

PNG IMPACT

RESEARCH · INNOVATION · SOCIETY

2017 Conference Program & Abstracts

12-13 December 2017

Co-hosted by the University of Papua New Guinea and James Cook University at
UPNG, Waigani Campus



UPNG/JCU Twinning Project
Collaborating to advance life in the tropics

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Welcome from the

PNG IMPACT CO-CONVENORS

Dr Anna Joskin and Distinguished Professor Stewart Lockie

Conference Program Committee

<i>The University of Papua New Guinea</i>	<i>James Cook University</i>
Dr Anna Joskin	Distinguished Professor Stewart Lockie
Associate Professor Victor Temple	Dr Amy Diedrich
	Professor Rosita Henry

Conference Working Committee

Dr Anna Joskin	Mr Gabriel Porolak	Mr Isaac Manu	Mr Jim Robins
Assoc. Prof. Victor Temple	Ms JoAnne Meria	Ms Joyce Mark	Mr Don Rauweu
Ms Imelda Atu	Mr Ronald Raka	Mr Vele Kila	Mr Ravu Geno
Ms Leah Kalamoroh	Mr Matthew Kippot	Ms Grace Guaigu	

ABOUT PNG IMPACT

Research and education across all disciplines are essential to realizing global and national commitments to sustainable development. Knowledge, design and innovation are as important to governance, peace, safety, health and environmental integrity as they are to economic growth and poverty alleviation. As ICT, energy and bio- technologies transform the ways in which people interact, move and work, worldwide, new opportunities are emerging, both to utilize and to protect, PNG's unique human and natural endowments.

Capitalizing on these opportunities will require more than simply doing more research. At **PNG IMPACT**, speakers and delegates will consider how research can be designed, coordinated and communicated to deliver more societal benefit. Recognizing that no one approach is relevant across all disciplines and issues, case studies will be presented from a diversity of perspectives, with ample time dedicated to dialogue and networking.

PNG IMPACT will:

- Showcase a cross-selection of active research projects, across the sciences, social sciences and humanities, delivering significant societal benefits for PNG.
- Promote dialogue concerning how research and research policy can best support aspirations for a safe, inclusive and sustainable society.
- Provide a platform for network-building among researchers, research institutions and research stakeholders who are active in PNG.

The conference sub-themes for 2017 are:

INNOVATION LAB ONE

- Livelihoods, Agriculture and Fisheries
- Livelihoods and Community Development
- Human Capital and Labour

INNOVATION LAB TWO

- Governance and Nation Building
- Peace and Well-being
- Economic Development

INNOVATION LAB THREE

- Education: Access and Impact
- Education: Curriculum and Innovation
- Inclusive Research

INNOVATION LAB FOUR

- Ecology
- Wildlife Conservation and Management
- Infrastructure in the 21st Century

INNOVATION LAB FIVE

- Innovation in health service delivery
- Health, culture and behaviour
- Population health

INNOVATION LAB SIX

- Clinical skills
- Drug Development and Quality
- Medicine

CONFERENCE PROGRAM

DAY ONE - TUESDAY 12 DECEMBER, PNG IMPACT RESEARCH SHOWCASE

7:30–9:00 *Registration desk open & music and dancing*

9:00–10:30 OPENING SESSION Co-Chairs: Dr Anna Joskin

9:00–9:05 **Prayer** with Pastor George Paki

9:05–9:15 **Conferencing opening and acknowledgements** by PNG IMPACT Co-conveners Dr. Anna Joskin and Professor Stewart Lockie

9:15–9:25 **A welcome to Papua New Guinea** from the Hon. Pila Niningi, MP, Minister for Higher Education, Research, Science, and Technology

9:25–9:35 **A welcome to the University of Papua New Guinea** from UPNG's Acting Vice-Chancellor, Vincent Malaibe

9:35–9:45 **Supporting higher education and research capacity in PNG** by Ms Bronte Moules, Deputy Australian High Commissioner to PNG

9:45–10:30 **Opening Keynote: Research and innovation for societal impact in PNG: priorities, successes and opportunities** by Professor Teatulohi Matainaho, Chairman/Chief Executive Officer of PNG Science and Technology Council

10:30–11:00 Morning tea

11:00–12:30 SESSION 2 Chair: Professor Nakapi Tefuarani

11:00–11:20 **Health research in PNG and its impact on disease outcomes** by Dr. Willie Pomat, Deputy Director, Science and Research and Head of Infection and Immunity Unit, Papua New Guinea Institute of Medical Research

11:20–11:40 **Back to Basics: The role of human resource management in the PNG health sector** by Professor Maxine Whittaker, Dean, Public Health, Medical and Veterinary Sciences, James Cook University

11:40–12:20 **Questions and discussion**

12:20–12:30 **Screening: Skin has Eyes and Ears**
by Professor Rosita Henry and Dr Daniela Vavrova

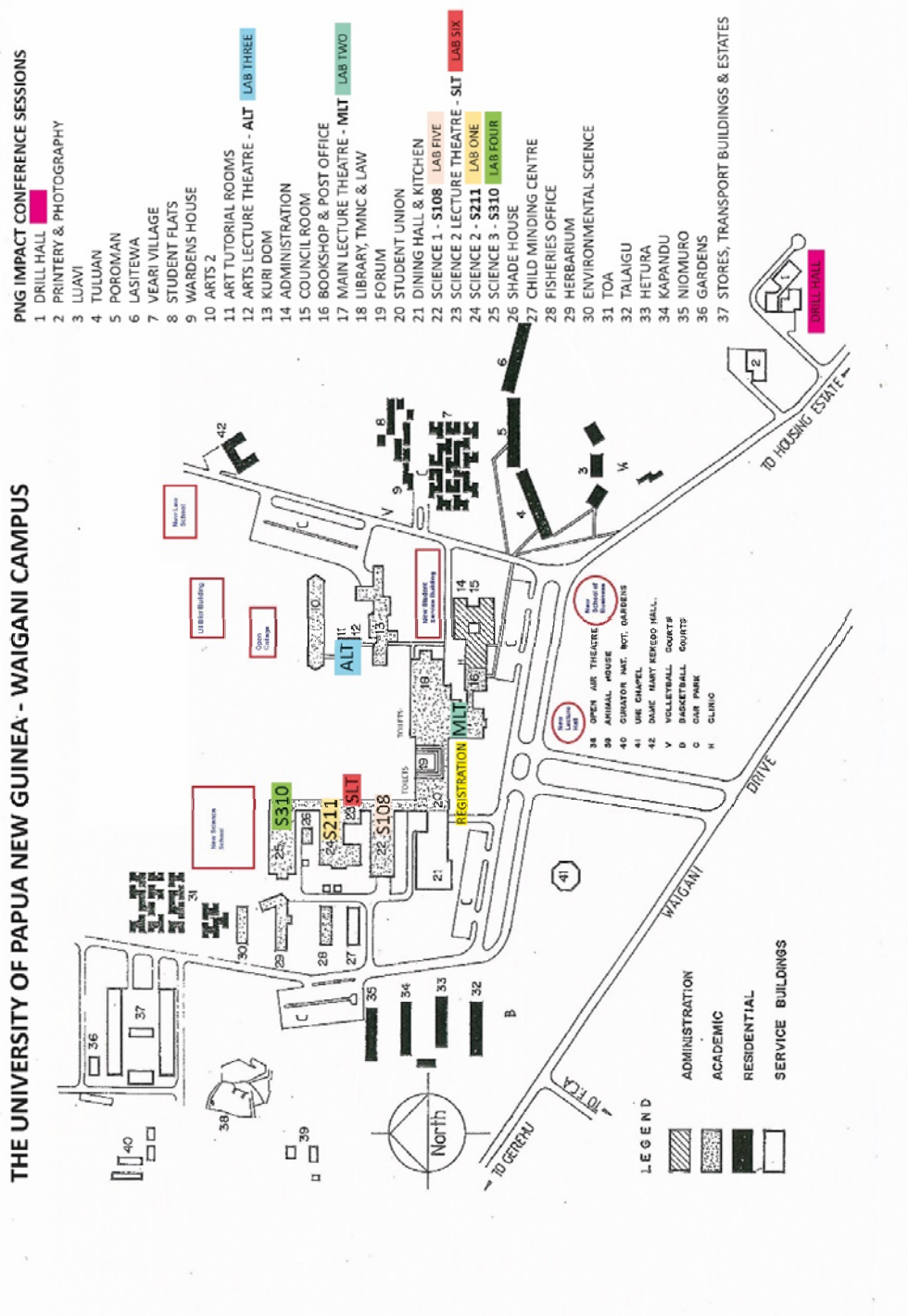
12:30–1:30 Lunch

1:30–3:00	SESSION 3	Chair: Professor Lekshmi N. Pillai
1:30–1:50	Developing context – Specific Fundamental Knowledge to Support Sustainable Development and the Role of Local Expert Partnerships by <i>Professor Marcus Sheaves, Head of Marine Biology and Aquaculture, James Cook University</i>	
1:50–2:10	The twinning project and collaborative research in PNG: A view from archaeology by <i>Dr. Matthew Leavesley, Senior Lecturer, Archaeology and Anthropology, School of Humanities and Social Sciences, The University of Papua New Guinea.</i>	
2:10–2:30	The land of 1000 voices: The impact of linguistic research in PNG by <i>Professor Alexandra Aikhenvald, College of Arts and Society and Education, James Cook University</i>	
2:30–2:50	Research and Innovation for societal impact in PNG: Priorities and opportunities for building a safe society by <i>Dr. Fiona Hukula, Senior Research Fellow and Building Safer Communities Program Leader at the PNG National Research Institute</i>	
2:50–3:00	Questions and discussion	
3:00–3:30	Afternoon tea	
3:30–5:00	SESSION 4	Chair: Professor Betty Lovai
3:30–4:40	Panel and open discussion: <i>Building partnerships and capacity for research and innovation.</i>	
4:40–5:00	Closing remarks & synopsis	Professors Steven Winduo, <i>Director of Academic Audit Unit, UPNG</i> & Robyn McGuiggan, <i>Deputy Vice-Chancellor, Global Strategy and Engagement, JCU</i>
5:00–6:30	Break	
6:30–9.00pm	Cocktail reception by <i>INVITATION ONLY</i> hosted by The University of Papua New Guinea and the Lowy Institute, at the UPNG Drill Hall.	

DAY TWO - WEDNESDAY 13 DECEMBER 2017, PNG IMPACT INNOVATION LABS

8:00–9:00	<i>Registration desk open at the Main Lecture Theatre</i>					
	Lab One	Lab Two	Lab Three	Lab Four	Lab Five	Lab Six
VENUE	<i>Science 2 Building (S211)</i>	<i>Main Lecture Theatre (MLT)</i>	<i>Arts Lecture Theatre (ALT)</i>	<i>Science 3 Building (S310)</i>	<i>Science 1 Building (S108)</i>	<i>Science Lecture Theatre (SLT)</i>
9.00 – 10:30	CONCURRENT SESSION 1					
	Livelihoods, agriculture and fisheries	Governance and nation building	Education: access and impact	Ecology	Innovation in health service delivery	Clinical skills
10:30–11:00	Morning tea					
11:00–12:30	CONCURRENT SESSION 2					
	Livelihoods and community development	<i>Peace and well-being</i>	Education: curriculum and innovation	Wildlife conservation and management	Health, culture & behaviour	Drug development and quality
12:30–1:30	Lunch					
1:30–3:00	CONCURRENT SESSION 3					
	Human capital & labour	Economic development	Inclusive research	Infrastructure in the 21st Century	Population health	Medicine
3:00–3:30	Afternoon tea					
3:30–5:00	MAIN LECTURE THEATRE	CLOSING PLENARY				
3:30–3:35		Opening remarks by chair and moderator <i>Professor Steven Winduo</i>				
3:35–4:30		Panel and open discussion: <i>Where to from here? Opportunities to build research impact</i>				
		Summation by <i>Professor Teatulohi Matainaho, Chairman and Chief Executive Officer, PNG Science and Technology Council</i>				
4:30–5:00		Closing ceremony by <i>Professors Steven Winduo, Director, Academic Audit Unit, UPNG, and Robyn McGuiggan, Deputy Vice-Chancellor Global Strategy and Engagement, JCU</i>				
5:00	CLOSE					
6.00-9.00	Cultural evening and dinner sponsored by the Australian High Commission at the Holiday Inn					

MAP OF THE UNIVERSITY OF PAPUA NEW GUINEA



KEYNOTE AND PLENARY SPEAKER PROFILES



Professor Alexander Aikhenvald is a Distinguished Professor within JCU's College of Arts, Society & Education's The Language and Culture Research Centre. When Distinguished Professor Aikhenvald worked in the East Sepik province of New Guinea she was fascinated to discover that the asset most prized by the people of the province was their name. In East Sepik, her name was important and valuable, but when she wanted to enroll in the classics department at a university in the old Soviet Union, her Jewish surname made her unacceptable. Instead she chose linguistics for its mathematical rhythms, crossword puzzle complexities and cultural idiosyncrasies. The decision was the catalyst for a prolific body of research that included Berber languages of North Africa and Hebrew but focused on tropical languages, predominantly those of Amazonia, the Papuan languages of New Guinea and Aboriginal Australia.



Dr Fiona Hukula is a Senior Research Fellow and Building Safer Communities Program Leader at NRI. She received a PhD in Social Anthropology and also holds a Masters in International Criminology and a BA in Anthropology.

Having started in 1998 at the NRI as a project research officer, Fiona is a career policy and social researcher with twenty years' experience. She has authored and co-authored various publications relating to law, justice and gender.

She has research interests in the area of urban studies, local-level dispute resolution and gender violence, was recently appointed as a Commissioner of the Constitutional Law Reform Commission and serves as a board member of Peace Foundation Melanesia.



Dr Anna Joskin is the 2017 PNG IMPACT Conference Co-convenor, and, currently the Acting Dean of Research & Postgraduate Centre at UPNG with a PhD in 'Education'; an MA in 'English Language Teaching' and a Postgraduate Diploma in 'TESOL'. Additionally, Anna has a *Graduate Certificate* in teaching 'Science Communication', a 'Bachelor of Education' (1997), and an 'Advance Diploma' & 'Diploma' in teaching language & literature in PNG secondary schools. This year, 2017 provides Anna with 31 years of experience as an educator in the contexts of teaching English as a subject in high and secondary schools, a primary teachers' college, a private secondary school, and currently, at UPNG.



Professor Andrew Krockenberger is the Dean of Research at James Cook University, with responsibilities in development of JCU's research environment, excellence and relevance. He has particular responsibility for strategic direction and operational performance of core research infrastructure. He graduated with a PhD in Zoology, received an Eleanor Sophia Wood Post-Doctoral Fellowship, and has worked in research and teaching at UNSW, University of Washington and JCU, with extensive experience in ecophysiology in the laboratory and the field. He has been strongly involved in the development of JCU's analytical and experimental facilities and field stations, particularly the Daintree Rainforest Observatory and is a Director of the Queensland Cyber-Infrastructure Foundation and serves on the Advisory Board for the Terrestrial Environmental Research Network



Distinguished Professor Stewart Lockie is the Director of JCU's Cairns Institute. He began his research career investigating the evolution and impacts of environmental policy in agriculture. This has since been extended to studies of biodiversity conservation, environmental standards, markets in ecosystem services, food security, coastal management, resource development, management of natural and industrial hazards, and so on. Professor Lockie is involved in numerous leadership activities both within and external to the University including as past-President of the International Sociological Association's Research Committee on Environment and Society and a member of the International Council for Science's Committee for Scientific Planning and Review.



Professor Betty Lovai is the Executive Dean of the School of Humanities and Social Sciences at The University of Papua New Guinea. Recruited as a teaching fellow in 1990 she has been there ever since. Betty has obtained a Masters degree in Social Policy and Administration and a PhD. Having served on numerous government committees such as the Constitutional and Law Reform Commission, the Police Review Committee set up by the Government to Review the Administrative Structure of the Royal Papua New Guinea Constabulary; the Guns Control Committee and more. Professor Lovai was also a recipient of 2010 US Secretary of State's International Women of Courage award in recognition of exceptional courage and leadership in human rights, gender equality and HIV and AIDS.



Mr Vincent Malaibe is the Pro Vice-Chancellor, Planning, Development and Industrial Relations, The University of Papua New Guinea (UPNG) and currently Acting Vice-Chancellor. He holds a Master of Science in Statistics and degree in Mathematics. Mr Malaibe has been associated with UPNG for 41 years and has 30 years of experience in lecturing and research in mathematics and statistics. He also brings 16 years of executive experience, has served as a member of all University Committees, is a member of the PNG Mathematical Society as well as served on external committees in Government, higher education and in relation to the development and teaching of mathematics.



Professor Teatulohi (Lohi) Matainaho is the Chairman and Chief Executive Officer of the PNG Science and Technology Council. As the Chief Science Advisor, he is tasked with coordination of scientific and technological advice to Government and informing on the vital role of research and innovation in achieving social, health, economic and environmental outcomes. He previously coordinated government research and development programs on biodiversity. Professor Matainaho completed his PhD in pharmacology, undertook postdoctoral work in malaria and had a short term at the US National Cancer Institute in natural products drug discovery. He had visiting appointments at the United States, Canada and Australia and has been professor of basic medical sciences and pharmacology and served as dean of research at UPNG.



Dr Matthew Leavesley is a Senior Lecturer in archaeology in the School of Humanities and Social Sciences at The University of Papua New Guinea with research interests around notions of prehistoric human adaptation(s) to depauperate/marginal environments with particular reference to case studies in Papua New Guinea (PNG).

Matthew has participated in projects situated in New Ireland, East New Britain, the Autonomous Region of Bougainville, Madang, Jiwaka, Milne Bay, East Sepik and Central Provinces within PNG as well as projects in many places in Australia. The best of his research is published in Science and Nature. Dr Leavesley was also elected as a Fellow of the Society of Antiquarians of London in 2013.



Ms Bronte Moules is a senior career officer with the Department of Foreign Affairs and Trade (DFAT), and served most recently as Head of Mission at the Australian Embassy, Rangoon. Ms Moules has also previously served overseas in Bangkok, New Delhi, at Australia's Mission to the United Nations, New York, and at Australia's Mission to the Conference on Disarmament, Geneva. Ms Moules holds a Bachelor of Arts degree with Honours from the Australian National University.



Hon. Pila Niningi is the Minister for Higher Education, Research, Science and Technology. He was born in an era of transition Pila Niningi was in the generation that saw profound changes in the twilight of decolonisation in Papua New Guinea's last frontiers. Pila walked great distances to school in Kaupena in the Southern Highlands Province and was one of a few students from Ialibu High School to enter university where he became the President of the Southern Highlands students and SRC and was elected to the University Council at three universities. In the final year of his Law degree he contested the 1982 National Elections in the Imbonggu Open seat and came second. After graduating in Law he went to the Legal Training Institute and now is a professional lawyer.



Dr Willie Pomat fulfils several roles in his academic life including the Deputy Director of Science and Research at PNGIMR, heads the Environmental and Emerging Disease and Infection and Immunity Units as well as oversees the running of PNGIMR's Institutional Review Board (ethics) at the Institute. He is on Honorary Research Fellow at Telethon Kids Institute, Adjunct Professor at Kirby Institute and at JCU's Australian Institute of Tropical Health and Medicine. Dr Pomat brings a strong track record of effectively collaborating with international partners to conduct high quality research under very challenging conditions. Dr Pomat has published in high impact journals to positively impact policy, particularly in the area of immunization and microbiology.



Professor Marcus Sheaves is a full-time Professor at James Cook University, where he is Head of Marine Biology and Aquaculture, Deputy Director of JCU's Centre for Tropical Water & Aquatic Ecosystem Research (TropWATER) and leader of the Science for Integrated Coastal Ecosystem Management consortium. Marcus also leads JCU's Estuary and Coastal Wetland Ecology Research Group. Marcus has researched the ecology of tropical estuaries, coastal wetlands and mangrove systems since the early 1990s and has published widely with over 60 peer reviewed publications in the last 5 years. Marcus leads substantial research projects within Australia, PNG, and the Asia-Pacific region and collaborations with research and management organisations. He leads JCU's Pacific Ridge-to-Reef teaching program.



Professor Nakapai Tefuarani is the Executive Dean of UPNG's School of Medicine and Health Sciences, Head and Professor of Child Health Discipline and Chairman of the school's Research and Ethics Committee. He holds a Bachelor of Medicine, Bachelor of Surgery (MBBS), a postgraduate Diploma in Child Health (DCH), a Master of Medicine in Child Health (MMed-Child Health), a Doctor of Philosophy (PhD) in Paediatric Cardiology and is a Fellow of the Australasian College of Tropical Medicine.

He was the elected President of the Medical Society of Papua New Guinea (MSPNG) in 2010, re-elected in 2013 and 2016 and has served in the position for seven years. He is a paediatrician and paediatric cardiologist with an interest in academia and research.



Professor Maxine A. Whittaker, MBBS, MPH, PhD, FAFPHM is the Dean of the College of Public Health, Medical and Veterinary Sciences and Deputy Director of the Australian Institute for Tropical Health and Medicine at James Cook University and Co-Director of the WHO Collaborating centre on Vector Borne and Neglected Tropical Diseases. She was previously a Programme Director of the Australian Initiative on Control and Elimination of Malaria/Pacific Malaria Initiative Support Centre, co-Secretariat of the Asia Pacific Elimination Network and has lived in several African, Asian and Pacific countries, including Papua new Guinea. Her research interests include operational and health services and medical anthropology, with a primary focus on infectious diseases including malaria, sexual and reproductive health, health seeking behaviour and quality of care.



Professor Steven Winduo is the current Director of the Academic Audit Unit at The University of Papua New Guinea and Co-Chair of the UPNG-JCU Joint Steering Committee and brings a BA and BA(Hon.) in Literature, History, and Philosophy, MA in English and a PhD in English. He held the Arthur Lynn Andrews Chair in Pacific and Asian Studies, within the Center for Pacific Islands Studies, and was a visiting research scholar at the East West Center, held within the Pacific Islands Development Program (2011). He is also a writer and columnist with The National newspaper of Papua New Guinea. He has read his works in PNG, Fiji, Australia, New Zealand, Canada, Minnesota, Hawaii, and Philippines.

