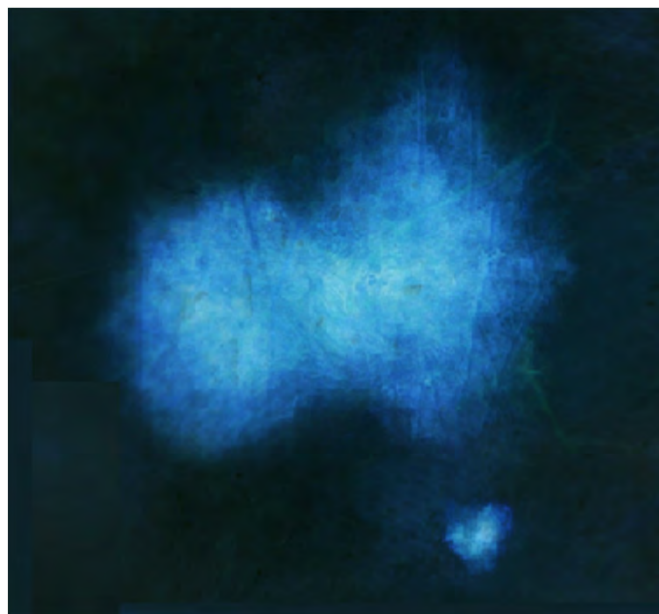


Targeted Early Detection of Melanoma Utilising a 3D Teledermatology (3DT) Network



Our Team



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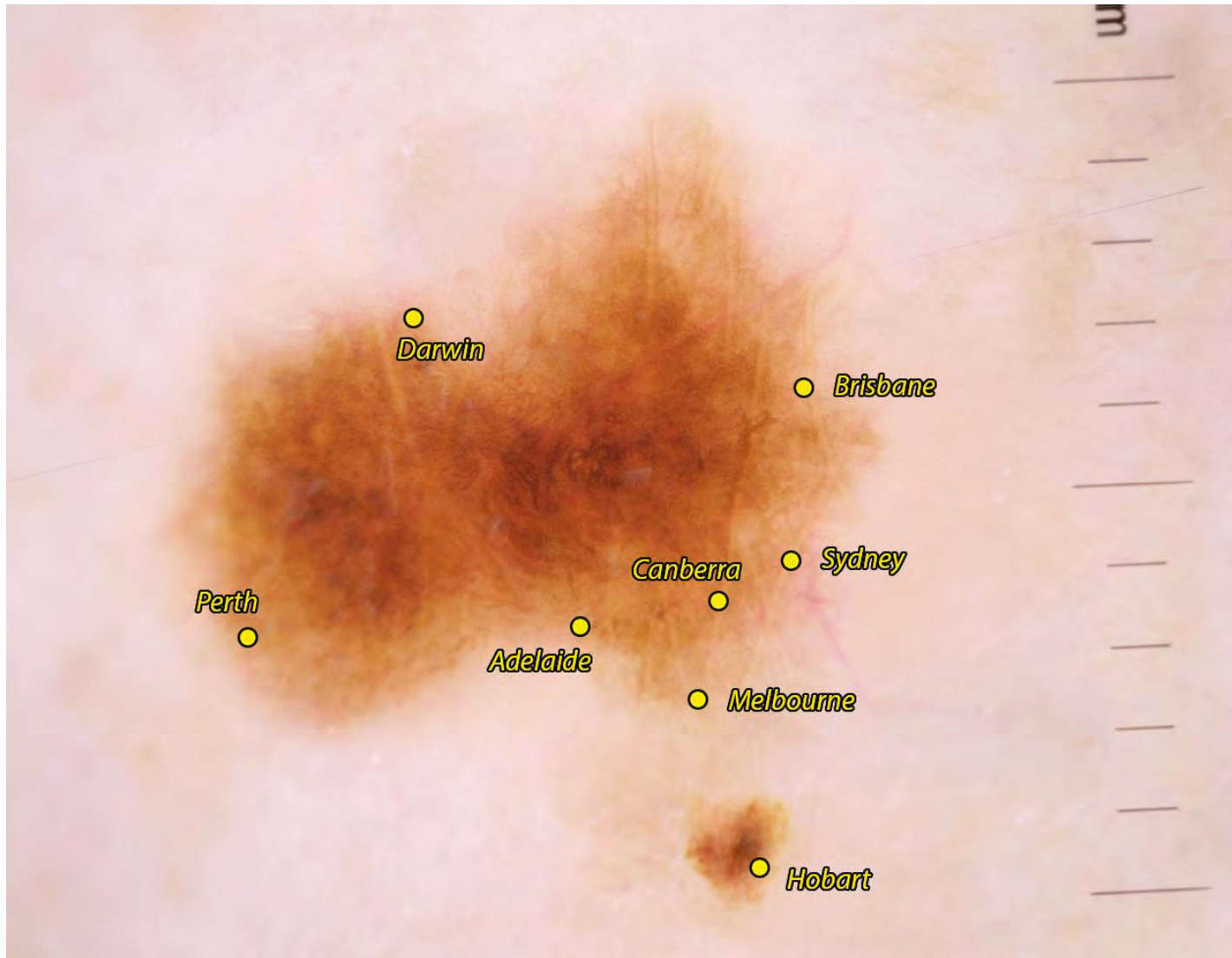


