



HARRY PERKINS INSTITUTE  
OF MEDICAL RESEARCH



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## PERKINS Seminar Series

MONDAY 6 JUNE



### Professor Nikolai Petrovsky

Director of Endocrinology, Flinders Medical Centre  
Professor of Medicine, Flinders University

**"Study of rare childhood obesity syndromes provides unique insights into insulin signalling pathways and the origins of type 2 diabetes"**

Nikolai Petrovsky is Professor at Flinders University and Director of Endocrinology at Flinders Medical Centre. He completed his

FRACP at the Royal Melbourne Hospital and a PhD on type 1 diabetes and immune regulation with Professor Len Harrison at the Walter and Eliza Hall Institute/University of Melbourne. He is a past councillor of the Australian Diabetes Society and an investigator on highly cited trials shaping current diabetes practice including ADVANCE, FIELD, DREAM and DIRECT. In addition to diabetes, his vaccine research has attracted over 25 million dollars of funding from the US National Institutes of Health.

The *Fat Aussie* mouse strain occurred as a spontaneous autosomal recessive mutation in a colony of non-obese diabetic mice being used for type 1 diabetes studies. Mapping studies confirmed the phenotype was due to a truncating mutation in the Alstrom syndrome gene, *Alms1*. *Fat Aussie* mice develop obesity, insulin resistance, hypercholesterolaemia and hepatic steatosis, closely mirroring the phenotype of children with Alstrom syndrome. *Alms1* is an extremely large protein of 350-450kD with low cellular expression and low homology to other proteins, which has made it problematic to study. Using novel approaches including *in silico* structural modelling, we found that *Alms1* is a hitherto unrecognised critical member of the insulin-signalling pathway. We have subsequently developed novel therapeutic strategies targeting *Alms1* to reverse hyperglycaemia in an insulin-independent manner. We are currently using this new knowledge of *Alms1* function to develop novel treatments for retinopathy and fatty liver disease, amongst others.

4:30pm till 5:30pm

SEMINAR ROOM G24, HARRY PERKINS INSTITUTE OF MEDICAL RESEARCH,  
NORTH CAMPUS

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3

4

5

Aberdare Rd

To Perth

A

Your Guide to the



HARRY PERKINS INSTITUTE OF MEDICAL RESEARCH

B

C

D

E

F

Compass St

Verdun St

Kingsdon St

Gairdner Dr

Hospital Ave

Winthrop Ave

Kings Park

Child Care  
Under Construction  
HH  
WW  
YY  
Q  
P  
PathWest  
M  
J  
JJ  
K  
Staff Car Park 6  
UWA Car Park

Under Construction  
Lions Eye Inst  
V  
R  
A  
G  
N  
L  
Z  
Staff Car Park 4  
HARRY PERKINS INSTITUTE  
PathWest  
Visitor Car Park 3A  
Western Power Sub Station  
Staff Car Park 3  
Staff Car Park 7A

CC  
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Main Entrance  
Main Entrance & Admissions  
EMERGENCY  
Waiting Walk  
Car Park 7B  
UWA Car Park

X  
Emergency Helipad  
Visitor Car Park 1  
Visitor and Staff Multi Deck Car Park  
(Entry off Winthrop Ave Only)  
To Harry Perkins  
Multi Deck Car Park Phase 2  
Under Construction (New Children's Hospital)  
To Stirling Hwy



Monash Ave