TUESDAY 12 DECEMBER 2017, PNG IMPACT RESEARCH SHOWCASE

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9:45–10:30 **Opening Keynote: Research and innovation for societal impact in PNG: priorities, successes and opportunities** by Professor Teatulohi Matainaho, Chairman/CEO of PNG Science and Technology Council

10:30–11:00 Morning tea

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11:20–11:40 **Back to Basics: The role of human resource management in the PNG health sector** by Professor Maxine Whittaker, Dean, Public Health, Medical and Veterinary Sciences, James Cook University

11:40–12:00 **Sustainable resources and technology research in PNG** with Professor Chalapan Kaluwin, Acting Executive Dean of the School of Natural and Physical Science, University of Papua New Guinea

12:00–12:20 **Questions and discussion**

12:20–12:30 **Screening: Skin has Eyes and Ears** by Professor Rosita Henry and Dr Daniela Vavrova

12:30–1:30 Lunch

1:30–3:00	SESSION 3 Chaired by Professor Lekshmi N. Pillai	
1:30–1:50	Developing context – Specific Fundamental Knowledge to Support Sustainable Development and the Role of Local Expert Partnerships by Professor Marcus Sheaves, Head of Marine Biology and Aquaculture, James Cook University	
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2:10–2:30	The land of 1000 voices: the impact of linguistic research in PNG by Professor Alexandra Aikhenvald, College of Arts and Society and Education, James Cook University	
2:30–2:50	Research and Innovation for societal impact in PNG: Priorities and opportunities for building a safe society by Dr. Fiona Hukula, Senior Research Fellow and Building Safer Communities Program Leader at the PNG National Research Institute	
2:50–3:00	Questions and discussion	
3:00–3:30	Afternoon tea	
3:30–5:00	SESSION 4 Chaired by Professor Betty Lovai	
3:30–4:40	Panel and open discussion: <i>Building partnerships and capacity for research and innovation</i> . Moderated by Professor Betty Lovai. Panel members include: <ul style="list-style-type: none"> 1. Professor Teatulohi Matainaho, <i>Chairman/Chief Executive Officer, PNG Science and Technology Council</i> 2. Professor Andrew Krockenberger, <i>Dean of Research, James Cook University, The Australian High Commission</i> 3. Mr Benedict David, <i>Minister-Counsellor (Human Development & Infrastructure)</i> 4. Hon. Pila Niningi, <i>MP, Minister for Higher Education, Research, Sciences and Technology</i> 5. Dr Anna Joskin, <i>Dean of Research, The University of Papua New Guinea</i> 	
4:40–5:00	Closing remarks & synopsis	Professors Steven Winduo, <i>Director of Academic Audit Unit, UPNG</i> & Robyn McGuiggan, <i>Deputy Vice-Chancellor, Global Strategy and Engagement, JCU</i>
5:00–6:30	Break	
6:30–9.00pm	Cocktail reception by <i>INVITATION ONLY</i> hosted by The University of Papua New Guinea and the Lowy Institute at the UPNG Drill Hall.	

WEDNESDAY 13 DECEMBER 2017, PNG IMPACT INNOVATION LABS

8:00–9:00	<i>Registration desk open at the Main Lecture Theatre</i>					
	Lab One	Lab Two	Lab Three	Lab Four	Lab Five	Lab Six
VENUE	<i>Science 2 Building (S211)</i>	<i>Main Lecture Theatre (MLT)</i>	<i>Arts Lecture Theatre (ALT)</i>	<i>Science 3 Building (S310)</i>	<i>Science 1 Building (S108)</i>	<i>Science Lecture Theatre (SLT)</i>
9.00 – 10:30	CONCURRENT SESSION 1					
	Livelihoods, agriculture and fisheries	Governance and nation building	Education: access and impact	Ecology	Innovation in health service delivery	Clinical skills
10:30–11:00	Morning tea					
11:00–12:30	CONCURRENT SESSION 2					
	Livelihoods and community development	Peace and well-being	Education: curriculum and innovation	Wildlife conservation and management	Health, culture & behaviour	Drug development and quality
12:30 – 1:30	Lunch					
1:30 – 3:00	CONCURRENT SESSION 3					
	Human capital & labour	Economic development	Inclusive research	Infrastructure in the 21st Century	Population health	Medicine
3:00–3:30	Afternoon tea					

3:30–5:00	MAIN LECTURE THEATRE	CLOSING PLENARY		
3:30–3:35		Opening remarks by chair and moderator <i>Professor Steven Winduo</i>		
3:35–4:20		<p>Panel and open discussion:</p> <p><i>Where to from here? Opportunities to build research impact</i></p>	<p>Panel Members</p> <ul style="list-style-type: none"> • Dr. Amy Diedrich, <i>Lecturer, Environmental Management, JCU</i> • Dr. Anna Joskin, <i>Dean of Research, UPNG</i> • Mr. Sam Kaipu, <i>A/Executive Dean, School of Law, UPNG</i> • Professor Richard Murray, <i>Dean, Medicine and Dentistry, JCU</i> • Associate Professor Victor Temple, <i>Basic Medicine and Health Science, UPNG</i> • Dr. Mark Ziembicki, <i>State of the Tropics Project, JCU</i> 	
4.20 - 4.40		Summation	<p>Professor Teatulohi Matainaho Chairman and <i>Chief Executive Officer, PNG Science and Technology Council</i></p>	
4:40 – 5:00		Closing ceremony	<p>Professor Steven Winduo, <i>Director, Academic Audit Unit, UPNG</i></p> <p>Professor Robyn McGuiggan, <i>Deputy Vice- Chancellor Global Strategy and Engagement, JCU</i></p>	
5:00		CLOSE		
6.00 - 9.00	Cultural evening and dinner sponsored by the Australian High Commission at the Holiday Inn.			

PNG IMPACT INNOVATION LIST OF DAY TWO SPEAKERS

SURNAME	FIRST NAME	TITLE	TOPIC	THEME	TIME	LAB	ROOM
Aceret	Teresita	Dr	Restoration of UPNG Pathology Museum Specimens: A collaborative project by JCU and UPNG	<i>Medicine</i>	2.00-2.15	6	SLT
Alei	Freddie	Mr	Comparing Soil (Peat) carbon content of different mangrove communities in Bootless Bay, Central Province PNG	<i>Ecology</i>	10.00-10.15	4	S310
Ambelye	Imelda	Ms	Why women in the communities do not participate in implementing their community projects effectively and successfully?	<i>Livelihoods and community development</i>	11.00-11.15	1	S211
Andrew	Vincianna	Ms	Smallholder Tree Farmers Adoption Behaviour Towards Nursery Technologies in Eastern Highlands Province: Implication for Policy Intervention for Woodlot Farming in PNG.	<i>Livelihoods, agriculture and fisheries</i>	10.00-10.15	1	S211
Anura-Upasanta-Kumara	Wickrama	Mr	Prevalence of coral diseases in Kimbe Bay, Papua New Guinea	<i>Ecology</i>	9.15-9.30	4	S310
Bagore	Maryanne	Ms	How continuous innovation from digital disruption can stimulate a creative economy in Papua New Guinea	<i>Infrastructure in the 21st century</i>	1.30-1.45	4	S310
Bagyalingam	Rajeswari	Mrs	Enhancing positive societal impact through the informal curriculum	<i>Education: curriculum and innovation</i>	11.30-11.45	3	ALT
Barker	Bryce	Prof	Nation Building and the Archaeology of the Great Papuan Plateau	<i>Governance and nation building</i>	9.00-9.15	2	MLT
Beasley	Isabel	Dr	PIDU Project: Research and Conservation of Dolphins in the Kikori Delta PNG	<i>Ecology</i>	9.45-10.00	4	S310

SURNAME	FIRST NAME	TITLE	TOPIC	THEME	TIME	LAB	ROOM
Beikoff	Tracey	Ms	Rescue Swags for Treaty Villages	<i>Innovation in health service delivery</i>	9.30-9.45	5	S108
Bower	Deborah	Dr	Protecting amphibians from disease in Papua New Guinea	<i>Wildlife conservation and management</i>	11.00-11.15	4	S310
Campbell	Mason	Dr	Optimizing future road infrastructure for societal benefit and environmental protection in Papua New Guinea	<i>Infrastructure in the 21st century</i>	2.00-2.15	4	S310
Connell	Jane	Ms	Identifying the barriers to the integration of research into graduate midwives' professional practice in the Highlands of Papua New Guinea	<i>Clinical skills</i>	9.15-9.30	6	SLT
Copus-Campbell	Stephanie	Ms	Oil Search and PNG Government Partnership: Making an impact on health service delivery	<i>Innovation in health service delivery</i>	10.00-10.15	5	S108
Dalsgaard	Signe	Ms	TWILIGHT BASKET: Building communities through sports	<i>Livelihoods and community development</i>	12.00-12.15	1	S211
Dalsgaard	Signe	Ms	Village Court in an Urban Setting: Experiences from Hanuabada	<i>Peace and wellbeing</i>	11.00 – 11.15	2	MLT
Daniels	Nicholas	Mr	Development of Sea cucumber mariculture in the Tigak Islands, PNG	<i>Livelihoods, agriculture and fisheries</i>	9.00-9.15	1	S211
De Costa	Caroline	Prof	The current practice of induced abortion in Papua New Guinea	<i>Health, culture and behaviour</i>	12.15-12.30	5	S108
Devabaktina	Harinarayana	Dr	Development Experience of Papua New Guinea,1990-2015	<i>Economic development</i>	2.00-2.15	2	MLT
Dheeravath	Venkateswarlu	Dr	Mapping the impact of the 2015-2016 El Nino on food security in Papua New Guinea using mobile Vulnerability Analysis and Mapping	<i>Livelihoods, agriculture and fisheries</i>	10.15-10.30	1	S211
Diefenbach-Elstob	Tanya	Ms	The epidemiology of tuberculosis in the Balimo district of Western Province, PNG	<i>Population health</i>	2.30-2.45	5	S108

SURNAME	FIRST NAME	TITLE	TOPIC	THEME	TIME	LAB	ROOM
Doolan	Denise	Prof	Innovative systems-based research as a new approach to develop vaccines and diagnostics to improve public health	<i>Drug development and quality</i>	11.45-12.00	6	SLT
Entsch	Yolonde	Mrs	Building Resilience in the Treaty Villages	<i>Livelihoods and community development</i>	11.30 – 11.45	1	S211
Faiteli	Alfred	Dr	An Assessment of Students Academic Performances Before and After the Student Crisis in 2016: The Stories of Demography-Major Students, University of PNG	<i>Education: access and impact</i>	9.45-10.00	3	ALT
Glass	Beverley	Prof	Counterfeit and substandard antimalarial drugs: Development of a simple tool for the rapid assessment of the quality of artemether-lumifantrine tablets in developing countries	<i>Drug development and quality</i>	11.00-11.15	6	SLT
Goie	Steven	Mr	INA Private Sector Survey	<i>Economic development</i>	2.30-2.45	2	MLT
Golpak	Yvonne	Dr	The oral health status of school children on and near the Kokoda Trail	<i>Population health</i>	1.45-2.00	5	S108
Goris	Janny	Mr	Status of Iodine Nutrition and Salt iodization among the Kamea community in Kotidanga LLG Gulf Province, Papua New Guinea	<i>Population health</i>	1.30-1.45	5	S108
Guernier	Vanina	Dr	Molecular epidemiology of tuberculosis in the Balimo region, Papua New Guinea	<i>Population health</i>	2.15-2.30	5	S108
Gumbaketi	Elizabeth	Mrs	Girlhood to Womanhood: Experiences of adolescent girls at menarche in Papua New Guinea	<i>Health, culture and behaviour</i>	11.45-12.00	5	S108
Hane-Nou	Goru	Dr	Partners in change: Responding to the teaching quality agenda	<i>Education: access and impact</i>	9.30-9.45	3	ALT
Hecko	Ezekiel	Mr	Landslide and Road Design Assessment of the Eastern Highlands Segment of the Highlands Highway	<i>Infrastructure in the 21st century</i>	2.15-2.30	4	S310

SURNAME	FIRST NAME	TITLE	TOPIC	THEME	TIME	LAB	ROOM
Hehonah	Naomi	Dr	Poor Quality Medicines: Quality Assessment of Amoxicillin Oral Products in the National Capital District, Papua New Guinea	<i>Drug development and quality</i>	11.15-11.30	6	SLT
Hobart-Karo	Rosemary	Ms	Challenges to the Disabled in PNG Post-Secondary Education	<i>Education: access and impact</i>	900-9.15	3	ALT
Howard	Greg	Mr	Tropical Rugby Union College: Private Enterprise College lightly affiliated with James Cook University Rugby Union Club to benefit Tropical Societies.	<i>Human Capital and labour</i>	2.15-2.30	1	S211
Jimbanau	Emmanuel	Mr	Assessment of betelnut (<i>Areca catechu L.</i>) mastication sputum stain in Papua New Guinea	<i>Education: curriculum and innovation</i>	12.15-12.30	3	ALT
John	Raymond	Mr	A competencies performance model to deliver tertiary PNG student innovation and leadership	<i>Education: curriculum and innovation</i>	11.15 - 11.30	3	ALT
John	Raymond	Mr	Identifying the skills needed by Business in Papua New Guinea	<i>Human Capital and labour</i>	2.30 - 2.45	1	S211
Johnson	Johanna	Ms	South Fly Treaty Village Resilience Program: Supporting Sustainable Community-Led Development	<i>Livelihoods and community development</i>	11.15 – 11.30	1	S211
Joskin	Anna	Dr	Say what? Students' voices on learning basic research skills from a course work requirement	<i>Inclusive research</i>	2.00 - 2.15	3	ALT
Kabuni	Michael	Mr	Shifting coalitions: Does party policies really matter?	<i>Governance and nation building</i>	10.00 - 10.15	2	MLT
Kanaparo	Peter	Mr	A Socioeconomic Impact Study on Gambling in Four Provinces: The Perceptions, Realities, and Disparities of Playing Pokies in PNG	<i>Governance and nation building</i>	9.45 - 10.00	2	MLT
Kanaparo	Peter	Mr	Human Resource Development Impediments in the Local-Level Governments: The Cause of Poor Services Delivery in PNG	<i>Human Capital and labour</i>	1.45 - 2.00	1	S211

SURNAME	FIRST NAME	TITLE	TOPIC	THEME	TIME	LAB	ROOM
Kauli	Jackie	Dr	Creative and arts-based approaches for inclusive research with communities: A case study on researching sorcery and gender related violence in PNG	<i>Peace and well-being</i>	11.15 - 11.30	2	MLT
Kiele-Sapak	Regina	Mrs	Impact of stormwater runoff on water quality and public infrastructure in the National Capital District: A study carried out at two urban catchments: Boroko and Taurama	<i>Infrastructure in the 21st century</i>	1.45 - 2.00	4	S310
Kitau	Russel	Mr	Transferring the Aboriginal Australian Family Wellbeing empowerment program from a Papua New Guinea university context to broader community settings: a feasibility study	<i>Peace and well-being</i>	11.30 - 11.45	2	MLT
Kolkia	Monica	Ms	Marine mammal interactions with fishing activities in Papua New Guinea; a case study from the Kikori Delta, Gulf Province	<i>Wildlife conservation and management</i>	11.30-11.45	4	S310
Kutapai	Robert	Mr	Auditors performance of fraud risk assessment: Evidence from Papua New Guinea	<i>Governance and nation building</i>	9.30-9.45	2	MLT
Lau	Jacqueline	Ms	"We need to yell about our reefs"- creating deliberative spaces to better manage coral reefs	<i>Wildlife conservation and management</i>	12.00-12.15	4	S310
Lemeki	Madeline	Dr	Health Behaviour Change Theories Application to Health Promotion Programs in PNG	<i>Health, culture and behaviour</i>	11.15-11.30	5	S108
Malabu	Usman	A/Prof	Telehealth: New Horizon in Management of Diabetes in Rural North Queensland -Prospect for Use in PNG	<i>Innovation in health service delivery</i>	900-9.15	5	S108
Malabu	Usman	A/Prof	Diabetes and Urbanisation in Papua New Guinea: A Wake-up Call	<i>Population health</i>	2.45-3.00	5	S108
Mancheri	Muneer	Dr	An Empirical Study of Some Determinants of Economic Growth of Papua New Guinea	<i>Economic development</i>	1.30-1.45	2	MLT

SURNAME	FIRST NAME	TITLE	TOPIC	THEME	TIME	LAB	ROOM
Mandui	Olive	Ms	CHILD LABOUR: Children in the informal economy in Port Moresby, PNG	<i>Human Capital and labour</i>	1.30-1.45	1	S211
Manineng	Clement	Mr	Integrating male circumcision for HIV prevention with initiation ceremonies in Yangoru-Saussia, East Sepik: An exploratory study	<i>Innovation in health service delivery</i>	9.45-10.00	5	S108
Marme	Gigil	Mr	Barriers and Facilitators to Effective Tuberculosis Infection Control Practices in Madang Province: PNG: A Qualitative Study	<i>Clinical skills</i>	9.30-9.45	6	SLT
Matapia	Iggie	Mr	Developing Knowledge Networks in the Nakanai Ranges (Tentative World Heritage Area)	<i>Inclusive research</i>	2.15-2.30	3	ALT
Mavea	Wilma	Ms	Status of Marine Mammals in Papua New Guinea Waters	<i>Ecology</i>	9.30-9.45	4	S310
Mel	Alessandra	Ms	Health: Using mobile phones for the monitoring and evaluation of health messages: A pilot study on HIV education in three communities in the Eastern Highlands Province of Papua New Guinea	<i>Innovation in health service delivery</i>	9.15-9.30	5	S108
Milli	Geejay	Ms	Closing the Gender Gap in PNG Parliament	<i>Governance and nation building</i>	9.15-9.30	2	MLT
Minei	Alfred	Mr	Informed consent to Medical treatment in the context of traditional customs in PNG	<i>Health, culture and behaviour</i>	12.00-12.15	5	S108
Murphy	Penelope	Dr	Enabling PNG women to pursue non-traditional careers	<i>Education: curriculum and innovation</i>	11.45-12.00	3	ALT
Murray	Richard	Prof	The right medicine for rural- training tomorrow's doctors	<i>Clinical skills</i>	10.15-10.30	6	SLT
N'Drower	Fiona	Ms	An indigenous research tool for Papua New Guinea	<i>Inclusive research</i>	1.30-1.45	3	ALT
<i>Nagombi</i>	<i>Elizah</i>	<i>Mr</i>	PNG LNG -- PIDU Research Scholarship: Lessons Learnt from a JCU Masters Student <i>presented</i>	<i>Education. Access and Impact</i>	10.00 – 10.15	3	ALT

SURNAME	FIRST NAME	TITLE	TOPIC	THEME	TIME	LAB	ROOM
Neuendorf	Nalisa	Ms	Community Response: Repositioning the narrative of Gender Violence in Papua New Guinea	<i>Peace and well-being</i>	12.15-12.30	2	MLT
Neuendorf	Nalisa	Ms	Impacting on PNG? A project about PNG residents preparing for old age in North Queensland	<i>Inclusive research</i>	2.30 - 2.45	3	ALT
New	Karen	Dr	Building sustainability in newborn resuscitation skills and knowledge in the Eastern Highlands	<i>Clinical skills</i>	900 - 9.15	6	SLT
New	Karen	Dr	Challenges of neonatal hypothermia: Observation and assessment to improve clinical outcomes for neonates	<i>Clinical skills</i>	9.45-10.00	6	SLT
New	Karen	Dr	Helping Babies Breathe resuscitation training in resource limited environments: An observational pilot study evaluating the feasibility of conducting follow-up assessments in survivors.	<i>Clinical skills</i>	10.00-10.15	6	SLT
Newlands	Maxine	Dr	Closing the Gender Gap in PNG Parliament	<i>Governance and nation building</i>	9.15-9.30	2	MLT
Pandihau	Lina	Ms	Using low technology systems to farm native fish species (Milkfish) in coastal PNG communities for food security and livelihood sustenance	<i>Livelihoods, agriculture and fisheries</i>	9.30-9.45	1	S211
Pape	Ruth	Mrs	Mammographic parenchymal patterns and breast cancer risk profiles of Papua New Guinea women: A baseline of the screening population	<i>Health, culture and behaviour</i>	11.30-11.45	5	S108
Peter	Esley	Mr	Why have so many cocoa smallholders been unable to adopt Cocoa Pod Borer management practices	<i>Livelihoods, agriculture and fisheries</i>	9.15-9.30	1	S211
Philip	Reynold	Mr	Harnessing Plant cyclotides (cyclic plants protein) as templates for drug designing in PNG.	<i>Drug development and quality</i>	12.15-12.30	6	SLT
Pulotu	Challis	Mr	Food Resources of the Raggiana Bird of Paradise in a Tropical Forest corridor within a Savannah Landscape	<i>Ecology</i>	900-9.15	4	S310

SURNAME	FIRST NAME	TITLE	TOPIC	THEME	TIME	LAB	ROOM
Rangou	Janet	Ms	A Quality Assurance Model for Open Learning Distance at the University of Papua New Guinea's Open College towards the SDG4	<i>Education: curriculum and innovation</i>	11.00-11.15	3	ALT
Ravul	Livingstone	Mr	Community randomized safety trial of triple-drug mass drug administration for lymphatic filariasis in Papua New Guinea	<i>Drug development and quality</i>	12.00-12.15	6	SLT
Ray	Samuel	Mr	Alleviating poverty through micro-credit: A Papua New Guinea Case Study	<i>Economic development</i>	2.45-3.00	2	MLT
Redman-McLaren	Michelle	Dr	Strengthening provision of sexual and reproductive health knowledge in communities of PNG: One step towards research impact.	<i>Health, culture and behaviour</i>	11.00-11.15	5	S108
Rova	Millicent	Ms	A policy analysis on the impact of SME development and innovation in PNG	<i>Economic development</i>	2.15-2.30	2	MLT
Rush	Catherine	A/Prof	Expanding the capacity of Papua New Guinea health districts to utilise immune-based diagnostics for extrapulmonary tuberculosis: A rural district hospital to reference laboratory model	<i>Medicine</i>	1.45-2.00	6	SLT
Samiak	Louis	Dr	Vaccination and nutritional status of children in Karawari, East Sepik Province	<i>Innovation in health service delivery</i>	10.15-10.30	5	S108
Sciberras	Kieren	Mr	Influence of region of origin on the anthropometric and performance characteristics in Papua New Guineans: A work in progress.	<i>Medicine</i>	2.45-3.00	6	SLT
Sharplin	Elaine	Prof	Situating the challenges for teacher education in Papua New Guinea: A comparative review of teacher education in developing rural contexts.	<i>Education: access and impact</i>	10.15-10.30	3	ALT
Sharry	Peter	Mr	Understanding the preconditions for community initiated WASH improvements on Los Negros Island, Manus Province of Papua New Guinea	<i>Infrastructure in the 21st century</i>	2.45-3.00	4	S310

SURNAME	FIRST NAME	TITLE	TOPIC	THEME	TIME	LAB	ROOM
Simeon	Lalen	A/Prof	Building gender equity through a family teams approach: A research for development project that is supporting the economic development of women smallholder farmers and their families in PNG	<i>Peace and well-being</i>	12.15 - 12.30	2	MLT
Sokou	Philip	Mr	Seaweed farming in atolls and coastal provinces of PNG for income generation and reduction of fishing pressure on wild fisheries	<i>Livelihoods, agriculture and fisheries</i>	9.45-10.00	1	S211
Susuke	Dzarina	Miss	Traditional ecological knowledge and conservation of cassowaries in montane forests of Papua New Guinea: A bio-cultural approach	<i>Wildlife conservation and management</i>	11.45-12.00	4	S310
Tapura	John Wanis	Mr	Research-based Curriculum design, innovation, Policy and Practice will Impact Papua New Guinea societies:	<i>Education: curriculum and innovation</i>	12.00-12.15	3	ALT
Taram	Lorraine	Ms	Changing Role of Women in Fresh Food Marketing: A Case Study of Port Moresby	<i>Livelihoods and community development</i>	11.45 - 12.00	1	S211
Taufa	Shalon	Dr	Smoking, Particulate fuel use, increasing BMI (but not betelnut use) increase the probability of obstructive airway conditions in adults from NCD PNG	<i>Medicine</i>	2.15-2.30	6	SLT
Temple	Olga	Mrs	Effect of Early Language Education on the Academic Performance of National High School (NHS) Students in Papua New Guinea	<i>Education: access and impact</i>	9.15-9.30	3	ALT
Temple	Victor	A/Prof	Iron content in Fortified Rice sold in the NCD PNG	<i>Medicine</i>	2.30-2.45	6	SLT
Tilbrooke	Adam	Mr	Using research as a tool across multi-disciplines to develop a conflict resolution model	<i>Peace and well-being</i>	11.45 - 12.00	2	MLT
Timms	Carolyn	Dr	Relevance of organisational justice and support on academics' affective commitment and turnover intentions	<i>Human Capital and labour</i>	2.00-2.15	1	S211
Towle	Simon	Mr	Sustaining the communities of the Los Negros Islands, Manus Province, Papua New Guinea	<i>Livelihoods and community development</i>	11.00 - 11.15	1	S211