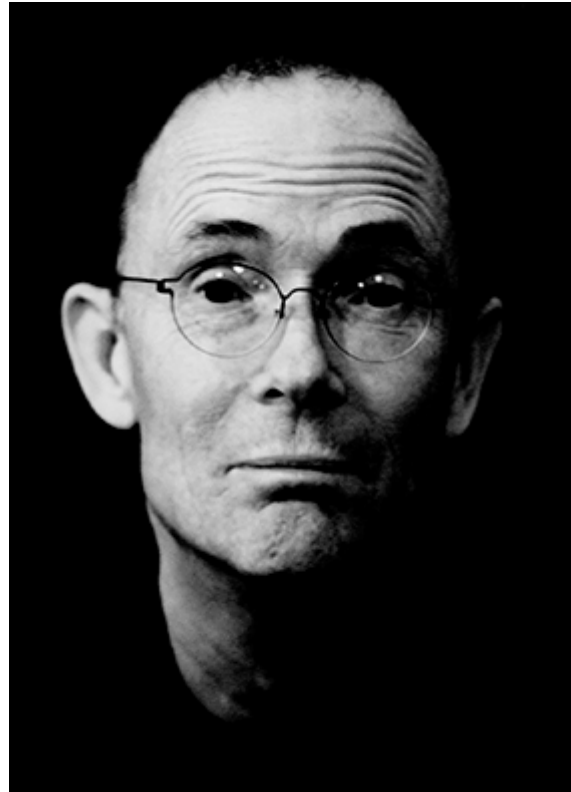
QIMR Berghofer
Medical Research Institute



Queensland
Government
Queensland Health







William
Gibson

The future is already here —
it's just not very evenly distributed

Vision



3D Telederm Network via PACS



Cognitive Computing



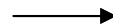
Protocol driven
Decision Support Systems
(AI)

will lead to
early intervention

Germline
genomics
will complement
phenotypic risk
assessment



Partner assisted skin self-examination









Why now?

We are at a timely junction
regarding developments in
genomics, imaging technology
and artificial intelligence.

Why us?



