13:45**

**Closing Remarks**

Tony Cunningham

**13:45-14:15**

**Pre-Function Area**

**Collect boxed afternoon tea and board Coaches**

**14:15**

**Coaches depart for Adelaide Airport**