SURNAME	FIRST NAME	TITLE	TOPIC	THEME	TIME	LAB	ROOM
Vavrova	Daniela	Dr	Crafting Together: Collaborative Arts-based Research Methods	<i>Inclusive research</i>	1.45-2.00	3	ALT
Vera	Numa	Ms	Common Traditional Medicinal Plants used to manage Type 2 Diabetes Mellitus in Solomon Islands, Fiji and Tonga	<i>Drug development and quality</i>	11.30-11.45	6	SLT
Viswanathan	Sanjay	Mr	Talent: A Parable or a Process – Journey into the Talent Hotspots of PNG	<i>Human Capital and labour</i>	2.45-3.00	6	S211
Wale	Napoleon	Mr	Psoralen induced Phytophotodermatitis by MORACEAE on common skin pigments in	<i>Medicine</i>	1.30-1.45	6	SLT
Waltham	Nathan	Dr	Increasing number of micro-port developments and risks to coastal ecosystems in PNG	<i>Infrastructure in the 21st century</i>	2.30-2.45	4	S310
Wangi	Thomas	Mr	Housing Allowances for Public Servants PNG	<i>Economic development</i>	1.45-2.00	2	MLT
Warner	Jeffrey	A/Prof	Infectious disease epidemiology in PNG: Lessons in diversity	<i>Population health</i>	2.00-2.15	5	S108
Ziembicki	Mark	Dr	Rapid response of wildlife to community-established no-take zones in the YUS Conservation Area, Papua New Guinea	<i>Wildlife conservation and management</i>	11.15-11.30	4	S310

PNG IMPACT INNOVATION LABS ONE TO SIX

PNG IMPACT INNOVATION LAB ONE: SCIENCE 2 BUILDING, ROOM 211

LIVELIHOODS, AGRICULTURE AND FISHERIES	
AM	CONCURRENT SESSION 1
9.00 – 9.15	Development of Sea cucumber mariculture in the Tigak Islands, PNG <i>presented by Mr Nicholas Daniels, Mariculture Research Technician, National Fisheries Authority</i>
9.15 – 9.30	Why have so many cocoa smallholders been unable to adopt Cocoa Pod Borer management practices <i>presented by Mr Esley Peter, PNG Cocoa Coconut Institute Ltd. Co-presented by Dr Gina Koczberski, Senior Research Fellow, Curtin University</i>
9.30 – 9.45	Using low technology systems to farm native fish species (Milkfish) in coastal PNG communities for food security and livelihood sustenance <i>presented by Ms Lina Pandihau, Inland Fishery Officer, National Fisheries Authority</i>
9.45 - 10.00	Seaweed farming in atolls and coastal provinces of PNG for income generation and reduction of fishing pressure on wild fisheries <i>presented by Mr Philip Sokou, Nago Mariculture Facility Manager, National Fisheries Authority</i>
10.00 -10.15	Smallholder Tree Farmers Adoption Behaviour Towards Nursery Technologies in Eastern Highlands Province: Implication for Policy Intervention for Woodlot Farming in PNG <i>presented by Ms Vincianna Andrew, Community Forestry Officer, PNG Forestry Authority</i>
10.15-10.30	Mapping the impact of the 2015-2016 El Nino on food security in Papua New Guinea using mobile Vulnerability Analysis and Mapping <i>presented by Dr Venkateswarlu Dheeravath, World Food Program</i>
10.30–11.00	<i>Morning Tea at MLT</i>

LIVELIHOODS AND COMMUNITY DEVELOPMENT	
AM/PM	CONCURRENT SESSION 2
11.00-11.15	Sustaining the communities of the Los Negros Islands, Manus Province, Papua New Guinea <i>presented by Mr Simon Towle, PhD Candidate, James Cook University</i>
11.15 – 11.30	South Fly Treaty Village Resilience Program: Supporting Sustainable Community-Led Development <i>presented by Ms Johanna Johnson, Senior Project Manager, Treaty Village Resilience Program, Reef & Rainforest Research Centre</i>
11.30 – 11.45	Building Resilience in the Treaty Villages <i>presented by Mrs Yolonde Entsch, Project Leader RRRC Connect, Reef & Rainforest Research Centre</i>

LIVELIHOODS AND COMMUNITY DEVELOPMENT	
11.45 – 12.00	Changing Role of Women in Fresh Food Marketing: A Case Study of Port Moresby <i>presented by Ms Lorraine Taram, Tutor, School of Natural and Physics Sciences, The University of Papua New Guinea</i>
12.00 – 12.15	TWILIGHT BASKET :Building communities through sports <i>presented by Ms Signe Dalsgaard, Senior Lecturer, School of Law, The University of Papua New Guinea. Co-presented by Delisha Liri, Basketball Federation of Papua New Guinea</i>
12.15 – 12.30	Answering Calls for Help - Calls to the 1-Tok Kaunselin Helpim Lain - PNG's first toll-free telephone counselling service - in the first two years of operation <i>presented by Ms Sally Beadle, Team Leader for Gender, Child Protection and Resilience, Childfund PNG</i>
12.30 –1.30	Lunch at MLT

HUMAN CAPITAL AND LABOUR	
AM/PM	CONCURRENT SESSION 3
1.30-1.45	CHILD LABOUR: Children in the informal economy in Port Moresby, PNG <i>presented by Ms Olive Mandui, Student, Legal Training Institute, Papua New Guinea</i>
1.45-2.00	Human Resource Development Impediments in the Local-Level Governments: The Cause of Poor Services Delivery in PNG <i>presented by Mr Peter Kanaparo, Lecturer, School of Business and Public Policy, The University of Papua New Guinea</i>
2.00-2.15	Relevance of organisational justice and support on academics' affective commitment and turnover intentions <i>presented by Dr Carolyn Timms, Lecturer, College of Healthcare Sciences, James Cook University. Co-presenter Mr Michael Esop, Lecturer, School of Humanities and Social Sciences, The University of Papua New Guinea</i>
2.15-2.30	Tropical Rugby Union College :Private Enterprise College lightly affiliated with James Cook University Rugby Union Club to benefit Tropical Societies <i>presented by Mr Greg Howard, Consultant Engineer and Technical Director, Tropical Rugby College, James Cook University</i>
2.30-2.45	Identifying the skills needed by Business in Papua New Guinea <i>presented by Mr Raymond John, Lecturer, School of Business and Public Policy, The University of Papua New Guinea</i>
2.45-3.00	Talent: A Parable or a Process – Journey into the Talent Hotspots of PNG <i>presented by Mr Sanjay Viswanathan, Talent Development Manager, Career Development, IBS University</i>
3.00-3.30	Afternoon Tea at MLT

PNG IMPACT INNOVATION LAB TWO: MAIN LECTURE THEATRE (MLT)

GOVERNANCE AND NATION BUILDING	
AM	CONCURRENT SESSION 1
9.00 – 9.15	Nation Building and the Archaeology of the Great Papuan Plateau <i>presented by Professor Bryce Barker, Professor/Lecturer, School of Arts and Communication, University of Southern Queensland</i>
9.15 – 9.30	Closing the Gender Gap in PNG Parliament <i>presented by Ms Geejay Milli, Lecturer, School of Humanities and Social Sciences, The University of Papua New Guinea. Co-presented by Dr Maxine Newlands, Lecturer, Political Science, James Cook University</i>
9.30 – 9.45	Auditors performance of fraud risk assessment: Evidence from Papua New Guinea <i>presented by Mr Robert Kutapai, School of Business and Public Policy, The University of Papua New Guinea</i>
9.45 - 10.00	A Socioeconomic Impact Study on Gambling in Four Provinces:The Perceptions, Realities, and Disparities of Playing Pokies in PNG <i>presented by Mr Peter Kanaparo, School of Business and Public Policy, The University of Papua New Guinea</i>
10.00 -10.15	Shifting coalitions :Does party policies really matter? <i>presented by Mr Michael Kabuni, Teaching Fellow, Department of Political Science, School of Humanities and Social Sciences, The University of Papua New Guinea</i>
10.30–11.00	Morning Tea at MLT

PEACE AND WELL-BEING	
AM/PM	CONCURRENT SESSION 2
11.00-11.15	Village Court in an Urban Setting :Experiences from Hanuabada <i>presented by Ms Signe Dalsgaard, Senior Lecturer, School of Law, The University of Papua New Guinea</i>
11.15 – 11.30	Creative and arts-based approaches for inclusive research with communities :A case study on researching sorcery and gender related violence in PNG <i>presented by Dr Jackie Kauli, Research Fellow, Creative Industries Faculty, Queensland University of Technology</i>
11.30 – 11.45	Transferring the Aboriginal Australian Family Well-being Empowerment Program from a Papua New Guinea university context to broader community settings: a feasibility study <i>presented by Mr Russel Kitau, Lecturer, The University of Papua New Guinea and PhD Candidate, James Cook University</i>
11.45 – 12.00	Using research as a tool across multi-disciplines to develop a conflict resolution model <i>presented by Mr Adam Tilbrooke, Postgraduate student, College of Business Law and Governance, James Cook University. Co-presented by Ms Jacqueline Garoau, Student, James Cook University</i>

PEACE AND WELL-BEING	
12.00 – 12.15	Community Response: Repositioning the narrative of Gender Violence in Papua New Guinea <i>presented by Ms Nalisa Neuendorf, PhD Candidate, College of Arts Society and Education, James Cook University</i>
12.15-12.30	Building gender equity through a family teams approach: A research for development project that is supporting the economic development of women smallholder farmers and their families in PNG <i>presented by A/Prof Lalen Simeon, Associate Professor, Research Department, Pacific Adventist University</i>
12.30 –1.30	Lunch at MLT

ECONOMIC DEVELOPMENT	
AM/PM	CONCURRENT SESSION 3
1.30-1.45	An Empirical Study of Some Determinants of Economic Growth of Papua New Guinea <i>presented by Dr Muneer Mancheri, Senior Lecturer, School of Business, IBS University</i>
1.45-2.00	Housing Allowances for Public Servants PNG <i>presented by Mr Thomas Wangi, Research Fellow, Property Sector Development Program, National Research Institute</i>
2.00-2.15	Development Experience of Papua New Guinea,1990-2015 <i>presented by Dr Harinarayana Devabaktina, Executive Director, Open College, The University of Papua New Guinea</i>
2.15-2.30	A policy analysis on the impact of SME development and innovation in PNG <i>presented by Ms Millicent Rova, Lecturer, Agriculture Economics Research and Marketing Management, Papua New Guinea University of Natural Resources and Environment</i>
2.30-2.45	INA Private Sector Survey <i>presented by Mr Steven Goie, Researcher, Business, Papua New Guinea Institute of National Affairs</i>
2.45-3.00	Alleviating poverty through micro-credit: A Papua New Guinea Case Study <i>presented by Mr Samuel Ray, MBA Student, University of Science and Technology, Beijing</i>
3.00-3.30	Afternoon Tea at MLT

PNG IMPACT INNOVATION LAB THREE: ARTS LECTURE THEATRE (ALT)

EDUCATION: ACCESS AND IMPACT	
AM	CONCURRENT SESSION 1
9.00 – 9.15	Challenges to the Disabled in PNG Post-Secondary Education <i>presented by Ms Rosemary Hobart-Karo, Associate researcher, Palladium International</i>
9.15 – 9.30	Effect of Early Language Education on the Academic Performance of National High School (NHS) Students in Papua New Guinea <i>presented by Mrs Olga Temple, Linguistics Lecturer, School of Humanities and Social Sciences, The University of Papua New Guinea</i>
9.30 – 9.45	Partners in change: Responding to the teaching quality agenda <i>presented by Dr Goru Hane-Nou, Lecturer, School of Humanities and Social Sciences, The University of Papua New Guinea. Co-presented by Mrs Lydia Hiawalyer, Coordinator, Centre of Human Resources and Development, The University of Papua New Guinea</i>
9.45 - 10.00	An Assessment of Students' Academic Performances Before and After the Student Crisis in 2016: The Stories of Demography-Major Students, University of PNG <i>presented by Dr Alfred Faiteli, Lecturer, Demography and Population Studies, Environmental Science and Geography, School of Natural and Physical Sciences, The University of Papua New Guinea</i>
10.00 -10.15	PNG LNG -- PIDU Research Scholarship: Lessons Learnt from a JCU Masters Student <i>presented by Mr Elizah Nagombi, Masters student, College of Science and Engineering, James Cook University</i>
10.15 -10.30	Situating the challenges for teacher education in Papua New Guinea: A comparative review of teacher education in developing rural contexts <i>presented by Professor Elaine Sharplin, Professor of Education, Associate Dean of Learning and Teaching for College of Arts, Society and Education, James Cook University. Co-presented by Professor Chris Walsh, Professor in Education, College of Arts, Society and Education, James Cook University</i>
10.30–11.00	<i>Morning Tea at MLT</i>

EDUCATION: CURRICULUM AND INNOVATION	
AM/PM	CONCURRENT SESSION 2
11.00-11.15	A Quality Assurance Model for Open Learning Distance at the University of Papua New Guinea's Open College towards the SDG4 <i>presented by Ms Janet Rangou, Acting Associate Director Programs and Production, Open College, The University of Papua New Guinea</i>
11.15 – 11.30	A competencies performance model to deliver tertiary PNG student innovation and leadership <i>presented by Mr Raymond John, Lecturer, School of Business and Public Policy, The University of Papua New Guinea</i>
11.30 – 11.45	Enhancing positive societal impact through the informal curriculum <i>presented by Mrs Rajeswari Bagyalingam, Leader, School of Business, IBS University</i>

EDUCATION: CURRICULUM AND INNOVATION	
11.45 – 12.00	Enabling PNG women to pursue non-traditional careers <i>presented by Dr. Penelope Murphy, Research Specialist, Education Capacity Development Facility, Palladium International</i>
12.00 – 12.15	Research-based Curriculum design, innovation, policy and practice will Impact Papua New Guinea societies <i>presented by Mr John Wanis Tapura, PhD Candidate, College of Arts Society and Education, James Cook University</i>
12.15-12.30	Assessment of betelnut (<i>Areca catechu L.</i>) mastication sputum stain in Papua New Guinea <i>presented by Mr Emmanuel Jimbanau, Undergraduate Research Project Student, Department of Applied Sciences, The University of Papua New Guinea</i>
12.30 –1.30	Lunch at MLT

INCLUSIVE RESEARCH	
AM/PM	CONCURRENT SESSION 3
1.30-1.45	An indigenous research tool for Papua New Guinea <i>presented by Ms Fiona N'Drower, PhD Candidate Management and Commerce, College of Business, Law and Governance, James Cook University</i>
1.45-2.00	Crafting Together: Collaborative Arts-based Research Methods <i>presented by Dr Daniela Vavrova, Lecturer, James Cook University</i>
2.00-2.15	Say what? Students' voices on learning basic research skills from a course work requirement <i>presented by Dr Anna Joskin, Acting Director, Centre for Research and Post-Graduate Studies, The University of Papua New Guinea</i>
2.15-2.30	Developing Knowledge Networks in the Nakanai Ranges (Tentative World Heritage Area) <i>presented by Mr Iggie Matapia, Manager, Delawin Guesthouse, Palmalmal Papua New Guinea. Co-presented by Mr Jason Kariwiga, Lecturer, School of Natural and Physical Sciences, The University of Papua New Guinea and Ms Roxanne Tsang, Student, The University of Papua New Guinea</i>
2.30-2.45	Impacting on PNG? A project about PNG residents preparing for old age in North Queensland <i>presented by Ms Nalisa Neuendorf, PhD Candidate, College of Arts, Society and Education, James Cook University</i>
3.00-3.30	Afternoon Tea at MLT

PNG IMPACT INNOVATION LAB FOUR: SCIENCE 3 BUILDING, ROOM S310

ECOLOGY	
AM/PM	CONCURRENT SESSION 1
9.00 – 9.15	Food Resources of the Raggiana Bird of Paradise in a Tropical Forest corridor within a Savannah Landscape <i>presented by Mr Challis Pulotu, BSc Honours Student, School of Science and Technology, Pacific Adventist University</i>
9.15 – 9.30	Prevalence of coral diseases in Kimbe Bay, Papua New Guinea <i>presented by Mr Wickrama Anura-Upasanta-Kumara, Lecturer, Faculty of Fisheries and Marine Sciences, James Cook University JCU and University of Sri Lanka</i>
9.30 – 9.45	Status of Marine Mammals in Papua New Guinea Waters <i>presented by Ms Wilma Mavea, Postgraduate Diploma in Science Student, The University of Papua New Guinea</i>
9.45 - 10.00	PIDU Project: Research and Conservation of Dolphins in the Kikori Delta PNG <i>presented by Dr Isabel Beasley, Adjunct Senior Research Fellow, College of Science and Engineering, James Cook University</i>
10.00 -10.15	Comparing Soil (Peat) carbon content of different mangrove communities in Bootless Bay, Central Province, PNG <i>presented by Mr Freddie Alei, Lecturer, School of Natural and Physical Sciences, The University of Papua New Guinea</i>
10.30–11.00	Morning Tea at MLT

WILDLIFE CONSERVATION AND MANAGEMENT	
AM/PM	CONCURRENT SESSION 2
11.00-11.15	Protecting amphibians from disease in Papua New Guinea <i>presented by Dr Deborah Bower, Lecturer, College of Science and Engineering, James Cook University</i>
11.15 – 11.30	Rapid response of wildlife to community-established no-take zones in the YUS Conservation Area, Papua New Guinea <i>presented by Dr Mark Ziembicki, State of the Tropics Project, James Cook University</i>
11.30 – 11.45	Marine mammal interactions with fishing activities in Papua New Guinea: A case study from the Kikori Delta, Gulf Province <i>presented by Ms Monica Kolkia, Postgraduate Diploma in Science Student, The University of Papua New Guinea</i>
11.45 – 12.00	Traditional ecological knowledge and conservation of cassowaries in montane forests of Papua New Guinea: A bio-cultural approach <i>presented by Miss Dzarina Susuke, Honours Student, Department of Anthropology and Sociology, The University of Papua New Guinea</i>
12.00 – 12.15	“We need to yell about our reefs”: Creating deliberative spaces to better manage coral reefs <i>presented by Ms Jacqueline Lau, PhD Candidate, ARC Centre of Excellence in Coral Reef Studies, James Cook University</i>

INFRASTRUCTURE IN THE 21 ST CENTURY	
AM/PM	CONCURRENT SESSION 3
1.30-1.45	How continuous innovation from digital disruption can stimulate a creative economy in Papua New Guinea <i>presented by Ms Maryanne Bagore, Lecturer, Information Systems, Divine Word University</i>
1.45-2.00	Impact of stormwater runoff on water quality and public infrastructure in the National Capital District: A study carried out at two urban catchments: Boroko and Taurama <i>presented by Mrs Regina Kiele-Sapak, Lecturer, School of Natural and Physical Sciences, The University of Papua New Guinea. Co-presented by Mrs Gertrude Miria, Lecturer, School of Natural and Physical Sciences, The University of Papua New Guinea</i>
2.00-2.15	Optimizing future road infrastructure for societal benefit and environmental protection in Papua New Guinea <i>presented by Dr Mason Campbell, Field Director and Postdoctoral Research Fellow, Centre for Tropical Environmental and Sustainability Science, College of Science and Engineering, James Cook University. Co-presented by Dr Mohammed Alamgir, Postdoctoral Fellow, Centre for Tropical Environmental and Sustainability Science, College of Science and Engineering, James Cook University</i>
2.15-2.30	Landslide and Road Design Assessment of the Eastern Highlands Segment of the Highlands Highway <i>presented by Mr Ezeckiel Hecko, Lecturer, Environmental Sciences and Geography, School of Natural and Physical Sciences, The University of Papua New Guinea</i>
2.30-2.45	Increasing number of micro-port developments and risks to coastal ecosystems in PNG <i>presented by Dr Nathan Waltham, Principal Research Scientist, TropWATER, James Cook University</i>
2.45-3.00	Understanding the preconditions for community initiated WASH improvements on Los Negros Island, Manus Province of Papua New Guinea <i>presented by Mr Peter Sharry, Director and Principal, AXIOM Water, Australia</i>
3.00-3.30	<i>Afternoon Tea at MLT</i>

PNG IMPACT INNOVATION LAB FIVE: SCIENCE 1 BUILDING, ROOM S108

INNOVATION IN HEALTH SERVICE DELIVERY	
AM/PM	CONCURRENT SESSION 1
9.00 – 9.15	Telehealth: New Horizon in Management of Diabetes in Rural North Queensland -Prospect for Use in PNG <i>presented by Associate Professor Usman Malabu, Consultant Endocrinologist, School of Medicine, James Cook University</i>
9.15 – 9.30	Health: Using mobile phones for the monitoring and evaluation of health messages: A pilot study on HIV education in three communities in the Eastern Highlands Province of Papua New Guinea <i>presented by Ms Alessandra Mel, Territory Sales Executive, Bemobile-Vodafone, Papua New Guinea</i>
9.30 – 9.45	Rescue Swags for Treaty Villages <i>presented by Ms Tracey Beikoff, Founder and Director of Rescue Swag, Australia</i>
9.45 - 10.00	Integrating male circumcision for HIV prevention with initiation ceremonies in Yangoru-Saussia, East Sepik: An exploratory study <i>presented by Mr Clement Manineng, PhD Candidate, College of Medicine and Dentistry, James Cook University</i>
10.00 -10.15	Oil Search and PNG Government Partnership: Making an impact on health service delivery <i>presented by Miss Stephanie Copus-Campbell, Executive Director, Oil Search Foundation</i>
10.15-10.30	Vaccination and nutritional status of children in Karawari, East Sepik Province <i>presented by Dr Louis Samiak, Lecturer, School of Medicine and Health Sciences, The University of Papua New Guinea</i>
10.30–11.00	Morning Tea at MLT