- Health service expertise from PAH and Townsville
- Epidemiological expertise from QIMRB, CCQ 
- Dermatological expertise from UQ, PAH
- Telehealth expertise from PAH, UQ
- Genomic expertise -- Queensland Genomic Health Alliance 
- Behavioural psychology expertise from QUT, CCQ 
- Consumer engagement and translational expertise from CCQ, PAH, Princess Alexandra Research Foundation (PA Research Foundation) 
- Health Economic expertise from UQ  

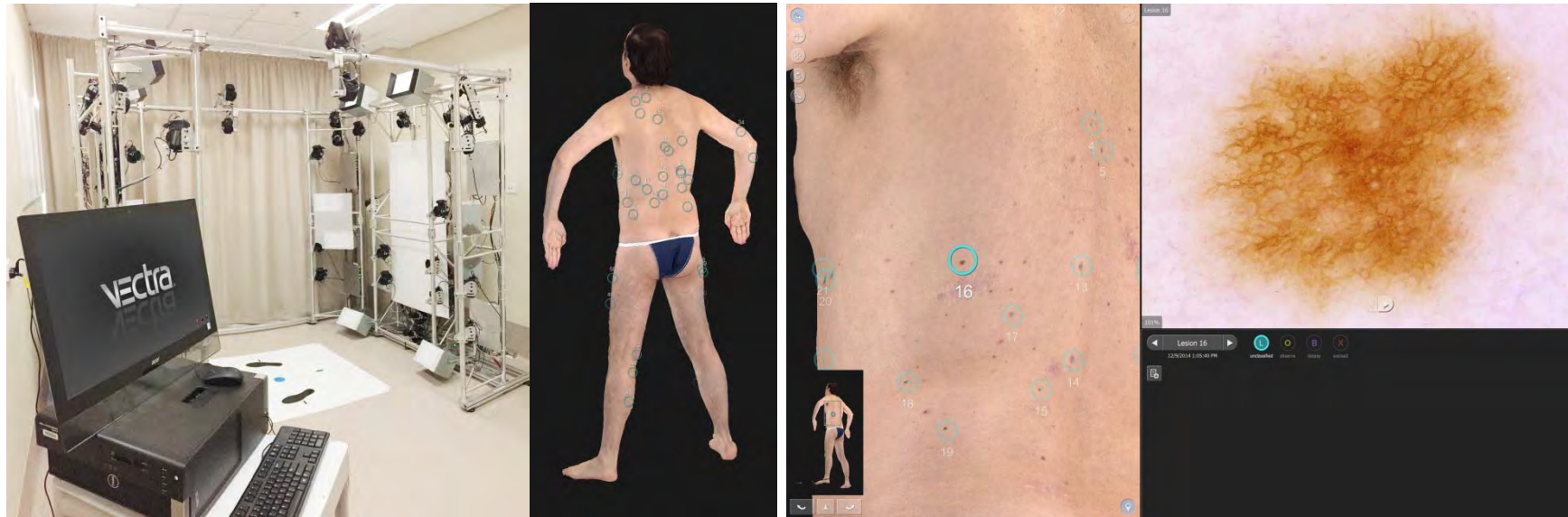
World-class capability to deliver better outcomes for patients

1. State-of-the-Art Imaging Platforms
 2. Optimised, Targeted and Regional Early Detection
 3. Next Generation Genomics
 4. Descriptive Data Analysis
 5. Network Health Economic Evaluation
 6. Partnership Development
-

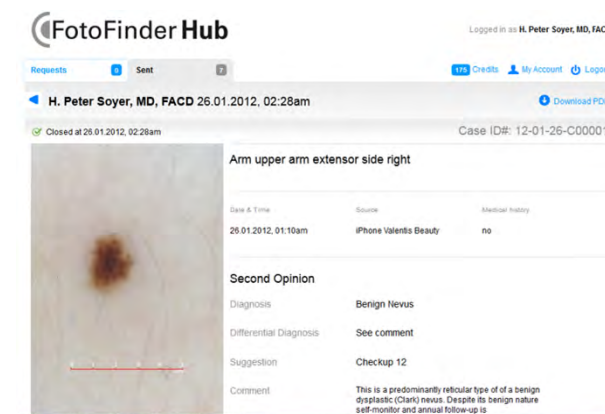
3D Total Body Imaging



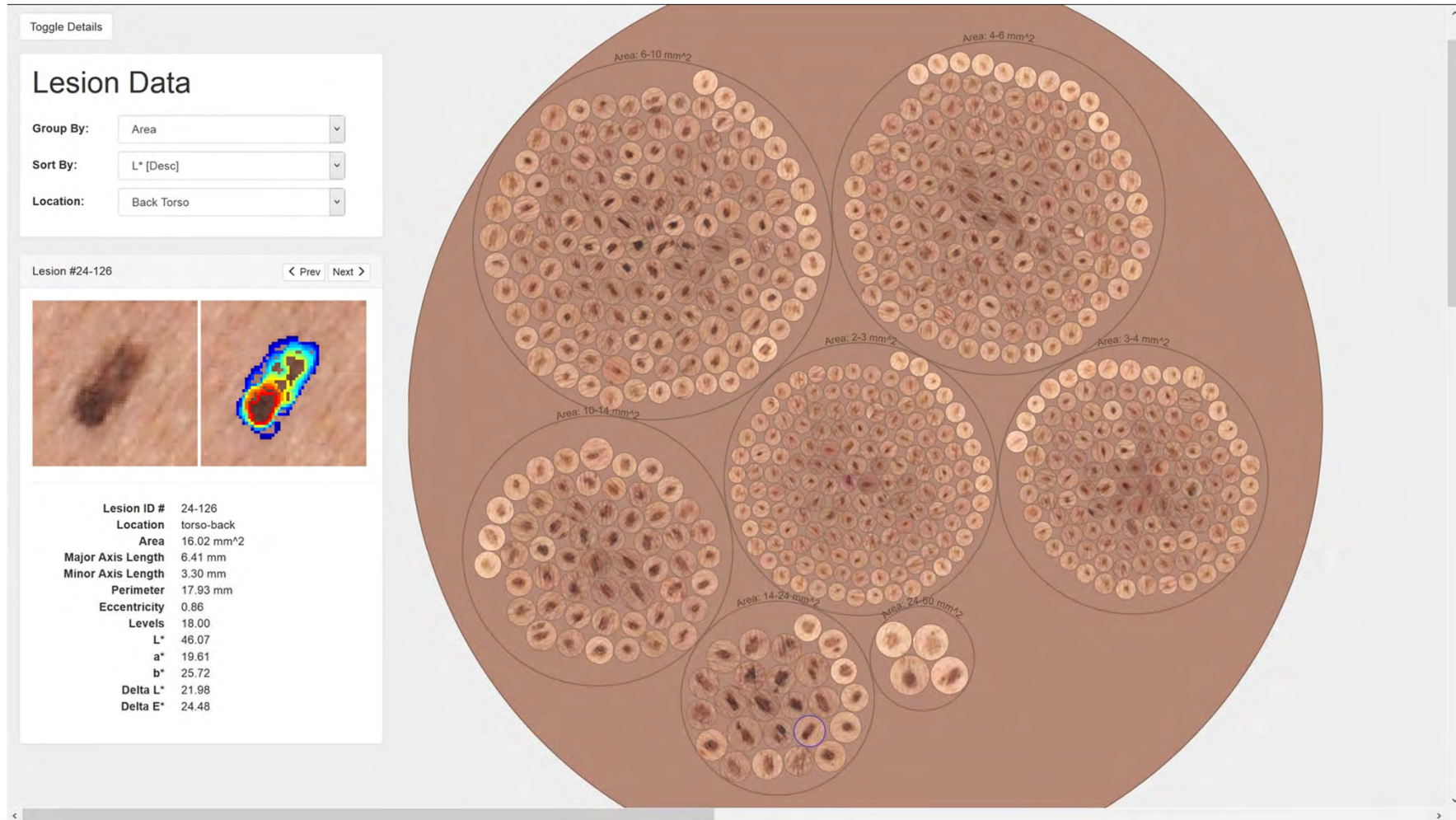
3D Total Body Imaging & Mobile Dermoscopy



Vectra imaging system set-up, digital 3D model and the photographic quality achieved