HEALTH, CULTURE AND BEHAVIOUR	
AM/PM	CONCURRENT SESSION 2
11.00-11.15	Strengthening provision of sexual and reproductive health knowledge in communities of PNG: One step towards research impact <i>presented by Dr Michelle Redman-McLaren, Adjunct Senior Research Fellow, College of Medicine and Dentistry, James Cook University. Co-presented by Mrs Rachael Tommbe, Senior Lecturer, Pacific Adventist University</i>
11.15 – 11.30	Health Behaviour Change Theories Application to Health Promotion Programs in PNG <i>presented by Dr Madeline Lemeki, Lecturer, School of Medicine and Health Sciences, The University of Papua New Guinea</i>
11.30 – 11.45	Mammographic parenchymal patterns and breast cancer risk profiles of Papua New Guinea women: A baseline of the screening population <i>presented by Mrs Ruth Pape, Lecturer, School of Medicine and Health Sciences, The University of Papua New Guinea</i>

HEALTH, CULTURE AND BEHAVIOUR	
11.45 – 12.00	Girlhood to Womanhood: Experiences of adolescent girls at menarche in Papua New Guinea <i>presented by Mrs Elizabeth Gumbaketi, Higher Degree Research Student, College of Medicine and Dentistry, James Cook University</i>
12.00 – 12.15	Informed consent to medical treatment in the context of traditional customs in PNG <i>presented by Mr Alfred Minei, Lecturer, School of Law, The University of Papua New Guinea</i>
12.15-12.30	The current practice of induced abortion in Papua New Guinea <i>presented by Professor Caroline De Costa, Professor of Obstetrics and Gynaecology, College of Medicine and Dentistry, James Cook University</i>
12.30 –1.30	Lunch at MLT

POPULATION HEALTH	
AM/PM	CONCURRENT SESSION 3
1.30-1.45	Status of Iodine Nutrition and Salt iodization among the Kamea community in Kotidanga LLG Gulf Province, Papua New Guinea <i>presented by Mr Janny Goris, Senior Public Health Nutritionist, Department of Queensland Health, Papua New Guinea Corporate Mission</i>
1.45-2.00	The oral health status of school children on and near the Kokoda trail <i>presented by Dr Yvonne Golpak, Teaching Fellow, Division of Dentistry, School of Medicine and Health Sciences, The University of Papua New Guinea</i>
2.00-2.15	Infectious disease epidemiology in PNG: Lessons in diversity <i>presented by Associate Professor Jeffrey Warner, Biomedical Sciences, College of Public Health, Medical and Veterinary Sciences, James Cook University</i>
2.15-2.30	Molecular epidemiology of tuberculosis in the Balimo region, Papua New Guinea <i>presented by Dr Vanina Guernier, Research Fellow, Australian Institute of Tropical Health and Medicine, James Cook University</i>
2.30-2.45	The epidemiology of tuberculosis in the Balimo district of Western Province, PNG <i>presented by Ms Tanya Diefenbach-Elstob, PhD Candidate, College of Public Health, Medicine and Veterinary Sciences, James Cook University</i>
2.45-3.00	Diabetes and Urbanisation in Papua New Guinea: A Wake-up Call <i>presented by Associate Professor Usman Malabu, Consultant Endocrinologist, School of Medicine, Australian Institute of Tropical Health and Medicine, James Cook University</i>
3.00-3.30	Afternoon Tea at MLT

PNG IMPACT INNOVATION LAB SIX: SCIENCE LECTURE THEATRE (SLT)

CLINICAL SKILLS	
AM/PM	CONCURRENT SESSION 1
9.00 – 9.15	Building sustainability in newborn resuscitation skills and knowledge in the Eastern Highlands <i>presented by Dr Karen New, Midwifery Clinical Academic Fellow, School of Nursing, University of Queensland. Co-presented by Ms Lucy Mahabi, Midwife and Deputy Director Rural Outreach, Nursing, Goroka Hospital</i>
9.15 – 9.30	Identifying the barriers to the integration of research into graduate midwives' professional practice in the Highlands of Papua New Guinea <i>presented by Ms Jane Connell, Postgraduate Student, College of Public Health, Medicine and Veterinary Sciences, James Cook University</i>
9.30 – 9.45	Barriers and Facilitators to Effective Tuberculosis Infection Control Practices in Madang Province, PNG: A Qualitative Study <i>presented by Mr Gigil Marme, Lecturer, Health Management and Systems Development, Divine Word University</i>
9.45 - 10.00	Challenges of neonatal hypothermia: Observation and assessment to improve clinical outcomes for neonates <i>presented by Dr Karen New, Midwifery Clinical Academic Fellow, School of Nursing, University of Queensland</i>
10.00 -10.15	Helping Babies Breathe Resuscitation training in resource limited environments: An observational pilot study evaluating the feasibility of conducting follow-up assessments in survivors <i>presented by Dr Karen New, Midwifery Clinical Academic Fellow, School of Nursing, University of Queensland. Co-presented by Ms Aiva Pikuri, Midwife, Goroka Hospital</i>
10.15-10.30	The right medicine for rural- training tomorrow's doctors <i>presented by Professor Richard Murray, Dean of Medicine and Dentistry, College of Medicine and Dentistry James Cook University. Co-presented by Professor Nakapi Tefuarani, Executive Dean, School of Medicine and Health Sciences, The University of Papua New Guinea</i>
10.30–11.00	Morning Tea at MLT

DRUG DEVELOPMENT AND QUALITY	
AM/PM	CONCURRENT SESSION 2
11.00-11.15	Counterfeit and substandard antimalarial drugs: Development of a simple tool for the rapid assessment of the quality of artemether-lumefantrine tablets in developing countries <i>presented by Professor Beverly Glass, Professor of Pharmacy, College of Medicine and Dentistry, James Cook University</i>
11.15 – 11.30	Poor Quality Medicines: Quality Assessment of Amoxicillin Oral Products in the National Capital District, Papua New Guinea <i>presented by Naomi Hehonah, Senior Lecturer Pharmacology, School of Medicine and Health Sciences, The University of Papua New Guinea</i>

DRUG DEVELOPMENT AND QUALITY	
11.30 – 11.45	Common Traditional Medicinal Plants used to manage Type 2 Diabetes Mellitus in Solomon Islands, Fiji and Tonga <i>presented by Ms Numa Vera, Lecturer, Department of Pharmacy and Pharmacology, School of Health Sciences, Fiji National University</i>
11.45 – 12.00	Innovative systems-based research as a new approach to develop vaccines and diagnostics to improve public health <i>presented by Professor Denise Doolan, Professorial Research Fellow, Australian Institute of Tropical Health and Medicine, James Cook University</i>
12.00 – 12.15	Community randomized safety trial of triple-drug mass drug administration for lymphatic filariasis in Papua New Guinea <i>presented by Dr Livingstone Ravul, Senior Research Fellow, Vector Borne Diseases Unit, Papua New Guinea Institute of Medical Research</i>
12.15-12.30	Harnessing Plant cyclotides (cyclic plants protein) as templates for drug designing in PNG <i>presented by Mr Reynold Phillip, Lecturer, Chemistry, School of Natural and Physical Sciences, The University of Papua New Guinea</i>
12.30 –1.30	Lunch at MLT

MEDICINE	
AM/PM	CONCURRENT SESSION 3
1.30-1.45	Psoralen induced Phytophotodermatitis by MORACEAE on common skin pigments in PNG presented by Mr Napoleon Wale, Final Year Research Project Student, Applied Sciences, Papua New Guinea University of Technology
1.45-2.00	Expanding the capacity of Papua New Guinea health districts to utilise immune-based diagnostics for extra-pulmonary tuberculosis: A rural district hospital to reference laboratory model <i>presented by Associate Professor Catherine Rush, Australian Institute of Tropical Health and Medicine, James Cook University</i>
2.00-2.15	Restoration of UPNG Pathology Museum Specimens: A collaborative project presented by JCU and UPNG <i>presented by Dr Teresita Aceret, Technical Officer, College of Medicine and Dentistry, James Cook University</i>
2.15-2.30	Smoking, Particulate fuel use, increasing BMI (but not betelnut use) increase the probability of obstructive airway conditions in adults from NCD, PNG <i>presented by Dr Shalon Taufa, Lecturer, School of Medicine and Health Sciences, The University of Papua New Guinea</i>
2.30-2.45	Iron content in Fortified Rice sold in the NCD, PNG <i>presented by Associate Professor Victor Temple, School of Medicine and Health Sciences, The University of Papua New Guinea</i>
2.45-3.00	Influence of region of origin on the anthropometric and performance characteristics in Papua New Guineans: A work in progress <i>presented by Mr Kieren Sciberras, Honours Student, Sport and Exercise Science, James Cook University</i>
3.00-3.30	Afternoon Tea at MLT

ABSTRACTS

PNG IMPACT INNOVATION LAB ONE: SCIENCE BUILDING, ROOM 211

LIVELIHOODS, AGRICULTURE AND FISHERIES

CONCURRENT SESSION 1

Development of Sea cucumber mariculture in the Tigak Islands, PNG presented by Mr Nicholas Daniels, Mariculture Research Technician, National Fisheries Authority

Sea cucumber or béche-de-mer, in dried form, is a luxury commodity in Asian markets, especially China, for its tonic and medicinal purposes. The Pacific region has supplied the trade since the 1950s and Papua New Guinea was a major exporter until overfishing led to a 7-year closure of the fishery by the National Fisheries Authority imposed moratorium, causing hardship in PNG as the commodity is ideal for remote areas because of easy processing techniques and high income. In New Ireland Province, the Tigak Islands were a supplier of béche-de-mer, with the main target species being Sandfish (*Holothuria scabra*), until it got overfished. As a promising candidate in mariculture, sandfish may provide a sustainable livelihood in the country's coastal areas. NFA's Nago Island Mariculture Research Facility, together with the Australian Center for International Agricultural Research, have been researching methods on sandfish production and culture techniques. The outcome is still ongoing with positive feedback from the communities. Mariculture has not been part of tradition in PNG but there has been strong interest from Tigak communities. The presentation reports on the ongoing research into the development of sea cucumber mariculture as an income generating opportunity for PNG coastal communities.

Nicholas Daniels, National Fisheries Authority, danielsnickie@gmail.com

Why have so many cocoa smallholders been unable to adopt Cocoa Pod Borer management practices presented by Mr Esley Peter, PNG Cocoa Coconut Institute Ltd. Co-presented by Dr Gina Koczberski, Senior Research Fellow, Curtin University

In 2006, cocoa farmers' livelihoods in ENBP were devastated with the arrival of the invasive pest, Cocoa Pod Borer (*Conopomorpha cramerella*) (CPB). Cocoa production fell by more than 80%, resulting in a massive fall in incomes. Despite some recent improvements in production, returns from cocoa are still relatively low and many families continue to struggle to make a living. The presentation draws on field data collected from 2004 to 2017 and is in two parts. The first part outlines the range of livelihood responses made by smallholders as they sought to cope with the impacts of CPB. The second part addresses the question: why has the impact of CPB been so great? This section discusses the low uptake of CPB extension training by affected farmers and explores why many farmers have been unable or reluctant to adopt CPB management techniques. We highlight farmers' limited access to quality training and support programs and the large increases in labour and farming inputs required to control CPB as factors explaining why smallholder cocoa production remains low. The experiences and challenges of extension in a CPB environment have implications for the coffee industry now threatened by the newly arrived Coffee Berry Borer.

Peter Esley, Cocoa and Coconut Institute, peter_esley@yahoo.com, George Curry, Curtin University, g.curry@curtin.edu.au; Gina Koczberski, Curtin University, g.koczberski@curtin.edu.au.

Using low technology systems to farm native fish species (Milkfish) in coastal PNG communities for food security and livelihood sustenance presented by Ms Lina Pandihau, Inland Fishery Officer, National Fisheries Authority

Farming of marine and estuarine native fish species such as milkfish using low technology systems in the coastal provinces of PNG is a project initiated to explore the potential of culturing native fish species at artisanal level for consumption and income generation. Though farming of native marine fish species is not a popular practice in PNG, there is interest and potential to invest and develop the underutilised coastal fisheries resources. Since there is existing artisanal markets for those native fish species, there is growing opportunity for Papua New Guineans to capitalise and invest in. Also, the growing human population with the increasing demand placed on the wild fisheries resources is becoming evident in most densely populated coastal communities. Introducing aquaculture of finfishes to coastal communities in PNG is timely, as it will address issues such as overfishing of not only commercially important fish species but other wild fish stocks. Additionally, it will equip locals with new technical knowledge to explore the potential of establishing sustainable coastal aquaculture of native fish species which they can pursue to sustain their livelihoods.

Ms Lina Pandihau, National Fisheries Authority, lpandihau@fisheries.gov.pg

Seaweed farming in atolls and coastal provinces of PNG for income generation and reduction fishing pressure on wild fisheries presented by Mr Philip Sokou, Nago Mariculture Facility Manager, National Fisheries Authority

Eucaemoid Seaweed of the species *Kappaphycus alvarezii* has been farmed in Papua New Guinea since 2010. The two Provinces that pioneered farming of this seaweed were the Autonomous Region of Bougainville and Milne Bay. In both Provinces, this venture was initiated by the locals as an alternative livelihood following closure of the sea cucumber fishery. Seaweed has become the most intensively pursued marine commodity by the locals in the provinces involved in farming. The National Fisheries Authority has extended the trial culture of this aquaculture commodity to other maritime provinces in PNG to increase participation of local Papua New Guineans in the culture and export of the sea weed. Seaweed requires less technical specialty, low capital and labour input and yet a very high yield and fast crop turnover. Therefore, this aquaculture activity is very well suited for rural, coastal communities in deriving income and sustaining their livelihood

Philip Sokou, National Fisheries Authority, psokou@fisheries.gov.pg

Smallholder Tree Farmers Adoption Behaviour Towards Nursery Technologies in Eastern Highlands Province: Implication for Policy Intervention for Woodlot Farming in PNG presented by Ms Vincianna Andrew, Community Forestry Officer, PNG Forestry Authority

The smallholder tree farmers' adoption behavior towards the transfer of basic nursery training looks at motivating and encouraging woodlot farmers of Eastern Highlands Province. This research examines the barriers and factors affecting tree farmers' decision to uptake the innovation. There were 28 primary recipients identified from the two nursery training conducted through the ACIAR project to participate in the follow-up survey. The research unfolds in two segments which aimed at collecting the socioeconomic data using questionnaires and focus groups for the qualitative survey. The results of the research identified three cohorts of farmers which behaved differently towards the innovation. The three cohorts of farmers are the champion tree farmers, discouraged farmers due to lack of effective monitoring and supervision and the last group are the dependent farmers. 55% of the recipients accepted the innovation, whilst 25% of the recipients were discouraged after accepting the innovation and the 20% were dependent on the implementing agency (PNG Forest Authority) for moral support in order to accept the innovation. The importance of the study revealed that the smallholders still had the passion in tree domestication and through intervention of active policies and strategies will enhance community forestry approaches for plantation development in PNG.

Dr. Alfred Faiteli, UPNG, afaiteli@gmail.com; *Vincianna Andrew*, The PNG Forest Authority, vandrew004@gmail.com

Mapping the impact of the 2015-2016 El Nino on food security in Papua New Guinea using mobile Vulnerability Analysis and Mapping presented by Dr Venkateswarlu Dheeravath, World Food Program

The 2015-2016 El Niño climate event resulted in widespread drought and frost in Papua New Guinea. (PNG). The World Food Programme (WFP) mobile Vulnerability Analysis and Mapping (mVAM) technology and methodology was developed in 2013 and tested in more than 30 countries. It uses mobile technologies to collect food security information remotely. WFP in support of the National Disaster Centre and the Department of Agriculture and Livestock conducted two mobile food security assessments (Jan-Feb 2016 and Nov-Dec 2016) to better understand how the drought and frost had impacted household food security and livelihoods throughout PNG and whether households had managed to recover. The surveys collected data via voice calls using the Digicel Network covering all 326 LLGs of PNG. This paper presents the methodology used and results obtained that guided subsequent humanitarian relief to the most affected areas.

Venkateswarlu Dheeravath, World Food Program, venkat.dheeravath@wfp.org, *Siemon Hollema*, World Food Programme *Aaron Wise*, World Food Programme

LIVELIHOODS AND COMMUNITY DEVELOPMENT

CONCURRENT SESSION 2

Sustaining the communities of the Los Negros Islands, Manus Province, Papua New Guinea presented by Mr Simon Towle, PhD Candidate, James Cook University

The Australian Asylum Seekers Processing Facility on Los Negros Island in Manus province, Papua New Guinea, will close in October 2017, creating a legacy of severe local unemployment, environmental degradation and other issues arising from the operation and closure of the centre. The cost of diesel fuel for the island's power generator, fishing and agricultural industries, is one of the greatest challenges for Manus's subsistence economy. It has a large commercial coconut crusher located in the provincial capital Lorengau, and 26 under-utilised copra plantations easily accessible by barge. The aim of this paper is to explore sustainable business opportunities designed to revive and maintain the local economy of Manus following the closure of the Centre.

Manus is a well-placed source of high quality fresh food and sustainable bio- fuel production, despite being geographically remote from the mining activity and the economic benefits derived from mining enabled by 'on the job' training and mentoring to international standards to deliver enterprises including aquaculture, and existing copra plantations with the ability to supply long term bio-fuel operations.

This paper proposes practical on-ground training and action to enhance the capacity of Manus people to engage in the PNG emerging economy in a sustainable way.

Simon Towle, JCU, simon.towle@my.jcu.edu.au; *Paul Lynch*, JCU, paul.lynch@my.jcu.edu.au

South Fly Treaty Village Resilience Program: Supporting Sustainable Community-Led Development presented by Ms Johanna Johnson, Senior Project Manager, Treaty Village Resilience Program, Reef & Rainforest Research Centre

The Treaty Village Resilience Program works with communities in the South Fly District, PNG. The project began in 2015 by piloting an innovative approach to building community resilience and providing support for sustainable development in four remote disadvantaged Treaty Villages on the PNG-Australian border. Communities are impacted by seasonal flooding, extended drought, high water tables, coastal erosion, sea-level rise and limited resources and infrastructure. 52 Community Rangers have been trained and are applying their new skills in plumbing, building, well digging, sanitation, disaster response, first aid and emergency response, marine rescue, community health and leadership. The 2015-2016 El Nino had significant impacts on the Treaty

Villages, however, there was a clear difference between the communal ‘fortunes’ of the villages with water, health and sanitation infrastructure and skills, and other Treaty Villages. For example, new water storage enabled the Mabaduan School to remain open while other schools closed due to water shortages. This ‘change to resilience’ framework developed by the project is based on successful Ranger programs across northern Australia. Results suggest there is a fundamental disconnect between centralized development policy and remote community aspirations. This community-driven development approach empowers communities to lead local development and deliver long-term outcomes.

Johanna Johnson, Sheriden Morris, & David Rutherford, Reef & Rainforest Research Centre

Building Resilience in the Treaty Villages presented by Mrs Yolonde Entsch, Project Leader RRRC Connect, Reef & Rainforest Research Centre

The Reef & Rainforest Research Centre (RRRC) manages a joint Australian-PNG community development program called ‘Building Resilience in the Treaty Villages’. The aim of the program is to increase the villages’ self-sufficiency and ability to resist the effects of disease and drought. The program has successfully trained 52 Treaty Village men and women as Community Rangers using a uniquely Australian model. Community Rangers are key community-building personnel skilled in sanitation, first aid, community health awareness, plumbing, building, well digging, disaster response, marine rescue and leadership. These rangers have built eight new wells, delivered 1.25 million litres of water storage capacity to the four Treaty Villages (and a further 90,000L in adjacent Katatai village), and have refurbished the Mabaduan medical centre that was unusable.

Yolonde Entsch, Reef & Rainforest Research Centre, yolonde@rrrc.org.au

Changing Role of Women in Fresh Food Marketing: A Case Study of Port Moresby presented by Ms Lorraine Taram, Tutor, School of Natural and Physics Sciences, The University of Papua New Guinea

This research identifies how women from different ethnic backgrounds in Port Moresby contributed to food security in households despite the continuous demand placed on them by the society. Five markets (Gerehu, Waigani, Tokarara, Gordons and Koki) were selected to carry out this study. The study gathered information from women who were involved with selling the three types of food crops; sweet potatoes, bananas and green vegetables. A total of 105 women were interviewed in the study. Questionnaires and interviews were used to collect information on the socio-economic factors affecting the women’s households. Findings according to this research showed that majority of women selling at the five market were from the Highlands (47.6%) and Papuan (37.1%) regions. Most women (69.5%) in all markets were providing for their households more than their husbands and other members of the households. Majority of women (46%) had poor knowledge of the land status. Most of the women (57.1%) rely on PMVs to bring their goods to the market. (81%) of women at Tokarara walk to the market. The study revealed a fragmented process of marketing system which has also contributed to unsustainable practices in small-farm households in the rapid changing urban areas like Port Moresby.

Lorraine Maro Taram, UPNG, lorrainetaram@gmail.com; Dr. Alfred Faiteli, UPNG e: afaiteli@gmail.com

TWILIGHT BASKET: Building communities through sports presented by Ms Signe Dalsgaard, Senior Lecturer, School of Law, The University of Papua New Guinea. Co-presented by Joel Kahlu, Basketball Federation of Papua New Guinea

In 2016, The Basketball Federation of Papua New Guinea (BFPNG), together with FIBA Hoops for Health and the Australian Federal Police introduced a pilot project striving to give young people in Port Moresby the opportunity to spend the duration of their Friday evenings in a positive environment, where emphasis was placed on fun, friendship and fitness. Twilight Basket especially aimed at engaging with children and young people from high crime areas of Port Moresby, where the levels of children living in the street are high. While the primary aim of the project was to decrease crime levels on Friday evenings for the targeted neighbourhoods, a secondary goal was to provide the children with a healthy alternative to the negative influences of the street. Subsequent goals were to improve the communication between the street-children and the local police as well as increasing the

children's interaction with the wider community. This paper reviews the findings from the initial six-week pilot project and the subsequent implementation of the project in Port Moresby.

Signe Dalsgaard, UPNG, sdalsgaard@upng.ac.pg

Answering Calls for Help - Calls to the 1-Tok Kaunselin Helpim Lain - PNG's first toll-free telephone counselling service - in the first two years of operation presented by Ms Sally Beadle, Team Leader for Gender, Child Protection and Resilience, Childfund PNG

Papua New Guinea experiences some of the worst statistics for gender-based violence in the world. It is estimated that over two thirds of women experience physical and/or sexual violence in their lifetime. The National Strategy to Prevent and Respond to GBV highlights the need for comprehensive services and reliable data to guide response efforts. In 2015, ChildFund and Family and the Family and Sexual Violence Action Committee established a national toll-free telephone counselling service for people experiencing GBV. In a country where 87 percent of the population live in rural and remote areas, but where mobile phone ownership is high, a telephone counselling service is valuable. For some survivors and perpetrators, this is the only service that is accessible. In the first two years of operation, the 1-Tok Kaunselin Helpim Lain – 7150 8000 – has received over 7,500 calls. Call intake data represents a unique data source, analysis of which reveals new complexities about violence and help-seeking behaviours. This presentation looks at this data, including gender, age, location, presenting issues and referrals made. This sheds light on the scope of the issue and how the service system could be strengthened to respond better to the complex needs of survivors and perpetrators.

Marcia Kalinoe, Sexual Violence Action Committee; *Wesh Siku*, ChildFund Papua New Guinea, sbeadle@childfund.org.pg

HUMAN CAPITAL AND LABOUR

CONCURRENT SESSION 3

CHILD LABOUR: Children in the informal economy in Port Moresby, PNG presented by Ms Olive Mandui, Student, Legal Training Institute, Papua New Guinea

Child labour in the last century has become a global phenomenon with wide ranging social implications. Because of its worldwide prevalence and impact on human societies, this issue often warrants international attention. Child labour deprives children of their education and puts at risk their mental and physical development. In Papua New Guinea, children are routinely engaged in paid or unpaid work, compromising their educational development, but unfortunately most cases go unreported. The scope of this research paper was mainly focused on the issue of children involved in the informal economy in Port Moresby, Papua New Guinea (PNG). The study counted children of schooling age in three major market places in Port Moresby at a time where they should have been at school, both to identify the extent of the problem, but also to investigate if there was a gender discrepancy. Furthermore, the research aimed to identify laws and policies on child labour in PNG and whether or not they are effectively implemented.

Signe Dalsgaard, Senior Lecturer, UPNG. e: sdalsgaard@upng.ac.pg

Human Resource Development Impediments in the Local-Level Governments: The Cause of Poor Services Delivery in PNG presented by Mr Peter Kanaparo, Lecturer, School of Business and Public Policy, The University of Papua New Guinea

The level of education and type of skills that the public servants at the local government level have under the current reform on the provincial and local-level government reflects how efficient and effective basic services like health, education and the general implementation of the development projects at the local level government (LLG) are delivered. The criticism of public service machinery as inefficient and ineffective in delivering of basic services by the critics is very common these days. This research is based on the conclusion that: Human resource impediments are the cause of poor service delivery in PNG. Perhaps, public servants

interviewed in Gulf and Central Provinces raised similar sentiments about the provincial and LLG systems in PNG, which is ineffective and inefficient in delivering the basic services to the populace at the district and ward levels. This is plagued by lack of resources like technical expertise and skilled human resources at the LLG and ward levels. However, lack of providing appropriate human resource development programs like in-house training and designing of special education program to enhance technical staff at the provincial and district level impedes development in most rural areas, and this is the bases of our presentation.

Peter Kanaparo, Lecturer, School of Business and Public Policy, UPNG. e: pkanaparo@upng.ac.pg

Relevance of organisational justice and support on academics' affective commitment and turnover intentions presented by Dr Carolyn Timms, Lecturer, College of Healthcare Sciences, James Cook University. Co-presenter Mr Michael Esop, Lecturer, School of Humanities and Social Sciences, The University of Papua New Guinea

Retaining academic staff in developing countries such as Papua New Guinea (PNG) is a challenge for university managements. Academic salaries and living conditions of National staff are not commensurate with International staff or even those afforded to equally qualified National staff outside the university sector. Within this context we explored perceptions of organisational justice and support in relation to commitment and intentions to turnover of National academic staff members in a PNG university. The research found that affective commitment was predicted by organisational support, whereas the lack of organisational support predicted academic staff turnover. It is therefore observed that Universities must provide supportive environments to enable staff to remain focused and committed in order to maintain high morale and reduce turnover in academic staff.

Michael Esop, Psychology, UPNG, esop.michael@gmail.com; *Dr Carolyn Timms* Psychology, JCU, carolyn.timms@jcu.edu.au

Tropical Rugby Union College: Private Enterprise College lightly affiliated with James Cook University Rugby Union Club to benefit Tropical Societies presented by Mr Greg Howard, Consultant Engineer and Technical Director, Tropical Rugby College, James Cook University

The College is a privately funded enterprise facilitating existing and new research to benefit several levels of society in Pacific Island and other Tropical Countries. The Technical Head is Mr Greg Howard B Eng. and B App Science (Human Movements) (Hons). The field of sport and society well documents beneficial connections between the two. Mr Howard is fluent in French and Tok Pisin with a Village Education in PNG Jungle Areas parallel to Western Schooling. Mr Howard's Skill Development Theory creates or substantially augments existing skill levels by 28% to 200% in a 1-hour skills coaching session involving no practice. The game of Rugby becomes highly exciting to players and spectators alike. Examples are: a) PNG U16 National Team win over Central Queensland at Nudgee College Brisbane in mid 2000s. The game saw such excitement, spectators were leaving 3 adjacent matches to run to this match to see what was causing that excitement, b) Western Samoa 38 v Wales 31 in WC 1999, c) Tiny Tonga 25 v Springboks 30 in WC 2011 d) Kimbe Rebels 19 v Qld Reds 12 Sevens Rugby in early 2010s. The latter match delighted Gold Coast and PNG Spectators alike to awaken society interests in Rugby.

Mr Greg Howard, JCU, latinnine@gmail.com

Identifying the skills needed by Business in Papua New Guinea presented by Mr Raymond John, Lecturer, School of Business and Public Policy, The University of Papua New Guinea

PNG continues to suffer from the paradoxical problem of shortage of and surplus human resources. Offering the outdated programs by the educational institutes that are not in demand by the business is the main reason for the shortage and surplus human resources in the country. Many PNGeans are unable to equally participate in the economy owing to lack of required skills needed by the business. The current paper aims at identifying the types of skills needed by the business in PNG. A detailed survey of relevant managers of business in PNG will be undertaken to identify which types of specific skills are/ will be needed by the business in PNG. However,

preliminary results data of Deloitte Survey will be used appropriately. The findings and results will have implication for policy makers in the higher education, business and Government to formulate appropriate policy and strategy to reduce the gap between demand and supply of skills in PNG.

Raymond Kamb John, UPNG, rjohn@upng.ac.pg; *Pulapa Subba Rao*, Oriental University, pulapas@rediffmail.com

Talent: A Parable or a Process: Journey into the Talent Hotspots of PNG presented by Mr Sanjay Viswanathan, Talent Development Manager, Career Development, IBS University

Talent is the small, silent yet powerful weapon which epitomizes every single achievement of worth pursued by human beings. Certain set of factors have played an important role in the creation of such talent hotbeds throughout the world since time immemorial. This study will throw light on the secret of talent, it will discuss based on exploratory surveys how we can unlock it and what cutting edge neuroscience and firsthand data gathered on journeys through exhilarating talents hotspots in Papua New Guinea corroborates. The findings of this exploratory study will illuminate the concept of talent and explain the process which could decipher the talent code for our students, teachers and any patron of talent and promote this noble cause for posterity in the tertiary educational institutions across Papua New Guinea.

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PNG IMPACT INNOVATION LAB TWO: MAIN LECTURE THEATRE (MLT)

GOVERNANCE AND NATION BUILDING

CONCURRENT SESSION 1

Nation Building and The Archaeology of the Great Papuan Plateau presented by Professor Bryce Barker, Professor/Lecturer, School of Arts and Communication, University of Southern Queensland

Archaeological research at Kuk in Papua New Guinea has shown the world that some of the earliest agriculture in the world first occurred in the New Guinea Highlands and more recent work at Caution Bay has revealed the first evidence of Austronesian seafaring voyagers to the southern coast of Papua. The significance of this kind of research lies not only in its importance in telling the story of how the people of Papua came to be there but also in its potential to provide a narrative of a common past contributing to nation building in an incredibly culturally diverse nation. The Great Papuan Plateau (GPP) Archaeological project, aims to add to the story of the human occupation of the nation of PNG. The GPP project has identified large limestone rock-shelters, many with engraved art, that have potential to not only provide evidence of the first human occupation of the Plateau and the antiquity of the art, but to also shed light on the very earliest movement of modern humans into the Greater Australian continent (Sahul). This research thus has potential to provide evidence of Papua as central to the movement of peoples into Australasia and the Pacific.

Bryce Barker, University of Southern Queensland, barker@usq.edu.au

Closing the Gender Gap in PNG Parliament presented by Ms Geejay Milli, Lecturer, School of Humanities and Social Sciences, The University of Papua New Guinea. Co-presented by Dr Maxine Newlands, Lecturer, Political Science, James Cook University

One hundred and sixty-five female candidates stood in the 2017 Papua New Guinea General Elections, the largest candidacy by far. Historically women candidates have faced inequality and accusations of playing the gender card. A combination of Big man syndrome and a parliamentary system wedded to colonial history has seen just 7 women sitting as members of the PNG parliament in 42 years. Greater gender balance will reduce inequality, create better leadership to help secure PNG's future as one of the largest countries in the Pacific region. Women in rural provinces are less inclined to participate in political processes, whilst women from coastal regions are more highly educated and tend to be more vocal on political issues. In focusing on development in coastal provinces could see great gender balance, but may see wider divisions between rural and coastal provinces. In a patriarchal post-colonial PNG, this paper asks what can men and women do to find a more balanced gender representation in parliament? We draw on archival, parliamentary and current literature, original interview data and news reporting on female candidates in the 2017 election to establish if the solution could be found in expanding the middle classes?

Geejay Parighii Milli, UPNG, Geejay.milli@gmail.com; Maxine Newlands, JCU, Maxine.newlands@jcu.edu.au

Auditors performance of fraud risk assessment: Evidence from Papua New Guinea presented by Mr Robert Kutapai, School of Business and Public Policy, The University of Papua New Guinea

In recent years, financial statement frauds in large companies such as E WorldCom, and Waste Management have attracted different stakeholders' attentions concerns about the reliability of audited financial statements. As a result, IAS 240 and SAS 99 were released to aid auditors better assess and detect financial statement fraud. In PNG, these standards are fully adopted with little or no alterations to them. The current study invests whether PNG auditors consider IAS 240 and SAS 99 standards to perform audit task evaluates whether factors such as professional skepticism, expertise and ethical values influence auditors' performance of the task.

A total of 46 auditors were surveyed to capture perceptions and experiences on the fraud risk assessment task and factors such as professional skepticism, expertise and ethical values. We used a five point Likert scale

questionnaire, rated from strongly agree to strongly disagree, to collect data. Descriptive analysis and SPSS static software were used to analyse the data.

Results indicate that PNG auditors are qualified, have experienced fraud and co fraud risk assessment tasks, using the IAS 240 and SAS 99 guidelines, during audits. The results also find that auditors' expertise and ethical values have significant effect on audit performance of fraud risk assessment tasks while professional skepticism is not statistically significant.

Robert Kutapai, UPNG, rkutapai@upng.ac.pg; *Rafiudden Ahmed*, JCU, rafiudden.ahmed@jcu.edu.au

A Socioeconomic Impacts Study on Gambling in Four Provinces: The Perceptions Realities and Disparities of Playing Pokies in PNG presented by Mr Peter Kanaparo, School of Business and Public Policy, The University of Papua New Guinea

There is currently a compelling observation and perception amongst gamblers, non-gamblers, organizations and other stakeholders that the issue of gambling and controlling pokies can only occur when individual gamblers and National Gaming Control Board put in place key personal and regulate restrictions and policies on controlling the pokies games in the country. This realization, if seriously undertaken, has the potential for reducing poverty and saving money. Although this challenge is medium to long term, requiring concerted attention and significant amounts of work, there are some countries in the region that have already begun the process of shaping and revamping their existing regulations to facilitate the process for improving the National Gaming Control Board and gradual passage to wise gambling management since it is the government's revenue generating organisation.

The aim of this paper is to develop a methodology for measuring the socioeconomic impact of playing pokies in Papua New Guinea (PNG). This research highlights a scoping or rapid appraisal of perceptions, realities and disparities of gambling or playing pokies in PNG, in the context of the Gamblers in the four regions (Highlands, Islands, Momase and Southern). Sensible and reasonable gambling and controlling, is crucial to realize the benefits, realities, disparities and disadvantages of gambling. The study examines the perceptions, realities and disparities of the Gamblers. The comparative study, amongst others, has benchmarked the status of the citizens playing pokies and the socioeconomic impacts they faced. The outcome of the study will be able to suggest gambling and controlling policy actions and principles for both National Gaming Control Board and the Gamblers.

Peter Kanaparo, UPNG, pkanaparo@upng.ac.pg; *Imelda Agon*, National Gaming Control Board, PNG

Shifting coalitions: Does party policies really matter? presented by Mr Michael Kabuni, Teaching Fellow, Department of Political Science, School of Humanities and Social Sciences, The University of Papua New Guinea

From 1964 elections for the first House of Assembly to the 2017 National Elections, no single political party in Papua New Guinea has ever succeeded to muster the majority to form the government. Coalition governments have compensated for the lack of dominant political parties. This study will analyse the political parties that are in the government (The Alotau Accord 2) and opposition (The Alliance) to determine whether these coalitions are based on political party policies. Assuming that political parties with similar political parties are in the same coalition, this study will analyse their policies and draw a conclusion as to whether political parties matter when it comes to formation of a coalition for the 10th Parliament of Papua New Guinea.

Michael Kabuni, UPNG, mkabuni@gmail.com

PEACE AND WELL-BEING

CONCURRENT SESSION 2

Village Court in an Urban Setting: Experiences from Hanuabada presented by Ms Signe Dalsgaard, Senior Lecturer, School of Law, The University of Papua New Guinea

Papua New Guinea has plural legal systems with the underlying law providing the un-enacted law that applies when there is no legislation governing the particular legal area. This is, among other areas, made up of Customary Law. While much of PNG custom has been integrated into the formal legal system, local customary practices still apply in village settings as regulated through the organic law. This project has followed the Village Court of Hanuabada, Port Moresby, where the Traditional Owners and custodians of the capital, the Motuan people, reside. Through six months of 2017, the cases before the court were documented with special interest on the procedural practices of the Magistrates presiding. Findings from the project will be presented with particular focus on the role the Court and the Magistrates play in the everyday life and social cohesion of the village.

Signe Dalsgaard, UPNG, sdalsgaard@upng.ac.pg

Creative and arts-based approaches for inclusive research with communities: A case study on researching sorcery and gender related violence in PNG presented by Dr Jackie Kauli, Research Fellow, Creative Industries Faculty, Queensland University of Technology

Sorcery and gender related violence are social issues that continue to be a concern throughout Papua New Guinea. This has led to an increase in areas of research that seek to understand its contemporary manifestations. However, as much of the work addressing violence is done by community activists, there is a need to explore community-led initiatives and make research more accessible and useful to communities. Creative and arts-based approaches offer opportunities to involve communities in the design, analysis and dissemination of research. This paper presents a case study of undertaking action research using creative approaches to develop communication strategies to address sorcery and gender related violence. In partnership with local human rights organisations the research project used participatory creative methods including digital storytelling and process drama forms to yield nuanced understandings of local conceptualisations and knowledge, and to uncover innovative community-led approaches addressing the issue of violence. Incorporating an indigenous research framework, the project emphasises joint ownership of narratives and visual outputs which in turn are shared with communities and stakeholders nationally. This paper then makes a key contribution to understanding collaborative and co-creative research processes to investigate community-led innovations that can support sustainable social change.

Jackie Kauli, QUT, j.kauli@qut.edu.au; *Verena Thomas*, QUT; *Mary Kini*, Highlands Women Human Rights Defenders Movement.

Transferring the Aboriginal Australian Family Well-being Empowerment Program from a Papua New Guinea university context to broader community settings: a feasibility study presented by Mr Russel Kitau, Lecturer, The University of Papua New Guinea and PhD Candidate, James Cook University

This study aims to assess the feasibility of transferring the Aboriginal Family Well-being Empowerment Program (FWB) from a Papua New Guinea tertiary setting to broader community contexts to address the problem of endemic interpersonal violence and to generate pilot data to inform future community wellbeing interventions in PNG. Levels of well-being among a convenience sample of 100 participants recruited from Bereina station, Kairuku- Hiri District and other parts of the National Capital District and Central Province were assessed using a cross-sectional survey with an anonymous self-administered questionnaire. Follow-up FWB pilot workshops conducted in Bereina station for participants in the well-being survey used standardised FWB workshop evaluation questionnaires to obtain community feedback on the relevance of the program. Up to one in four

females and over half of males who completed the survey reported being a victim of actual or threatened violence in the last 12 months. In terms of well-being, participants were least satisfied with their standards of living and most satisfied with spirituality. Workshop participants could see that FWB has the potential to address community concerns, including interpersonal violence. The challenges and opportunities involved in sustaining such programs at community levels are highlighted.

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Using research as a tool across multi-disciplines to develop a conflict resolution model presented by Mr Adam Tilbrooke, Postgraduate student, College of Business Law and Governance, James Cook University. Co-presented by Ms Jacqueline Garoau, Student, James Cook University

There is a need for workable conflict resolution models to be in place to attempt to curtail contentious issues in tropical Papua New Guinea (PNG), as the country has various tensions across different levels in the society. Thus, the aim of this paper is to show how we the two postgraduate students (authors) at the James Cook University (JCU) can use research skills as a tool across multi-disciplines to develop an intervention strategy to be used as a working framework for conflict management and resolution purposes. Data is drawn from reviewing literature and course materials on conflict management resolution programs at JCU, the wider literature, and the PNG literature and case various studies. Initial impressions are drawn from the authors' experiences in legal and management contexts for dealing with conflict management and resolution case studies. This paper's findings will contribute knowledge on possible outcomes of dealing with local cases of conflicts in contemporary indigenous societies. Thus, as a means of recording and creating knowledge for PNG.

Michael Steven Wagambie, JCU, michael.wagambie@my.jcu.edu.au: *Adam Tilbrooke*, JCU, Adam.tilbrooke@my.jcu.edu.au

Community Response: Repositioning the narrative of Gender Violence in Papua New Guinea presented by Ms Nalisa Neuendorf, PhD Candidate, College of Arts Society and Education, James Cook University

Current research into Gender Violence in PNG continues to present landscapes of intricate complexity, where single events are integrated in community dynamics, social and kin networks and relationships, cultural tradition and belief systems, and western religion. The formal response mechanisms in PNG have been developed over time by respected advocates, agencies and practitioners through much social research. Social research is important in strengthening the capacity of formal response mechanisms particularly in providing detail to the intricate complexity of social life in local communities. This paper highlights how social research can further strengthen the capacity of formal response mechanisms by focussing on narrative of the lived experience of Gender Violence by documenting life in a remote community – Baimuru station in the Gulf Province. These narratives present a perspective outside the singular events of violence – the story of those who witness acts of violence in their community. This perspective repositions the narrative of Gender Violence and in so doing highlights, within a particular local remote community, the intricate complexities of the single event. Developing an understanding of community perception from local communities can further contribute to and inform current responses to Gender Violence in PNG.

Nalisa Neuendorf, JCU, nalisa.neuendorf@my.jcu.edu.au

Building gender equity through a family teams approach: A research for development project that is supporting the economic development of women smallholder farmers and their families in PNG presented by A/Prof Lalen Simeon, Associate Professor, Research Department, Pacific Adventist University

This participatory action research project is exploring ways to develop the business and farming practices of women semi-subsistence food crop producers and their families. The project uses asset based community development and appreciative inquiry to understand the enablers and barriers facing PNG women farmers. The research is a partnership with Pacific Adventist University, the National Agricultural Research Institute and the

University of Canberra. Trials have been conducted in Central Province, the Eastern Highlands, East New Britain, Jiwaka and the Western Highlands, and are currently in progress in New Ireland and Bougainville. To date the project has developed brokered training for improving agricultural production and financial literacy, and the Family Farm Teams program that begins to address issues of gender equity in farming households. This learning is disseminated by teams of local village community educators. This paper will focus on the Family Farm Teams modules that enable farming families to explore issues of gender and culture within families, seeking to encourage more effective, sustainable and gender-equitable farming and business practices. The program helps families look at the work done by women, men and youth and to work towards a more equitable and effective distribution of agricultural and household work.

Lalen Simeon, Pacific Adventist University, Lalen.Simeon@pau.ac.pg; *Barbara Pamphilon*, University of Canberra, barbara.pamphilon@canberra.edu.au; *Katja Mikhailovich*, University of Canberra, katja.mikhailovich@canberra.edu.au

ECONOMIC DEVELOPMENT

CONCURRENT SESSION 3

An Empirical Study of Some Determinants of Economic Growth of Papua New Guinea presented by Dr Muneer Mancheri, Senior Lecturer, School of Business, IBS University

Economic growth is important in an economy, which influences the standard of living of people, it helps in growth of employment, growth of education and thus human capital in the country. Variables such as growth of employment and growth of adult literacy can play an important role in the social and economic change of the country and thus development of the PNG economy. We analyze the relationship of economic growth with a few major aspects of development of PNG namely growth of employment in the previous period and adult literacy in the previous period during 1992-2016, by employing econometric technique. The study helps to identify the relationship between economic growth and reduction of unemployment in the PNG economy. This helps the policy makers to understand the level of required economic growth to reduce some percentage of unemployment in the country. Furthermore, the study also provides empirical evidence for the relationship between the economic growth and growth in the literacy level of people in the PNG, which helps to understand the required rate of economic growth to report some percentage growth in the literacy of people in PNG.

Muneer Mancheri, IBS University, muneer.babu@ibsu.ac.pg

Housing Allowances for Public Servants PNG presented by Mr Thomas Wangi, Research Fellow, Property Sector Development Program, National Research Institute

This paper focuses primarily on one of the findings from an article by Wangi and Howes (2014) concerning pay scales for public servants in Papua New Guinea (PNG). It was reported in the article that some public servants do not receive housing allowance whereas those that receive the allowance are paid too little. The study was based on 2012 pay scale, which is currently being used in the public service system. The current paper focuses on the trend of housing allowance paid to various categories of public servants and whether the allowance meets housing affordability criteria. It was found that public servants at lower end of pay scale do not receive housing allowance. For the categories of public servants that receive housing allowance, their housing allowance to base salary ratio increases as pay scale increase. Only housing allowance for category of public servants at the highest pay scale meets housing affordability criteria, which is 30% of their base salary. The findings revealed that housing allowance in the public service does not conform to housing affordability criteria. The current housing allowance policy in the public service is discriminatory and it is difficult to understand how the housing allowance figures were derived.

Thomas Wangi, National Research Institute, twangi@nri.org.pg

Development Experience of Papua New Guinea,1990-2015 presented by Dr Harinarayana Devabaktina, Executive Director, Open College, The University of Papua New Guinea

The present study aims at an analysis of Papua New Guinea(PNG) development experience during 1990-2015. PNG with diversity in geography, culture, ethnicity and languages recorded mixed development experience during the last two and half decades. The country succeeded in achieving a moderate annual growth in GDP Per capita. Life Expectancy at Birth significantly increased. Total Fertility Ratio marginally declined. Population with access to improved water resources increased substantially. Mortality Rate declined. Maternal Mortality Rate declined. Adult Literacy Rate increased. Net Enrolment in primary education increased. Unemployment Rate marginally declined. Inflation Rate declined. While these development indicators moved favorably, poverty increased. Sanitation conditions remained stagnant. Gross Enrollment Ratio(GER) in tertiary education remained stagnant. The other development indicators moved negatively affecting the development of the country. HIV Prevalence Rate increased. Green House Emissions increased. The percentage of forest area declined. Exchange Rate has been depreciating. FDI inflows declined. FDI outflows increased. Overseas Development Assistance declined. Net External Debt increased. A comparison of PNG with other South Pacific developing countries shows that PNG lags behind in most of the indicators.