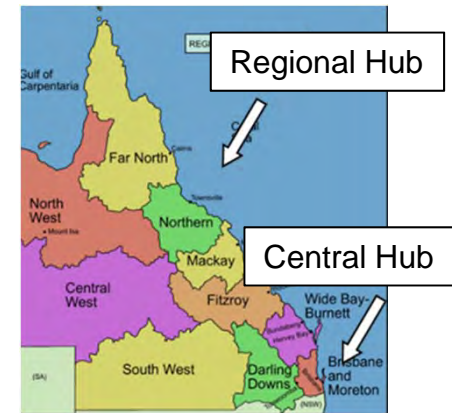


Automated Image Analysis by Naevus Size




Effectiveness of Total Body 3D imaging for early detection of melanoma


- Prospective clinical cohort surveillance study
- Includes:
 - individuals at high risk of developing melanoma based on phenotypic criteria
 - have a personal or family melanoma history*
- 300-500 high risk individuals across Brisbane (Central Hub) & Townsville (Regional Hub)
- All dermatological & pathological data feeding back into the research program
- **Optimise patient care & create an unprecedented resource and database for melanoma research and innovation.**
- Between 20-30% of the individuals involved will also be seen face-to-face by dermatologically trained physicians to enable validation of the teliagnosis



*Individual risk will be estimated using existing risk prediction tools validated by the research team at QIMR Berghofer Medical Research Institute (QIMRB), which incorporate self-reported data on phenotypic characteristics and medical history.



welcome
to you

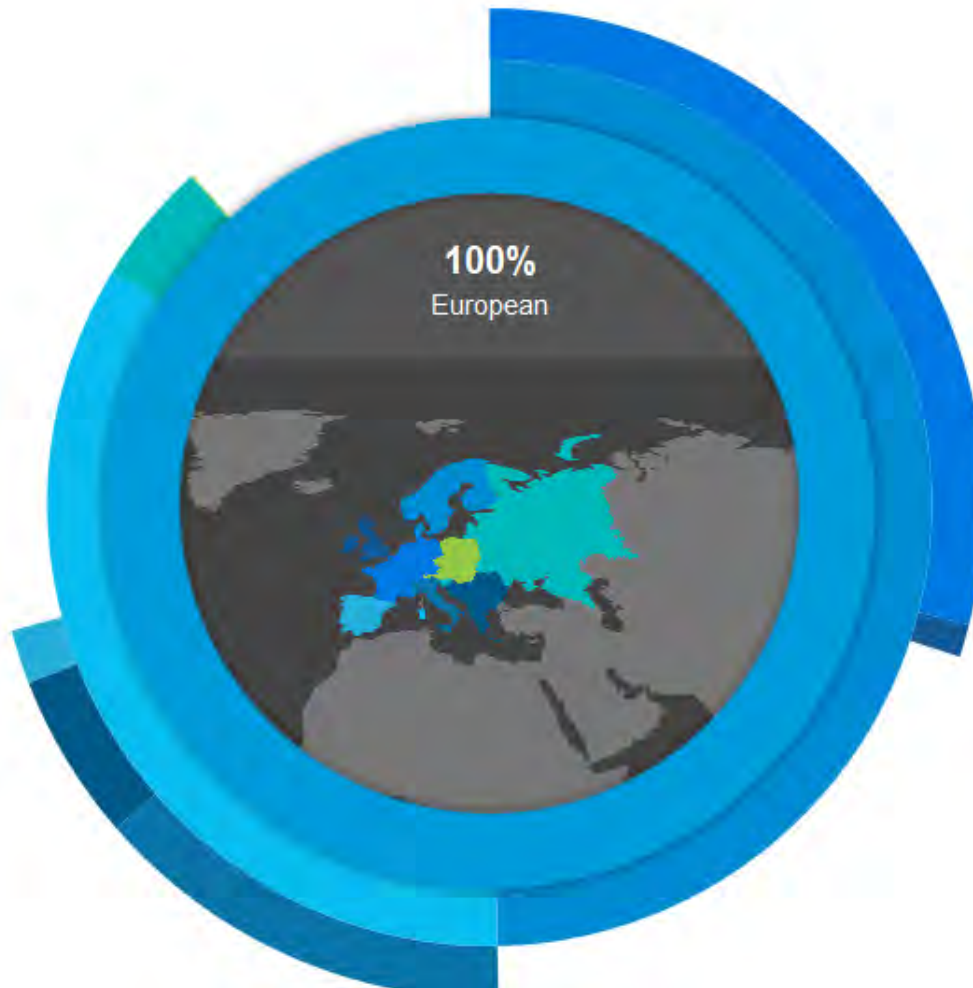
 23andMe

Find out what your DNA says about you and your family.

- Learn what percent of your DNA is from populations around the world
- Contact your DNA relatives across continents or across the street
- Build your family tree and enhance your experience with relatives

[order now](#) **\$99**

received from all of your recent ancestors, on both sides of your family. The results reflect where your ancestors lived before the widespread migrations of the past few hundred years.




100% H. Peter Soyer

[show all populations](#)



INHERITED CONDITIONS

 23andMe Research Discoveries were made possible by 23andMe members who took surveys.

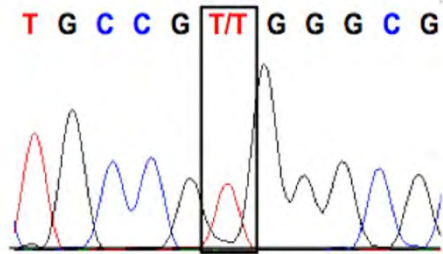
SHOW RESULTS FOR

[SEE NEW AND RECENTLY UPDATED REPORTS »](#)

These reports show your results for specific genetic variants that can cause certain health conditions. Many of these conditions are recessive, meaning that they only occur when you have two variants for that condition, one inherited from each parent. If you have inherited just one variant, you are said to be a "carrier". Carriers usually do not have the condition, but can pass the variant on to their children. Note that these reports cover only a subset of possible variants that may be linked to a condition. It is thus possible to have other variants not covered by these reports.

NAME	CONFIDENCE	STATUS
Hemochromatosis (HFE-related)	★★★★★	Variant Present
ARSACS	★★★★★	Variant Absent
Agenesis of the Corpus Callosum with Peripheral Neuropathy (ACCPN)	★★★★★	Variant Absent
Alpha-1 Antitrypsin Deficiency	★★★★★	Variant Absent
Autosomal Recessive Polycystic Kidney Disease	★★★★★	Variant Absent
BRCA Cancer Mutations (Selected)	★★★★★	Variant Absent
Beta Thalassemia	★★★★★	Variant Absent

Sanger Sequencing MC1R Genotyping

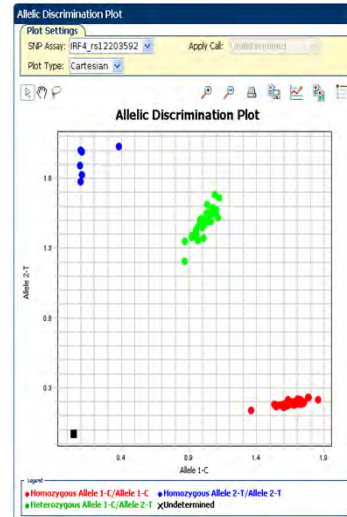


Whole Exome Sequencing (WES)