Harinarayana Devabaktina, UPNG, hari@upng.ac.pg; Lekshmi N.Pillai, UPNG, lnpillai@upng.ac.pg; Albert Prabhakar Gudapati, UPNG, prabhakar@upng.ac.pg; Pulapa Subbarao, Oriental University

A policy analysis on the impact of SME development and innovation in PNG presented by Ms Millicent Rova, Lecturer, Agriculture Economics Research and Marketing Management, Papua New Guinea University of Natural Resources and Environment

The Vision of the SME sector is to become one of the major contributor to PNG becoming a middle- income country by 2050. Importantly it aims to transform poverty corridors into economic corridors with the 10 corridors planned for development covering some of the poorest areas of PNG. This study will analyse the SME Policy and its influence and impact on current developments and innovation in Papua New Guinea. The growth of the SME sector is set by the government as a priority to achieve the long-term developmental strategy according to the PNG Vision 2050. One of the initiatives worthy of highlighting is the direct or indirect banking and financial services for the private sector. Since it is aligned to MTDP2 Goal under the Pillar No. 2 Wealth of the PNG Vision 2050; the government is committed to growing the SME sector to create mass employment, develop a larger tax base and spread our national wealth more fairly around our country.

Millicent Rova, Papua New Guinea Natural Resources and Environment, millicentrova53197879@gmail.com

INA Private Sector Survey presented by Mr Steven Goie, Researcher, Business, Papua New Guinea Institute of National Affairs

The Private Sector Survey is undertaken by INA every five years since 1999 to better understand the problems businesses face in PNG. Similar to previous surveys, the intention for the 2017 Survey is to understand what is restraining private sector development in PNG and suggest ways to make it grow. It also seeks to gauge the private sector's view on their priorities for policy reforms and practical action to encourage sound business activity and investment. Recommendations based upon experiences of businesses in PNG will include comprehensive advice to government on the preferred directions to improve the performance of businesses and investments in PNG, recommend programs to remove these constraints, strengthen support for businesses to develop and encourage sustainable business. This survey will cover both the large and small to medium enterprises, the extractive industries and agriculture, manufacturing and services and the report will illustrate differentiating situations in different parts of the country.

Steven Goie, Papua New Guinea Institute of National Affairs, Steven.Goie@cimcpng.org

Alleviating poverty through micro-credit: A Papua New Guinea Case Study presented by Mr Samuel Ray, MBA Student, University of Science and Technology, Beijing

Microcredit schemes have proven to be one of the most effective tools in alleviating poverty. Many developing countries around the world have adopted microcredit models to reduce poverty in remote and regional areas. Countries like Bangladesh, Malaysia, India and the Philippines have utilised methods such as the Grameen Bank microcredit model to aid in alleviating poverty in remote regions of their countries. For example, the 'Grameen credit' model in Bangladesh assisted in alleviating poverty experienced by approximately 8 million people, of which 75% were mothers in rural areas. Regardless of their economic or social situation, literacy rates and limited access to markets, microcredit models like the Grameen microcredit model have proven a success in developing economies around the world. However, this has not been the case in Papua New Guinea (PNG). PNG has an approximate total of 7.5 million people, 85% of them living in rural areas and almost 40% of the population currently live below the poverty line. *These people are denied access to microcredit.* If a developing country like Bangladesh with similar development challenges could give loans to its 8 million poor people, what is so different about PNG? My thesis seeks to investigate how PNG can develop micro-credit models that can give loans to the poor people living in regional and remote areas of PNG. My leading research question is - why finance do companies not loan to the poor? Additional questions are - what are the challenges poor mothers and subsistence farmer's face in accessing loans in remote areas of PNG? Most importantly are there any models that could be adopted to the particular context of PNG? Can a revised microcredit model help assist in alleviating poverty in remote and regional areas of PNG?

Samuel Ray, University of Science and Technology, sray@alumni.dwu.ac.pg

PNG IMPACT INNOVATION LAB THREE: ARTS LECTURE THEATRE (ALT)

EDUCATION: ACCESS AND IMPACT

CONCURRENT SESSION 1

Challenges to the Disabled in PNG Post-Secondary Education *presented by Ms Rosemary Hobart-Karo, Associate researcher, Palladium International*

Aims to raise awareness of PNG Post-Secondary Education Institutions' obligations to plan for addressing the needs of students and staff LWD. The preliminary findings from a Study of Women's Impediments and Barriers to Accessing Post-Secondary Education in PNG, drawing on five indepth case studies of PWDs, including 2 women graduates in employment, and 3 students in PNG Post-Secondary Institutions; and a sample of PNG university and TVET institutions. Significance: Huge challenges in accessing Post-Secondary Education compound PWDs' prior challenges. Their personal qualities are outstanding. Their achievement of higher education and employment confers significant benefits on society, on the individuals and their families. Key Conclusions: Most infrastructure is inaccessible, pre-dating by decades the recognition of PWDs' rights. Institutions are ill-prepared to cater for PWDs (students and staff) and lack plans for addressing accessibility and other PWD needs. Awareness needs raising in the PNG Post-Secondary Education Sector of the participation rights of PWDs, and Post-Secondary Institutions need encouragement to develop policy and plans for addressing the needs of students and staff LWD. An opportunity exists to provide targeted support and/or incentive to leverage awareness raising and promote strategic planning by institutions to cater for PWDs in the future.

Rosemary Hobart-Karo, Palladium International, rhkaro@gmail.com

Effect of Early Language Education on the Academic Performance of National High School (NHS) Students in Papua New Guinea *presented by Mrs Olga Temple, Linguistics Lecturer, School of Humanities and Social Sciences, The University of Papua New Guinea*

In the uniquely multilingual society of Papua New Guinea, English is the language of instruction in all secondary and tertiary education. Therefore, the students' proficiency in English becomes one of the determining factors in their ability to acquire knowledge in any and every field. Our study aimed to examine the causes of National High School (NHS) students' falling academic performance, focusing specifically on the influence of Age of Onset of English learning (AO) on their subsequent English proficiency. The survey of all six NHSs in Papua New Guinea, conducted between May 2016 and May 2017, yielded data on language education backgrounds of 2393 (82%) of the entire NHS student population. These data were matched with the respective students' English/ overall scores and analyzed, using ordinary least squares regression. A series of ANOVAs and correlation analyses were also performed. The results reveal a statistically significant inverse correlation between the students' AO and their academic performance. A significant inverse correlation was likewise observed between the students' academic scores and their Age at Literacy (ALit) / Early Learning Language (ELL), respectively. This paper discusses our findings and offers recommendations for the future direction of language policy in Papua New Guinea.

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Partners in change: Responding to the teaching quality agenda *presented by Dr Goru Hane-Nou, Lecturer, School of Humanities and Social Sciences, The University of Papua New Guinea. Co-presented by Mrs Lydia Hiawalyer, Coordinator, Centre of Human Resources and Development, The University of Papua New Guinea*

The government of Papua New Guinea (PNG), through the PNG Vision 2050 document, has signalled a clear focus on social, political and economic development through increased access to high quality higher education. As the PNG university sector works towards addressing this agenda, twinning partnerships have been proposed

as a practical means to enhance the capacities of academics (Baird, Norman, Renagi, & Thiele, 2015) and thus strengthen the quality of teaching and learning. This paper presents the initial reflections on the implementation of one such partnership – the Australian Government funded UPNG/JCU Twinning Project – in which the Graduate Certificate in Education is offered to 3 cohorts of UPNG staff. The delivery of the program, while initially led by JCU staff, is transitioning to ownership by UPNG, with the development of a parallel program by mid 2018. Drawing on Kirkpatrick's (1994) four level model for evaluating effectiveness, the preliminary evidence suggests the project is having a positive effect on teaching practices while supporting an emerging community of practice in the scholarship of teaching and learning. The authors argue that projects such as this, employing careful collaborative and constructive efforts between institutions, can be pivotal in yielding academic development enriched by the value of empathy inherently employed.

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An Assessment of Students' Academic Performances Before and After the Student Crisis in 2016: The Stories of Demography-Major Students, University of PNG presented by Dr Alfred Faiteli, Lecturer, Demography and Population Studies, Environmental Science and Geography, School of Natural and Physical Sciences, The University of Papua New Guinea

This paper attempts to show the study rationale and methodology for assessing students' academic performances after the student crisis in 2016. This study will focus on about 60 Demography-major students in three cohorts which include students currently in their second, third and fourth year at the UPNG. A comparison of the Grade-Point Average (GPA) for each student and cohort will be analysed for the period 'before' and 'after' the Student Crisis. A mixed-method approach will be used in this study that will include an individual questionnaire interview and a focus group discussion. The questionnaire will be used to collect information of how each student felt about the crisis and its impact on their studies. The focus group discussions will largely target the three cohort groups and will be based on general questions triggered from the individual interviews. The experiences or stories of the students will be correlated with their academic performances (GPA) to see if any relationship exists. These findings will be useful to inform the university about student experiences and their academic performances after the events of 2016.

Dr Alfred Faiteli, UPNG, afaiteli@gmail.com

PNG LNG -- PIDU Research Scholarship: Lessons Learnt from a JCU Masters Student presented by Mr Elizah Nagombi, Masters student, College of Science and Engineering, James Cook University

As part of marine mammal research efforts in the Kikori Delta, Papua New Guinea, Exxon Mobil PNG Ltd supported three Papua New Guinea students to undertake relevant studies on marine mammals. Two postgraduate students studied at The University of Papua New Guinea and one studied a Masters by Coursework at James Cook University (JCU). The Masters by Coursework in Tropical Biology and Conservation is now nearing completion, with the student benefiting greatly from this program and the experience of studying at JCU. The benefits of studying at JCU will be discussed, as well as constraints encountered. This scholarship program and associated study at JCU has been extremely successful to build the capacity and knowledge of a Papua New Guinea students to continue research and conservation in Papua New Guinea in the future.

Mr Elizah Nagombi, JCU, elizah.nagombi@my.jcu.edu.au

Situating the challenges for teacher education in Papua New Guinea: A comparative review of teacher education in developing rural contexts presented by Professor Elaine Sharplin, Professor of Education, Associate Dean of Learning and Teaching for College of Arts, Society and Education, James Cook University. Co-presented by Professor Chris Walsh, Professor in Education, College of Arts, Society and Education, James Cook University

Globally, there are calls to increase the quality of teaching and learning through improved teacher education. The challenge of achieving this outcome is magnified for countries with populations distributed in rural and remote locations. Despite success with addressing education accessibility targets through increased enrolments in primary education and increased numbers of qualified teachers, Papua New Guinea continues to face a significant challenge in addressing the teacher quality agenda. In this paper, the limited available literature on teaching and teacher education in PNG is reviewed and comparatively located with the experiences of other developing rural contexts in India, Peru, Nepal and remote Australia. Research indicates collaborations with international tertiary and philanthropic partners continue to provide opportunities for development; however innovative and creative strategies in initial and continuing teacher education—including the use of new and emerging technologies—are desperately needed to address the provision of a sustainable high quality teacher workforce for rural and remote contexts. We argue that responsive and high quality teacher education that equips educators with culturally appropriate pedagogies and the capacity to innovate in resource-limited environments has the potential to improve learning outcomes for young people and transform the profession.

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EDUCATION: CURRICULUM AND INNOVATION

CONCURRENT SESSION 2

A Quality Assurance Model for Open Learning Distance at the University of Papua New Guinea's Open College towards the SDG4 presented by Ms Janet Rangou, Acting Associate Director Programs and Production, Open College, The University of Papua New Guinea

The United Nation's seventeen (17) global Sustainable Development Goals (SDG) specifies SDG 4 to Quality Education. What does SDG 4 mean in the local context of the University of PNG's Open College (UPNGOC)? The UPNGOC offers Higher Education under the dual mode system for delivering Flexible Open Distance Education/learning (FODE/L) programs to learners throughout the nation. The challenges of a dual mode FODE/L system in a developing country like ours are visible and requires greater focus and implementation strategies in ensuring that quality does prevails. Any well-established, ethics based, quality assured, properly regulated dual mode tertiary education system succeeds with visionary leadership and other relevant, good practices. Open educational resources and distance education potentially increase access, equity, quality and relevance towards the attainment of SDG4. SDG4 and FODE/L address the relevance gap of what is taught in universities and the market/societal demands. UPNG's FODE/L mode of delivery therefore needs to safeguard the quality of its programs and services. A QA model is essential that best fits its context, resources, capacity and capability to serve its valued clients, the PNG learners. This paper proposes a QA model for FODE/L that may be applicable at UPNG and possibly other FODE/L offering universities in PNG.

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A competencies performance model to deliver tertiary PNG student innovation and leadership presented by Mr Raymond John, Lecturer, School of Business and Public Policy, The University of Papua New Guinea

Competencies define an individual's task effectiveness. They gauge whether an individual has the ability to apply knowledge, skills, attitudes and values suitable to meet establish standards (Rainsbury et al., 2002).

In this study, the competencies acquired by UPNG undergraduate students are path-model mapped against student innovation capabilities and student leadership capabilities. This study follows the Voorhees' (2001) four level learning competencies approach from innate traits and personal behavioural characteristics to acquired skills, abilities and knowledge to learning intellectual competencies and to a capabilities suite of enhanced student performance outcomes. It is with taxonomy, taxonomy updates, Bigg's (2001) 3P model, and Hamilton and Tee's (2013) two-way systems learning approach.

Competencies are measurable (Australian Education Council Mayer Committee, 1992). In this study, seven undergraduate student learning-related constructs (student interpersonal-skills, supportive decision-making, perseverance-and-hard-work, managing-risk, positivism, achievement and problem-solving) are mapped against two student performance outcomes constructs (innovation capabilities and leadership capabilities).

Voorhees' (2001) 4 stage competencies model is reduced to 3 stages. The undergraduate student learning-related constructs student interpersonal-skills, supportive decision-making, perseverance-and-hard-work fit the traits and characteristics starting level. The managing-risk, positivism, achievement and problem-solving constructs fit a combined competency-based model framework of skills, abilities and knowledge competencies. This approach is also supported by considerations (Anderson, Krathwohl & Bloom, 2001; Krathwohl, 2002; Biggs, 2001) and by applied research (Hamilton & Tee, 2013) - where measurable competencies are intelligently captured. Voorhees' (2001) level 4 performance outcomes are the acquired capabilities of innovation and leadership.

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Enhancing positive societal impact through the informal curriculum presented by Mrs Rajeswari Bagyalingam, Leader, School of Business, IBS University

This paper describes and reflects on a number of innovative initiatives of the informal curriculum at IBS University. For the purposes of our paper we understand the informal curriculum to consist of a diversity of learning experiences that take place outside the formal teaching curriculum and the formal teaching and learning spaces that help to build social and cultural capital, strengthen notions of citizenship and facilitate individual responsibility. Skills such as enhanced communication, problem solving, teamwork and critical thinking together with the development of greater awareness of personal health and hygiene and broader social issues such as gender violence, environmental sustainability and cultural identity, we argue, can be facilitated and enhanced through the informal curriculum. We reflect on the involvement in, and outcomes achieved, for students undertaking tertiary studies, who have participated in activities and events such as regular film screenings, guest speakers, celebrations of International Women's Day, World Health Day, National Independence Day, IBS Culture Day, among others. We seek to show how active involvement in a diverse and rich informal curriculum can bring tangible benefits to the ongoing development of PNG citizenship amongst tertiary students that in turn bring about positive societal change.

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Enabling PNG women to pursue non-traditional careers presented by Dr. Penelope Murphy, Research Specialist, Education Capacity Development Facility, Palladium International

Aim: To communicate an understanding of factors impeding or enabling PNG women in pursuing non-traditional careers. Content: Findings from a Study of Women's Impediments and Barriers to Accessing Post-Secondary Education in PNG including interviews with female graduate engineers, female engineering students at PNGUT, and relevant peak bodies. Significance: A small minority of PNG engineering students are female. Although women who qualify as engineers are of outstanding determination, intellectual and social calibre, they struggle for acceptance in society. Key conclusions: Women engineers share a love of maths, high intelligence, diligence and self-discipline. They have strong personalities and self-image. Most recognise that an engineering career poses challenges to marital relationships. Strong religious faith helped many to focus on their studies with resilience. The most critical barrier is that many girls in Grades 11 and 12 lack awareness of Engineering as a career path, and careers counsellors give ill-informed advice leading to inappropriate subject selection. Female engineers act as strong role models, but are a small minority and less visible than they might be. A lack of accommodation for female students is a major institutional constraint on campuses of TVET institutions, which is a fundamental institutional constraint on the numbers of females enrolled.

Dr Penelope S. Murphy, Palladium, Penelope.Murphy@pngeducationfacility.com; Rosemary Hobart-Karo, rhkaro@gmail.com

Research-based Curriculum design, innovation, policy and practice will Impact Papua New Guinea societies presented by Mr John Wanis Tapura, PhD Candidate, College of Arts Society and Education, James Cook University

Research based curriculum innovation, policy and practice is most likely to address the underlying developmental impediments through an educated population. An educated human resource is the only means to pin PNG amongst the top 50 as anticipated in the PNG Vision 2050. Central to quality education necessary for human resource development is the teachers' curriculum enactment practices. Curriculum enactment is the crucial phase where curriculum text is translated into learning activities by teachers. It means students experience what teachers conceive the curriculum intent to be and translate that into learning activities. Hence, research into curriculum innovation, policy and more importantly the curriculum enactment practices are fundamental in human resource development. For example, preliminary findings of the researcher's thesis focusing on place-based curriculum enactment practices revealed that 90 % of the respondents have no idea of the national curriculum statement which underpins all PNG curriculum issues. It is the teachers' lack of knowledge in the curriculum processes, policy and practice rather than the curriculum itself. Therefore, the latest change in PNG from outcomes based curriculum to standard based curriculum without research will have no impact; the problem is teachers' lack of knowledge about the curriculum processes and not the curriculum.

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Assessment of betelnut (Areca catechu L.) mastication sputum stain in Papua New Guinea presented by Mr Emmanuel Jimbanau, Undergraduate Research Project Student, Department of Applied Sciences, The University of Papua New Guinea

Chewing of betel nut has vast cultural and circular connotations in PNG. Though it establishes a rich and volatile economy in the informal sector, filth and hygiene concerns of the spittle is derailing. This study will assess physiochemical properties and mechanisms involved in promoting stability of betel nut mastication sputum stain in PNG. Temperature and light induced stability of an organo-metallic complex slurry will be examined with leads to development of an ideal stain remover. The study encompasses examination of betel nut stain's chemical constituents using EPA and AOAC systems and methods. Stains on wood, metal, concrete, wool, glass and steel will be sampled. Calcium and magnesium are primary trace metals and iodine is the primary halogen that will be analysed by EDTA and Andrew's titrations respectively (PNGUoT, Applied Sciences), whilst, heavy metals such as copper and iron will be analysed by FAAS (PNGUoT, NATSL) and arecolin isolation via HPLC (JCU - Australia). Stains from these materials will be removed using tests that involved variations in pH, redox and thermal conditions. Tussles of authority's anxiety on betel nut stain – hygiene and the informal sector viability of betel nut can be minimised.

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INCLUSIVE RESEARCH

CONCURRENT SESSION 3

An indigenous research tool for Papua New Guinea presented by Ms Fiona N'Drower, PhD Candidate Management and Commerce, College of Business, Law and Governance, James Cook University

This paper discusses a possible research framework that can be applied to culture related studies in Papua New Guinea (PNG). PNG can be considered by western researchers as a last frontier providing a unique opportunity to explore, conquer and define. Identifying a research methodology and a suitable method to gather information becomes more challenging if the intended participants are not accustomed to the common or popular research techniques that are being used by formally trained researchers. This paper argues that the research method

used in collecting data can have an impact on the participation level of informants and the validity of the information being provided by them. It reports on the development of an indigenous research tool based on an investigation of the experiences of both local villagers (25 participants from 5 villages) and twelve PNG national researchers involved in previous studies on a range of social issues. This preliminary research identified effective communication, consultation, the development of relationships and long term partnerships between researchers and participants as key factors influencing the quality of research outcomes. Henceforth, societal problems are better identified and suggestions for solutions are contributed by both the participants and researchers.

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Crafting Together: Collaborative Arts-based Research Methods presented by Dr Daniela Vavrova, Lecturer, James Cook University

Using different audio and visual approaches in a qualitative inquiry enables us to engage with the people's life in the process of creation. Utilising different media keeps research alive and people interested. Different art-informed approaches facilitate diverse sensory responses. Collage, for example, is a tacit way of expressing the lived experience. In a collage, it is fundamental to re-see, re-locate, and re-connect things in a new way. A person creates a new platform and gives a new life to something that has already existed. Creating a storyboard and then actual recording of the story is another way of revisiting people's everyday practices and sharing the narratives. These methods give precedence to shared visions between the people, the ethnographer, and the viewer. The dialogic approach in this sense is not only about sensory experience but also about its communicative dimension. In the form of a poster we would like to present a collage composed of different drawings, photographs, and storyboards that were made during 2010 and 2011.

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Say what? Students' voices on learning basic research skills from a course work requirement presented by Dr Anna Joskin, Acting Director, Centre for Research and Post-Graduate Studies, The University of Papua New Guinea

Having little or close to no idea at all on how to conduct academic research, and, let alone write up a report on a research activity for the first time, can be overwhelming to undergraduate students. This paper highlights evaluations sought from 49 first year Humanities and Social Science students who undertook basic research skills as part of a foundation Communication Skills Course at the University of Papua New Guinea in semester two of 2016. The constructivism lens frames this paper, and, data is drawn from survey questionnaires, random students' report samples, and, document analyses from the course outline and text book. Thereon, the content and thematic analyses were used to find meanings contained within data. Initial findings revealed that the research skills module was considered both beneficial and challenging. Those preliminary findings have relevance to informing areas of curriculum design and academic programs teaching research skills and report writings across different educational levels in Papua New Guinea.

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Developing Knowledge Networks in the Nakanai Ranges (Tentative World Heritage Area) presented by Mr Iggie Matapia, Manager, Delawin Guesthouse, Palmalmal Papua New Guinea. Co-presented by Mr Jason Kariwiga, Lecturer, School of Natural and Physical Sciences, The University of Papua New Guinea and Ms Roxanne Tsang, Student, The University of Papua New Guinea

This presentation highlights local perceptions of research outputs and their usefulness to local communities. In particular, we highlight the role of local hosts in linking external researchers to communities so that useful research outputs are generated. Hosts are crucial to organizing knowledge exchanges and developing appropriate inter-cultural relationships. Using material from our project on the Nakanai Ranges we show how the resulting flows of knowledge can inform debates about development and conservation. Iggie Matapia, a

landowner from Malakur Village, will talk about how the research has enabled productive engagement with local issues about land use matters, cultural heritage and sustainable futures. In addition, postgraduate students from UPNG will discuss how local networks developed through this project have enhanced their research experiences.

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Impacting on PNG? A project about PNG residents preparing for old age in North Queensland presented by Ms Nalisa Neuendorf, PhD Candidate, College of Arts, Society and Education, James Cook University

In this paper, we initially outline some of the findings of a recent project called 'Planning for Later Life amongst Papua New Guineans in North Queensland'. Salient to our work has been the role of Australian welfare system which we compare with the way the PNG state and various corporations have responded to the needs of the elderly living in PNG. Such a comparison might help define a future research project concerning PNG's planning for later life. Our project has relied on researchers, such as ourselves, who were often insider/ outsiders to members of the North Queensland PNG community. What emerged, along with the redefinition of our relationships with our participants, were a series of context dependent protocols regulating some of our research activities. We seek to engage in discussion as to whether other PNG researchers working on other social welfare projects in PNG have experienced similar insider/outsider relationships. In summary, the paper seeks to outline some elements of a future project that would focus on PNG's responses to old age. Then, at a more micro-scale, we explore how insider/ outsider relationships may influence the creation of knowledge about the elderly in both Australia and PNG.

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PNG IMPACT INNOVATION LAB FOUR: SCIENCE 3 BUILDING (S310)

ECOLOGY

CONCURRENT SESSION 1

Food Resources of the Raggiana Bird of Paradise in a Tropical Forest corridor within a Savannah Landscape presented by Mr Challis Pulotu, BSc Honours Student, School of Science and Technology, Pacific Adventist University

The Raggiana Bird of Paradise (BOP) within the Paradise (BOP) family is one of the most desired bird species to be studied on Earth because of its rarity, colourful plumage and feathers for headdresses in customary practices in New Guinea. Despite research being done previously on its breeding, feeding, nesting, and associated cultural research nothing is known yet as to the possibility of reintroduction of the *Paradisaea Raggiana* (*P. Raggiana*) in a tropical or gallery forest. This research compares known plant food sources which the *P. Raggiana* feeds on at Varirata National Park (VNP), compared to those present at remnant forest latches along Whisky Creek at Pacific Adventist University (PAU). As such, the density and distribution of the known food sources (Beehler, 1983) identified at VNP and PAU are crucial for sustainability of conservation schemes for education and possible alternatives provided. The methodology used will be using transects with randomised plots along the Varirata Lookout Track and similarly at PAU and analyzed using the t-test and statistical package Statstix 8.

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Prevalence of coral diseases in Kimbe Bay, Papua New Guinea presented by Mr Wickrama Anura-Upasanta-Kumara, Lecturer, Faculty of Fisheries and Marine Sciences, James Cook University and University of Sri Lanka.

Coral diseases have negative effects on the biodiversity, abundance and cover of reef-building corals. This is the first study on coral diseases in Kimbe Bay, Papua New Guinea which was conducted in March to April 2011 to examine the coral cover, coral abundance, prevalence of infectious coral diseases (IDs) and prevalence of compromised health signs (CHS) as overall values. Randomly laid transect (15 m) was used to record coral cover while (1 square metre) quadrat was used to record coral abundance considering the reef zones (flat, crest and slopes) of four reefs (Matane Walindi, Luba Luba, Malane Huwa and Rakaru Diri). Overall coral cover and abundance respectively were 34 % and 13.6% colony m². Reported IDs were White syndromes (WS), Black Band disease, Brown Band Disease, Skeletal Eroding Band Disease, Atramentous Necrosis and Growth Anomalies while the reported CHS were crown-of-thorn starfish and *Drupella* predation, overgrowth by ascidians and sponges, flatworm infestation, pigmentation response, sediment damage, unusual bleaching, white bleaching (WB) and ulcerative white spots. Overall disease prevalence was low with 1.1 % of corals affected by IDs, and 0.9 % with WS. Prevalence of the CHS was 6.3 % and 1.4 % with WB. This study provides baseline information for the management of these reefs in this region.

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Status of Marine Mammals in Papua New Guinea Waters presented by Ms Wilma Mavea, Postgraduate Diploma in Science Student, The University of Papua New Guinea

The aims of this project were to determine abundance and distribution of inshore dolphins in Cleveland Bay, Northern Australia and the Kikori Delta, PNG, with a critical evaluation of factors that may influence the success of coastal boat-based surveys, and to provide a comprehensive review on the status of marine mammals in PNG waters, and previous studies that have been conducted. The methods consisted of a comprehensive review of the marine mammal literature, boat-based surveys in Cleveland Bay, Townsville from May-August 2016, and

collation of marine mammal records from Papua New Guinea waters. This project is the first to be conducted on a marine mammal population by a Papua New Guinea university student, where estimates of snubfin dolphin abundance were obtained for Cleveland Bay, Townsville, and a comprehensive marine mammal list for Papua New Guinea waters was developed. This project has provided a Papua New Guinea student with the skills and capacity to conduct independent marine mammal studies in Papua New Guinea waters to assist with research and conservation management of these little-known populations.

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PIDU Project: Research and Conservation of Dolphins in the Kikori Delta, PNG presented by Dr Isabel Beasley, Adjunct Senior Research Fellow, College of Science and Engineering, James Cook University

The PIDU (dolphin and dugong) project was initiated in 2013 by James Cook University. This project collaborates with the Papua New Guinea (PNG) National Museum and Art Gallery, PNG Institute of Biological Research, The University Papua New Guinea (UPNG) and the Conservation Environment Protection Authority, and is funded by Exxon-Mobil as part of the PNG LNG project.

The primary aims of this project are to 1. research the conservation status of inshore dolphins and dugongs in the Kikori Delta of Gulf Province, 2. conduct workshops with Kikori communities to discuss dolphin status and inform them of the project, and 3. increase capacity of PNG nationals to research and conserve marine mammals in PNG.

Two large-scale field projects were undertaken in the Kikori Delta in 2013 and 2015. Results from these surveys indicate that the conservation status of inshore dolphins in the Kikori Delta is critical, with bycatch in subsistence fisheries being the major concern.

As a result of a lack of national capacity to research and conserve marine mammals, the PNG LNG – PIDU Research Scholarship was established in 2016, with a primary aim of building local capacity to champion marine mammal conservation in PNG. This program is ongoing, with one PNG student now studying his Masters by Coursework at JCU, and two students studying their postgraduate programs at UPNG.

Isabel Beasley, JCU, Isabel.Beasley@jcu.edu.au

Comparing Soil (Peat) carbon content of different mangrove communities in Bootless Bay, Central Province PNG presented by Mr Freddie Alei, Lecturer, School of Natural and Physical Sciences, The University of Papua New Guinea

Mangroves could be key ecosystems in strategies addressing the mitigation of climate changes through carbon storage. However, little is known regarding the carbon stocks of these ecosystems, particularly below-ground. This study was carried out in the mangrove forests of Bootless Bay in Central Province, Papua New Guinea (PNG), with the aim of quantifying carbon stocks of soil. The method used in this study is that developed by the Center for International Forestry Research (CIFOR) for mangrove forests. Estimated total C in the whole mangrove sample sites of Bootless Bay was 175 t/ha. The average total soil carbon storage of Bootless Bay mangrove was 43.75 tonnes·ha⁻¹. Mangrove conservation has the potential for REDD+ programs, especially in regions like Indonesia and PNG, which contains extensive mangrove areas with high C content in the world put together. There were no significant difference between the C content in the different mangrove communities sampled in Tahira, Bootless Bay-Central Province regardless of the forests being hyper diversified with species composition.

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WILDLIFE CONSERVATION AND MANAGEMENT

CONCURRENT SESSION 2

Protecting amphibians from disease in Papua New Guinea presented by Dr Deborah Bower, Lecturer, College of Science and Engineering, James Cook University

Emerging infectious diseases threaten the persistence of biodiversity globally. The amphibian chytrid fungus, *Batrachochytrium dendrobatidis*, is among the most widespread and damaging of pathogens and has been responsible for the decline and extinction of amphibians in several continents. New Guinea is the largest remaining landmass within a climatically suitable area where the amphibian chytrid fungus remains undetected. We aimed to determine if the amphibian chytrid fungus was present in Papua New Guinea and swabbed live frogs in the lowlands of the Gulf in November 2015 in addition to specimens preserved in alcohol from a range of elevations in the Morobe Province collected between May to July 2014. We did not detect any positive samples with qPCR. The remoteness of Papua New Guinea and unsuitable climate of lowlands that surround the highlands may provide a refuge from the amphibian chytrid fungus. Strict hygiene protocols and biosecurity are required to preserve the high diversity of amphibians in Papua New Guinea. Pre-establishment surveys and ongoing disease surveillance will assist conservation of amphibian fauna, should the pathogen invade.

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Rapid response of wildlife to community-established no-take zones in the YUS Conservation Area, Papua New Guinea presented by Dr Mark Ziembicki, State of The Tropics Project James Cook University

Rapidly growing human populations accompanied by changes in observance of customary laws, economic drivers and technology increasingly threaten wildlife populations in PNG. Recent conservation initiatives have emphasised the establishment of community-based no-take zones where hunting and other resource extraction is prohibited. The effectiveness of areas designated by a local community as no-take zones for protecting key game taxa and providing a sustainable resource in buffer areas was assessed in the YUS Conservation Area, PNG's first conservation area. Survey transects were established along clines in hunting intensity in relation to twelve focal villages. The relative abundance of game taxa was assessed at varying distances from focal villages and within and outside no-take zones. Relative abundance was higher in protected areas than other sites for each taxon, and a notable effect of distance from village (a proxy measure for hunting intensity) was demonstrated for macropods and possums. Our results suggest that setting aside no-take zones can rapidly increase key game populations within community-based protected areas where participation is voluntary and enforcement limited. The study lays a foundation for the design of no-take zones, examination of protected area impacts on species and predicting impacts of future intensification of threats in this region.

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Marine mammal interactions with fishing activities in Papua New Guinea: A case study from the Kikori Delta, Gulf Province presented by Ms Monica Kolkia, Postgraduate Diploma in Science Student, The University of Papua New Guinea

The aim of this project is to investigate marine mammal interactions with fisheries activities in Papua New Guinea and the potential impacts of these activities, with a particular focus on the Kikori Region, Gulf Province. The methods consisted of a comprehensive review of fisheries activities and its associated threats to marine mammals in Papua New Guinea waters, determination of marine mammal mortality rates and causes and allowable mortality in the Kikori region of Papua New Guinea. A synthesis of data to propose effective management and conservation strategies to conserve marine mammals in Papua New Guinea. This project was

the first to assess threats to marine mammal populations in Papua New Guinea waters, where bycatch in subsistence fisheries, potential direct catch, and other threats such as pollution and marine debris, coastal development and degradation, seismic surveys and seabed mining are all direct threats that require urgent management in Papua New Guinea waters.

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Traditional ecological knowledge and conservation of cassowaries in montane forests of Papua New Guinea: A bio-cultural approach presented by Miss Dzarina Susuke, Honours Student, Department of Anthropology and Sociology, The University of Papua New Guinea

Cassowaries are the largest flightless endemic birds on the island of New Guinea. New Guinea has three species of which one is shared with Australia. New Guineans have strong cultural ties to the species; as an important source of protein, for trade in cultural ceremonies – a form of wealth, and its use in traditional adornment. Cassowaries are also important forest keystone species through their role as seed dispersers contributing towards forest regeneration. To understand the traditional ecological knowledge (TEK) associated with cassowaries, surveys (questionnaires) of males between the ages of 15 – ≥ 70 years were conducted in six villages in the Eastern Highlands Province, Papua New Guinea. The results indicate that there is an overall positive perception of cassowaries in culture. Over half of the focus group participants (N = 314) were aware of the traditional knowledge associated with cassowaries and their ecological role as seed dispersers. Furthermore, there is a high demand for cassowaries which contributes to the perceived decline in abundance. Healthy populations of cassowaries are essential for the persistence of culture and maintenance of forest regeneration. Further research and monitoring is crucial and needs collaborative efforts with traditional custodians, researchers, and relevant government agencies to achieve conservation.

Dzarina Susuke, UPNG, dsusuke@pngibr.org

“We need to yell about our reefs”: Creating deliberative spaces to better manage coral reefs presented by Ms Jacqueline Lau, PhD Candidate, ARC Centre of Excellence in Coral Reef Studies, James Cook University

In PNG, coral reefs are crucial to people’s well-being. Marine customary systems have historically sustained healthy coral reefs, but are now facing broad challenges brought by ecological, social, and systemic change. Customary systems, and their failure, impact people differently. There has been little work that investigates the ecological outcomes of customary management systems alongside analysis of what is considered fair and whether this translates into practices around marine resource use. We contrast changes in fish biomass and hard coral cover, perceptions of fairness, and practices of governance in two coastal communities in Papua New Guinea, one where customary reef management is failing, and one where it is enduring. We find that people’s perceptions of what is fair can reinforce or undermine customary systems. We argue that reefs do better when there is a space for and practice of argumentative, deliberative governance, and trust in leadership. Managing reefs around fairness rather than fish stocks may be key to keeping people engaged with marine conservation. Indeed, conflict may counterintuitively enhance conservation of reefs, if people trust the processes through which they can negotiate and air their concerns.

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INFRASTRUCTURE IN THE 21ST CENTURY

CONCURRENT SESSION 3

How continuous innovation from digital disruption can stimulate a creative economy in Papua New Guinea presented by Ms Maryanne Bagore, Lecturer, Information Systems, Divine Word University

Like any other organizations in developed countries, large business firms in Papua New Guinea embrace changes for the main reason to be successful and competitive in the market. These changes include upgrades of existing systems, development of new systems, improved digital technology products and services, and improved business processes or functions. Enterprises must be innovative when changing or transforming radically their digital products and services, and business processes or functions. Mobile technologies and e-commerce are two main emerging technologies that disrupt or radically change the traditional way of doing things in Papua New Guinea. Digicel and Telekom are the two main mobile phone retailers and telecommunication providers. How can these two large companies use the concept of continuous innovation from digital disruption to stimulate the economy in Papua New Guinea? This paper first of all aims to review the key elements of continuous innovation. It also aims to investigate and identify the current digital disruptions in Papua New Guinea and the importance of continuous innovation in these technology disruptions. It will discuss how the concept of continuous innovation from digital disruptions can stimulate a creative economy in Papua New Guinea.

Maryanne Bagore, Divine Word University, mbagore@dwu.ac.pg

Impact of stormwater runoff on water quality and public infrastructure in the National Capital District: A study carried out at two urban catchments: Boroko and Taurama presented by Mrs Regina Kiele-Sapak, Lecturer, School of Natural and Physical Sciences, The University of Papua New Guinea. Co-presented by Mrs Gertrude Miria, Lecturer, School of Natural and Physical Sciences, The University of Papua New Guinea

Over 80 percent of land tenure in Papua New Guinea rests in the hands of traditional custodians who are mostly subsistence farmers. Their livelihood and traditions are entrenched with the environment. To understand the contemporary use of wildlife by rural Papua New Guineans, semi-structured questionnaire surveys were conducted at the main study site, Karimui District (320 – 2000 m.a.s.l) in the Chimbu Province. Additional sites in central highlands (> 2000 - 3000 m.a.s.l) were included to compare species hunted at different elevations. Hunters' location of successful kills was analyzed using ArcGIS[®] software. The core hunting areas of the main study site had doubled in size by comparison to 30 years ago. Birds and mammal species were hunted more during the dry season (May - October) which coincides with locals' movement to lower elevations for sago harvest. Hunters in the central highlands hunted smaller mammals compared to Karimui. The hotspot of hunted threatened species (IUCN) was within proximity to the shared boundary of the Crater Mountain Wildlife Management Area (CMWMA). The findings of this study can be used to determine areas for community conservation and safeguard culturally valued endemic species.

Gertrude Miria, UPNG, miriam.supuma@my.jcu.edu.au

Optimizing future road infrastructure for societal benefit and environmental protection in Papua New Guinea presented by Dr Mason Campbell, Field Director and Postdoctoral Research Fellow, Centre for Tropical Environmental and Sustainability Science, College of Science and Engineering, James Cook University. Co-presented by Dr Mohammed Alamgir, Postdoctoral Fellow, Centre for Tropical Environmental and Sustainability Science, College of Science and Engineering, James Cook University

We are currently living in the most explosive era of infrastructure expansion in human history. By 2050, it is projected that there will be an additional 25 million kilometers of paved roads on Earth—enough to encircle the planet more than 600 times. Around nine-tenths of these roads will be built in developing nations and tropical regions, which sustain many of the planet's most biologically diverse and environmentally important

ecosystems. Unfortunately, the contemporary avalanche of new infrastructure is having severe impacts on many ecosystems and species. However, not all infrastructure is 'bad' for the environment. In appropriate contexts, new infrastructure can yield sizeable social and economic benefits with only limited environmental costs. For instance, road improvements in already-settled areas can facilitate increases in agricultural production and improve rural livelihoods, by giving farmers better access to urban markets, fertilizers, and new agricultural technologies. Our team at James Cook University, Cairns are working in conjunction with researchers from the University of Papua New Guinea, the Papua New Guinean government and non-government organizations to devise and implement spatial land-use planning tools that will minimize the environmental costs and maximize the socioeconomic benefits of road expansion.

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Landslide and Road Design Assessment of the Eastern Highlands Segment of the Highlands Highway presented by Mr Ezeckiel Hecko, Lecturer, Environmental Sciences and Geography, School of Natural and Physical Sciences, The University of Papua New Guinea

This study is aimed at establishing the level of design of the Highlands Highway in terms of its positioning; using Geography Information System (GIS) and statistical modelling. Whether it's current positioning in relation to slope stability is at a suitable level. It also tries to identify the most influential slope failure factors and create a landslide susceptibility model of the area. The Highlands Highway is the single most important road in the country. It is subjected to frequent landslide and road deterioration problems, especially the Asaro-Waterbung segment of it in the Eastern Highlands Province. This has adverse socio-economic impacts on the country. Theoretically, roads which are not properly designed are usually faced with this problems. In fact, significant doubt can be placed on the current alignment of the highway because it was not initially designed by professional engineers. The modern-day pre-requisites of road design were not established prior to road construction. Understanding the overall dynamics of the landslide process and its relation to the roads is very vital for planning and mitigation purposes.

Ezeckiel Hecko, UPNG, ezeckielhecko137@gmail.com

Increasing number of micro-port development, and risks to coastal ecosystems in PNG presented by Dr Nathan Waltham, Principal Research Scientist, TropWATER, James Cook University

Ports are essential for economic trade and prosperity and vital for the day-to-day function of modern society. Continued operation, maintenance, and growth of port infrastructure is also becoming important for developing countries, to compete in the global goods and services market and to sustain a growing population for generations to come. Using the freely available Google Earth, we mapped the extent of coastal port facilities around the entire Papua New Guinea coastline. Surprisingly, there are hundreds of small micro-ports used to ship forest timber harvested from coastal catchments. In many cases these ports are located immediately adjacent to sensitive receptor habitats, including mangroves and coral reef ecosystems. We discuss the consequences and risks that micro-ports pose to coastal habitats, invasive species spread, contaminants and sedimentation. We provide evidence using side scanning sonar that timber logs fallen from vessels provides additional habitat structure for coastal fisheries. The number and extent of micro-ports highlights the need for relevant, long term, scientific data necessary for formation of government policy and conservation protection.

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Understanding the preconditions for community initiated WASH improvements on Los Negros Island, Manus Province of Papua New Guinea presented by Mr Peter Sharry, Director and Principal, AXIOM Water, Australia

Aims: -Masters Project research to understand the motivating and enabling factors involved in this community-initiated WaSH development initiative and implications for approaches to integrated Water Management. Learn

community initiated and led development could be conducted more effectively for sustainable outcomes in rural communities in PNG. Methods: Literature review and 39 semi-structured interviews in Manus Province of PNG. Investigated livelihoods factors, drivers for organisational innovation, governance, leadership and economic anthropology. Responses were thematically coded, gender disaggregated and summarised graphically for comparative analysis and discussion. Findings: -Traditional leadership processes were central to the community's actions. -Extensive bonding and bridging-derived social capital supports initiatives through individual action and community-based organisational networks. -The livelihood resources, capacities and aspirations of the communities provided the primary enablers for development. -The Manusian diaspora and a lack of state-led governance created the space for community-led innovation for development; and -Cash-flow from remittances and wage income alone was not a sufficient driver or enabler for development. Significance: Approaching IWM from an emic perspective, examining how the community's actions describe the principles of IWM, not the reverse improves understanding of development priorities. Promoting community-level WASH leadership and its place in development will contribute to sustainability of future projects.

Peter Sharry, Axion Water, peter@axiomwatertech.com

PNG IMPACT INNOVATION LAB FIVE: SCIENCE 1 BUILDING (S108)

INNOVATION IN HEALTH SERVICE DELIVERY

CONCURRENT SESSION 1

Telehealth: New Horizon in Management of Diabetes in Rural North Queensland: Prospect for Use in PNG presented by Associate Professor Usman Malabu, Consultant Endocrinologist, School of Medicine, James Cook University

North Queensland's rural/remote areas have limited access to health care services due to a range of barriers including living a considerable distance from tertiary health services or having restricted mobility. Telediabetes clinic has been introduced at The Townsville Hospital (TTH) five years ago as an alternative approach to deliver health care services to rural areas using information technology. Yet its role in management of diabetes at the hospital has not been evaluated. Objective: The aim of the study was to determine usefulness of telediabetes specialist clinic at TTH. Method: All subjects diagnosed to have diabetes aged >18 years who lived in rural/remote areas of Townsville Health District from 2011 to 2017 were retrospectively studied. They were divided into two cohorts – one who received Telehealth (TH) consultations from the rural hospitals and the other who travelled to TTH for Face-to-Face (FTF) consultations for the management of diabetes. Results: Clinical profile of diabetes –haemoglobin A1C, lipids, blood pressure, anthropometry, macro- and microvascular complications for the 2 groups will be compared and discussed at the conference. Conclusions: Lessons learned from the study will be presented at the meeting.

Usman Malabu, JCU, usman.malabu@jcu.edu.au

mHealth: Using mobile phones for the monitoring and evaluation of health messages: A pilot study on HIV education in three communities in the Eastern Highlands Province of Papua New Guinea presented by Ms Alessandra Mel, Territory Sales Executive, Bemobile-Vodafone, Papua New Guinea

Research into the impact of mobile phones in Papua New Guinea and how this communication platform can be utilised to improve information dissemination across geographical boundaries, has increasingly been subject to recent exploration. The study presents a pilot project that assessed the impact of the film Painim Aut from the locally produced film series Komunit Tok Piska around HIV. The methodology employed a mixed-methods approach, respective of previous M&E research (UNICEF, 2014). The study integrated a qualitative approach based on a Melanesian participatory approach developing trusting and respectful relationships with community participants. Further data collection was undertaken via mobile phones through an SMS quiz designed specifically for this research. Perceptions and knowledge levels around HIV were possible to assess through triangulation of qualitative and quantitative data. In Papua New Guinea, communal discussions about HIV remain a challenge among opposite sexes, but data collection via mobile phones provided an opportunity for individuals to respond. This demonstrated the influence of mobile phones to provide opportunities for M&E, careful consideration should be given to the research design, taking into account the need to understand cultural complexities' and community relations as part of the research.