Genotyping platforms

Sequenom and Taqman based SNP Genotyping



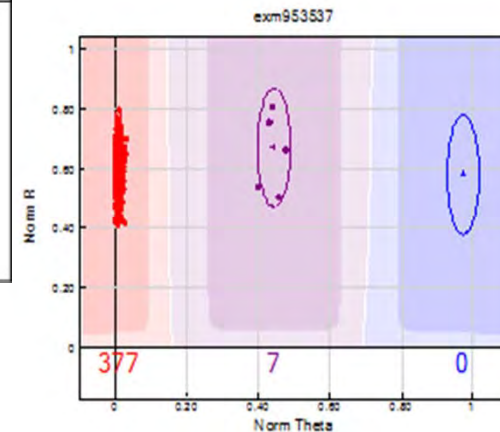
Gen	rs	Chr	Nucleotide Change	Protein Change	
SLC45A2	rs16891982	5	c.1122 G>C	TTC>TTG	p.Phe374Leu
HERC2	rs12913832	15	c.13272+874T>C	-	-
SLC24A5	rs1426654	15	c.331A>G	ACA>GAC	p.Thr111Ala
IRF4	rs12203592	6	c.492+386 C>T	-	-
OPN/SPP1	rs11730582	4	g.88896421T>C	-	-
OGG1	rs1052133	3	c.977C>G	TCC>TGC	p.Ser326Cys
GSTP1	rs1695	11	c.313A>G	ATC>GTC	p.Ile105Val
MITF	rs149617956	3	c.952G>A	GAA>AAA	p.Glu318Lys
TYR	rs1042602	11	c.575C>A	TCT>TAT	p.Ser192Tyr
TYR	rs1126809	11	c.1205G>A	CGA>CAA	p.Arg402Gln

Illumina CoreExome 500,000 SNPs

Figure 1: HumanCoreExome-24 BeadChip



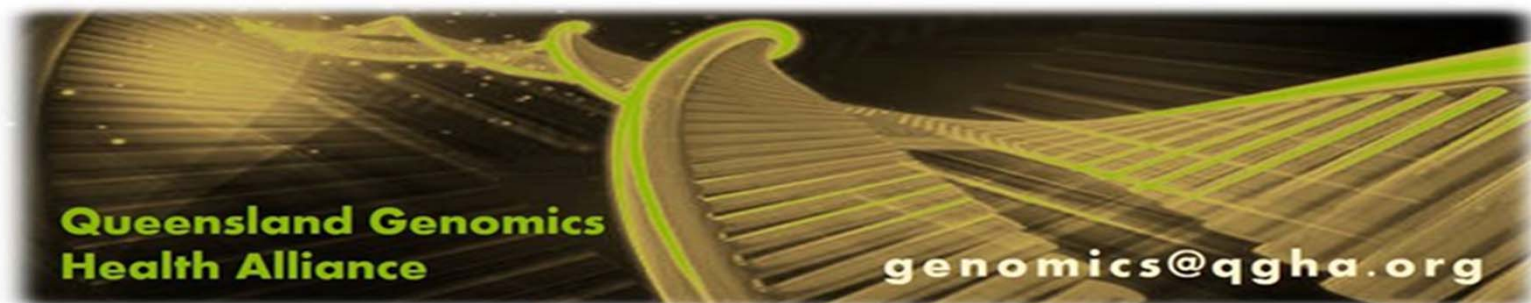
The HumanCoreExome-24 BeadChip enables informative genotyping of tag SNP and exome-focused markers across diverse world populations, delivering high-quality data that can be used in various downstream applications.



Queensland Future Genomics Health Hub



- State Government has provided support to establish the Queensland Genomics Health Alliance (QGHA).
- QGHA is a patient-centred and clinically-led entity that will develop and empower a community of genomics professionals who will drive interest, learning and dialogue in genomics and its clinical application



Outcomes and Benefits for Queensland



- Path with tangible benefits to melanoma management, and to the lives of Queenslanders
 - Cost savings and workforce benefits for Queensland, including the regions
 - Alignment with:
 - Queensland Science and Research Priorities & Advance Queensland Initiatives
 - Queensland Health Focus
 - Queensland Government's Initiative: Envisioning our digITal future
 - Inquiry into Skin Cancer in Australia
-



9th World Congress of **MELANOMA**



18–21 October 2017, Brisbane
Australia



brisbane
australia's new world city