Alessandra Mel, Bemobile-Vodafone Ltd, tandelamel@gmail.com

Rescue Swags for Treaty Villages presented by Ms Tracey Beikoff, Founder and Director of Rescue Swag, Australia

Women in Papua New Guinea's borderlands have to grapple with unhygienic and difficult conditions when giving birth. Often using old razor blades or slivers of bamboo to cut umbilical cords, an average of five women die in child birth each day and 30% of babies die due to birth related asphyxia or trauma. The Rescue Swag is a multi-purpose life-saving device. It has comprehensive first aid items and transforms into a sling, splint and immobilisation unit. Registered with the Australian Therapeutic Goods Administration the Swag also comes with an umbilical lamp, stainless steel scissors and can be used as a birthing mat. In collaboration with the 'Building

Resilience in the Treaty Villages Project' the Rescue Swag can be used by female rangers to assist women in labour 24/7. The aim of the project is to equip the trained Treaty Village Rangers with 110 Rescue Swags so they can respond to births, and emergencies with confidence and in the knowledge that they have the necessary medical supplies to be able to deal with almost any situation. To date we have 51 Swags on route to the Treaty Villages and 51 fully trained Rangers who are already working in the Villages.

Tracey Beikoff, Founder & Director Rescue Swag, tracey@rescueswag.com.au

Integrating male circumcision for HIV prevention with initiation ceremonies in Yangoru-Saussia, East Sepik: An exploratory study presented by Mr Clement Manineng, PhD Candidate, College of Medicine and Dentistry, James Cook University

To explore the possibility of integrating medical male circumcision (MMC) for HIV prevention with male initiation ceremonies (MIC) in Yangoru-Saussia, East Sepik. Method: A multi-method study assessing circumcision and HIV risk behaviour (one cross-sectional study); local acceptability (four focus groups, sixteen key-informant interviews and two cross-sectional surveys); practical feasibility (one descriptive study); and short-term impact (five key-informant interviews). Findings: Circumcision does not increase HIV risk behaviours. Most participants supported integration of MMC with MIC. Allowing integration of MMC facilitates HIV prevention and preservation of traditional knowledge and practice. Some participants had concerns about mixing modern and traditional practices and reviving unChristian rituals. A pilot MIC in 2015 included cultural training, MMC and HIV counselling and testing. This has had great impact and leaders are now appealing for continued staging of MIC. Significance: This is the first study to explore the possibility of integrating MMC for HIV prevention with MIC. Providing MMC to initiates fulfils a national policy recommendation for safe circumcision to be availed to men undergoing high-risk foreskin cutting outside clinical settings in PNG. Integrating MMC with MICs also fulfils WHO recommendation for comprehensive approaches to HIV prevention in diverse and rapidly changing cultural settings such as PNG.

Clement Manineng, Divine Word University, cmanineng@dwu.ac.pg, *David MacLaren*, JCU, david.maclaren@jcu.edu.au

Oil Search and PNG Government Partnership: Making an impact on health service delivery presented by Ms Stephanie Copus-Campbell, Executive Director, Oil Search Foundation

Oil Search and PNG Government Partnership: Making an impact on health service delivery

Oil Search Limited and Oil Search Foundation partnered with the Government of PNG, the Australian Government and eight organisations to support the development of health services for 300,000 people in Hela Province, a new province in PNG. Dealing with an emergent service delivery crisis resulting from the departure of a donor organisation that had been running the hospital for the previous eight years, this unique partnership achieved significant progress in 12 months. Between October 2015 and October 2016 the partnership:

- transitioned Tari District Hospital to a fully funded Provincial Hospital
- ensured ongoing surgical and emergency services through the contracting of key medical personnel
- funded essential services for survivors of domestic violence
- recruited over 160 staff through the national government systems
- refurbished priority infrastructure
- built a strong executive management team with effective governance systems; and
- established an extensive range of services expected of a Provincial Hospital.

This case study will present review findings and present lessons for the future of public/private partnerships. It will demonstrate how organisations leveraged strong relationships and worked through government systems to establish a sustainable health service. This effort is a demonstration of shared value by Oil Search to support Government leadership of its own development outcomes.

Stephanie Copus-Campbell, Oilsearch, Copus-Campbell@oilsearch.com

Vaccination and nutritional status of children in Karawari, East Sepik Province presented by Dr Louis Samiak, Lecturer, School of Medicine and Health Sciences, The University of Papua New Guinea

Delivery of health care services to rural population in Papua New Guinea (PNG) is problematic. Mainly due to difficulties with transportation and communication. Hence, children in this region of PNG are likely to be at risk of malnutrition compounded by inadequate vaccination that may predispose them to preventable diseases. This study aimed to determine the vaccination and nutritional status of children less than 5 years in the remote and rural Karawari area of PNG. 105 children were included in the study (55% male and 45% female). The mean age of children included in the study was 32.6 months. Their age, height, and weight by gender was not significantly different. Overall, 85% of children were not fully vaccinated. However, children over 32 months (34%) were more likely to be fully vaccinated, $\chi^2(1)=23.294$, $p < 0.005$. In addition, 25% of children were below the -1 SD (Z-scores) for weight-for-height, 33% below the -1 SD for weight-for-age, and 25.5% below the -1 SD for height-for-age compared to WHO standards. Majority of children suffer poor nutrition and lack protection from vaccine preventable diseases. We recommend that the government reopens closed health facilities and establish new ones with adequately trained staff.

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HEALTH, CULTURE AND BEHAVIOUR

CONCURRENT SESSION 2

Strengthening provision of sexual and reproductive health knowledge in communities of PNG: one step towards research impact presented by Dr Michelle Redman-McLaren, Adjunct Senior Research Fellow, College of Medicine and Dentistry, James Cook University. Co-presented by Mrs Rachael Tommbe, Senior Lecturer, Pacific Adventist University

Understanding how women experience and manage male circumcision (MC) for themselves, sexual partners and sons is essential to understand HIV and sexual health issues in Papua New Guinea (PNG). Many different foreskin cutting practices exist across PNG. Between 2012 and 2015, a two-phased qualitative study was undertaken: (i) specific questions for women were formulated; (ii) semi-structured interviews and focus group discussions were then conducted at rural oil palm plantation (Oro Province) and urban university site (Pacific Adventist University). Women have extensive knowledge about MC, despite cultural norms that mean most women do not participate in decision-making about MC or other penile modifications. Educated women reported more opportunities to influence their partner's decision about MC, to choose a partner or arrange MC for their male children. Women at PAU made recommendations for action. They requested training to assist women leaders, to make an impact when they left PAU, by being able to answer questions about sexuality, relationships and family disharmony. Educated women, or spouses of educated men, are often the first to be contacted in a village setting, because they are held in high regard. We are working to enact this recommendation as one step towards research impact in PNG.

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Health Behaviour Change Theories Application to Health Promotion Programs in PNG presented by Dr Madeline Lemeki, Lecturer, School of Medicine and Health Sciences, The University of Papua New Guinea

This research investigated the facilitators and barriers for indigenous program staff and managers to conduct realistic, reliable and valid theory based evaluations in Papua New Guinea. It used the HIV prevention programs among community-based organisations, as a case study of health promotion programs. The underlying assumption of the study was that in order to implement health promotion programs, health behaviour change theories and models should be explicitly taught to indigenous implementers of health promotion programs. This

is because health behaviour change theories determine the outcomes of health promotion interventions in the communities. The study used qualitative research methods over three different time points between 2011 and 2013. The study found that individuals working in the field have not fully understood the processes required to accomplish project outcomes, and have not adapted national program guidelines into local contexts; as they do not understand the health behaviour change theories which underpin the intervention strategies. The study proposed an approach in which health behaviour change theories would be explicitly introduced at the community level and that the competency of evaluation among indigenous evaluation staff should be built and mentored further into information use and dissemination

Madeline Lemeki, UPNG, mlemeki@upng.ac.pg; *Maxine Whittaker* JCU, maxine.whittaker@jcu.edu.au

Mammographic parenchymal patterns and breast cancer risk profiles of Papua New Guinea women: A baseline of the screening population presented by Mrs Ruth Pape, Lecturer, School of Medicine and Health Sciences, The University of Papua New Guinea

Aim: The aim of this research is to evidence for the first time the breast density of Papua New Guinean (PNG) women as described by mammographic parenchymal patterns (MPPs) and profile breast cancer risk. **Methods:** A retrospective analysis of 1161 screening mammograms of women who had undergone imaging at the Pacific International Hospital (PIH) was undertaken. Mammograms were classified into one of five Tabar MPPs; age was recorded. Descriptive analysis of the data for pattern distribution and a chi-square test, to test for relationships between age and pattern type were undertaken. **Results:** The majority (51.42%) of women had Pattern I breasts; Pattern II (30.58%), Pattern III (4.31%), Pattern IV (7.24%), and Pattern V (6.46%). The mean age was 38.8 with a range of 30-80 years; there were no obvious differences in mean age across the categories of patterns. A chi-square test reported no evidence of a relationship between age and pattern type (p -value = 0.504). **Significance:** This study demonstrated that in this snapshot of PNG women, there is no unique distribution of MPPs and no increased risk of breast cancer based on breast density profile. A more comprehensive study of the PNG screening population is required to validate this study.

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Girlhood to Womanhood: Experiences of adolescent girls at menarche in Papua New Guinea presented by Mrs Elizabeth Gumbaketi, Higher Degree Research Student, College of Medicine and Dentistry, James Cook University

Adolescence is a significant time of physical, social and psychological change from childhood. Menarche (first menstruation) is a biomarker for sexual and reproductive maturation. Studies have shown that girls experience mixed emotions at the onset of menarche. These were largely attributed to lack of preparation and socio-cultural perceptions, beliefs and practices around menstrual blood and physiological change. This study is important to understand salient issues affecting girls in transition to adulthood so that appropriate educational interventions can be developed to aid the transition of girls into adulthood with self-esteem and respect. Literature review found no such study being conducted in Papua New Guinea. Papua New Guinea is a country with over 800 different socio-cultural groups. It would be interesting to understand the experiences of girls in transition at this stage in life. Therefore, a phenomenological study has been done to explore experiences of young adolescent women at menarche in four different provinces Papua New Guinea.

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Informed consent to medical treatment in the context of traditional customs in PNG presented by Mr Alfred Minei, Lecturer, School of Law, The University of Papua New Guinea

This study planned to research the relevant laws in Informed consent to Medical treatment as exists in the traditional customary contexts of PNG. The notion of informed consent to medical treatment is a fundamental

precept in law. It recognizes individual autonomy and individual rights. Of particular concern is the strong belief and opinion of the people in the societies where traditional customs, sociology and cultural activities are prevalent and affect the individual or family or group decision-making process for their health care needs. A full realisation of autonomy and the right to personal inviolability in PNG legal system is severely constricted by its customary, social and cultural factors. A sustained focus on improving patient right, through informed consent, addressing the impediments in the traditional customs of the indigenous people in PNG posed by the social environment in which a patient operates, will nuance informed consent in health care, however, may not fully realise patient autonomy.

Alfred Minei, UPNG, aminei@upng.ac.pg

The current practice of induced abortion in Papua New Guinea presented by Professor Caroline De Costa, Professor of Obstetrics and Gynaecology, College of Medicine and Dentistry, James Cook University

Abortion is an important health issue for Papua New Guinean women. The most recent figures for maternal mortality in PNG (2006) give a rate of 773 maternal deaths per 100,000 births. Worldwide the complications of unsafe, often illegal, abortion are recognised as a major cause of maternal mortality; what few studies there are of maternal deaths in PNG suggest that this is also the case in PNG. Some recent studies in PNG show that many women presenting to health facilities with the complications of abortion disclose using the drug misoprostol to self-induce the abortion. Misoprostol is often obtained from health-workers. Traditionally most societies in Melanesia are documented to have means of inducing abortion (using herbs or physical methods). While the use of misoprostol without medical supervision is not recommended, it is potentially much safer than traditional methods and there is some evidence that this is now the case in PNG. Our presentation will look at existing literature on induced abortion in Papua New Guinea; we are also conducting a survey of all obstetricians and A&E physicians in PNG asking about their experience of induced abortion and its complications; the results will be presented at the PNG IMPACT conference.

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POPULATION HEALTH

CONCURRENT SESSION 3

Status of Iodine Nutrition and Salt iodization among the Kamea community in Kotidanga LLG Gulf Province, Papua New Guinea presented by Mr Janny Goris, Senior Public Health Nutritionist, Department of Queensland Health, Papua New Guinea Corporate Mission

Introduction: Iodine deficiency is still prevalent in remote mountainous regions of the Gulf Province, Papua New Guinea (PNG), despite implementation of the PNG universal salt iodisation strategy in 1995. This study aimed to assess the knowledge, attitudes and practice (KAP) in the use of iodised salt in the Kamea community, to determine the discretionary intake of salt, the availability of iodised salt in the households and the iodine status of school children (age 6-12 y). Methods: A cross-sectional survey was used to assess KAP regarding use of iodised salt. Salt samples were collected from 188 households. Casual urine samples were collected from 291 children, randomly selected from nine schools and analysed in the School of Medicine and Health Sciences, University of PNG. Results are currently being analysed and will be presented at the conference. Significance research: Iodine deficiency is the single most common cause of preventable mental impairment in communities with suboptimal intake of iodine. Findings of this research will be used to design and implement a community awareness raising intervention regarding use of iodised salt. Adequate iodine intake and a healthy diet is the foundation for inclusive and sustainable economic development of PNG, in particular in isolated communities.

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The oral health status of school children on and near the Kokoda Trail presented by Dr Yvonne Golpak, Teaching Fellow, Division of Dentistry, School of Medicine and Health Sciences, The University of Papua New Guinea

This study aims to determine the oral health status of Kokoda school children. School children in the villages in the Kokoda catchment area in the Sohe district in Oro Province were selected to participate in the study that entailed a questionnaire and an epidemiological survey. A total of 643 subjects at fifteen schools were selected, 492 students were examined and 461 analyzed. The students' ages ranged from 3-23 years and the mean age was 12.3 years. The vast majority (92.2%) of the students had never visited a dentist. Three-fifths (60.3%) of the students cleaned their teeth at least once a day, many using a toothbrush (66.5%) and fluoride toothpaste (65.2%). The vast majority of the students said they eat sweet biscuits and cream bun (89.6%), consumed coca cola and other soft drinks (87.9%), or had chewing gum containing sugar (85.5%) several times a month. The mean DMFT was 0.68 and the mean DMFT was 0.97. A third (33.3%) of the students had bleeding gums and a quarter (26.5%) had calculus present. Only over a third (36%) of the students did not require any treatment. The dental caries experience in and near the track was low, but the consumption of sweet foods was high and the majority of children required dental treatment.

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Infectious disease epidemiology in PNG: Lessons in diversity presented by Associate Professor Jeffrey Warner, Biomedical Sciences, College of Public Health, Medical and Veterinary Sciences, James Cook University

In almost every way it is impossible or at least dangerous to generalise about PNG (in doing so, this often defines one's ignorance about the country). However, in terms of poor health outcomes it is clear that infectious disease is a major contributor. The diversity of human culture, interactions with the environment; of geography and demography within PNG have created many unique determinates of microbe – host interactions which may lead to disease. This needs to be understood in order to explain and help mitigate their impact on morbidity and mortality. The rush by expatriate collaborators to implement a biomedical-only approach to a solution without consideration of these issues will lessen their impact or at least be wasteful. This will be discussed within the context of a 25 year partnership between Balimo District hospital and James Cook University, in a shared response to some unique infectious disease challenges in the remote, Middle Fly region of Western Province.

Jeffrey Warner, JCU, Jeffrey.warner@jcu.edu.au

Molecular epidemiology of tuberculosis in the Balimo region, Papua New Guinea presented by Dr Vanina Guernier, Research Fellow, Australian Institute of Tropical Health and Medicine, James Cook University

Tuberculosis (TB) is a serious health problem in Papua New Guinea (PNG) with an estimated 30,000 new cases and 3,800 deaths each year. In the Balimo region of Western Province, the diagnosis relies on clinical manifestations and on the microscopic detection of acid-fast bacilli in sputum smears, a technique exhibiting limited sensitivity. On the other hand, culture-based TB diagnostic is complex, expensive, slow and technically demanding. We carried out a retrospective molecular assay targeting DNA extracted from archived sputum smear slides collected from the Balimo region (2012-2014), without the need of a viable culture. We tested 1,162 slides prepared from 345 sputum samples using a qPCR approach (i) to compare the sensitivity of the microscopic versus molecular detection of *Mycobacterium tuberculosis* in TB suspects, and (ii) to assess the clinical diagnosis and response based on currently available techniques in the region. The DNA extracts from sputum smears were further spoligotyped to characterise the genetic diversity of *Mycobacterium tuberculosis* collected in the region, and to trace TB transmission in the community. These data provide an assessment of different TB diagnostic methods in the context of the Balimo region of PNG, and the first insight into the ongoing TB transmission patterns.

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The epidemiology of tuberculosis in the Balimo district of Western Province, PNG presented by Ms Tanya Diefenbach-Elstob, PhD Candidate, College of Public Health, Medicine and Veterinary Sciences, James Cook University

The Western Province of Papua New Guinea suffers from a high burden of tuberculosis (TB) disease. There has been considerable focus on TB, and particularly drug-resistant cases, in the South Fly region and provincial island capital of Daru. Our research aims to describe the TB burden in the Middle Fly District, specifically in the Balimo region. We have analysed more than 1600 TB cases diagnosed at Balimo District Hospital (BDH) during April 2013 – February 2017, with approximately three-quarters of these cases being extrapulmonary TB. Epidemiological analysis has described cases in relation to demographic and infection factors. Patient groups have been compared, focusing specifically on the three local level government areas frequently served by BDH – Balimo Urban, Gogodala Rural, and Bamu Rural. Mapping analysis has identified regions with high and low numbers of TB cases. We have also undertaken molecular characterisation of clinical samples collected from pulmonary TB patients diagnosed at BDH. This includes confirmation of TB infection, as well as identification of molecular markers associated with drug resistance. This research provides a greater understanding of the TB burden in the Middle Fly District of Western Province, providing data aimed at supporting the existing Western Province TB control program.

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Diabetes and Urbanisation in Papua New Guinea: A Wake-up Call presented by Associate Professor Usman Malabu, Consultant Endocrinologist, School of Medicine, Australian Institute of Tropical Health and Medicine, James Cook University

Background: Papua New Guinea is experiencing an enormous burden of lifestyle-related diseases due in part to rapid urbanisation. Kimbe, the provincial capital of West New Britain is the fastest growing city in the South Pacific subcontinent yet its impact on diabetes is not known. Objective: To determine the pattern of diabetes diagnosed on hospital admission on subjects who reside in Kimbe urban compared to those who live in rural areas. Method: This was a retrospective review of medical wards admission contained in Kimbe General Hospital register from 1/1/2009 to 31/12/2012. Result: Over a period of 4 years, 125 patients were diagnosed with type 2 diabetes with female: male ratio of 1: 1.1. Majority of the patients were of young population aged <50 years representing 72 % of the cohort. Almost 75% of the newly diagnosed diabetic population were based in Kimbe urban with only 32 subject (25.6%) identified as rural residents; Odds Ratio (OR) 25.5, 95% CI 17.0-38.2, $p < 0.0001$. Conclusion: This study suggests that subjects living in an area of rapid urbanisation are at higher risk of diabetes compared to residents of rural areas. It highlights the need for adequate health planning/education as part of urbanisation program in the diabetes-prone Asia-Pacific population.

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CLINICAL SKILLS

CONCURRENT SESSION 1

Building sustainability in newborn resuscitation skills and knowledge in the Eastern Highlands presented by Dr Karen New, Midwifery Clinical Academic Fellow, School of Nursing, University of Queensland. Co-presented by Ms Lucy Mahabi, Midwife and Deputy Director Rural Outreach, Nursing, Goroka Hospital

Lives can be saved around the time of birth by improving the quality of care delivered and providing effective resuscitation to neonates who fail to take their first breath; but this requires educated and well-equipped health workers¹. The Australian College of Neonatal Nurses (ACNN) provided newborn resuscitation training and provided training materials for maternity staff. Aim: To assess whether clinical knowledge in newborn resuscitation was sustained between education sessions provided by ACNN in Goroka. Methods: At each training visit a pre-test questionnaire was administered to attendees prior to undertaking the helping babies breathe training workshop for the first time. The neonatal resuscitation knowledge of each group of trainees who attended in October 2014, May 2015 and October 2015 was compared. Findings: There was an improvement in scores between October 2014 (M= 13.95, SD ± 1.54), May 2015 (M= 14.40, SD ± 1.76) and October 2015 (M=15.59, SD ± 1.01), which was statistically significant p = 0.001. Significance: The improved knowledge scores may suggest that knowledge translation and ongoing clinical education occurred. Three midwives/nurses volunteered to facilitate the training sessions, expressing confidence to demonstrate and teach neonatal resuscitation. The foreseeable challenges include assessment of clinical skills and measuring neonatal outcomes.

Karen New, The University of Queensland, k.new@qu.edu.au

Identifying the barriers to the integration of research into graduate midwives' professional practice in the Highlands of Papua New Guinea presented by Ms Jane Connell, Postgraduate Student, College of Public Health, Medicine and Veterinary Sciences, James Cook University

Bachelor of Midwifery students at the University of Goroka produced a proposal for a research study to be implemented after graduation. There was limited evidence of them being able to complete their research. This study aimed to understand the barriers perceived by the midwives to performing research in their own setting. Methods: An exploratory, descriptive study was conducted using a qualitative approach. Semi-structured interviews were conducted with graduates in the Eastern Highlands Province. Results: Research was viewed as a skill set that could be used for problem solving, improving practice and creating evidence. Participants were interested to undertake research, but lacked knowledge and skills. Barriers identified included lack of time and support in the workplace, lack of resources and no culture of research in the workplace. Enablers included having a mentor, access to ongoing training, having resources, having time during work to undertake research, and support in workplace. Conclusion: Bachelor of Midwifery curricular must increase the amount of time spent on research content which must be taught in practical ways and by experienced educators so students are inspired and skilled to undertake research. Organisational changes must be made to enhance the opportunities for graduate midwives to undertake research.

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Barriers and Facilitators to Effective Tuberculosis Infection Control Practices in Madang Province PNG: A Qualitative Study presented by Mr Gigil Marme, Lecturer, Health Management and Systems Development, Divine Word University

The aim of this study is to explore rural health workers experiences of barriers and facilitators to effective TB control practices in rural health facilities in Madang Province, PNG. Methods: Qualitative individual and group

interviews (averaging 30 minutes) and field notes were conducted with twelve (12) key informants consisting of twelve (12) clinicians (n=9) and support staff (n=3) from the health facilities. All interviews and field notes were analysed using standard phenomenological methods. Findings: Numerous interconnected factors influence the implementation of TBIC measures in the rural health facilities in Madang Province, PNG. They include issues relating to inadequacies in the healthcare systems, access to personal protective equipment (PPE), separation procedures, sputum status, monitoring and control, training, and health services are TB hotspots. Significance: It is anticipated that health workers and communities are at greater risk of exposure to TB infection in congregate settings including health facilities. This study argues that with high levels of TB in the community, illness leading people to seek treatment, health services can be TB 'hot spots' and in the absence of good tuberculosis infection control (TBIC), a clinical service may actually promote the spread of TB, rather than contain it.

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Challenges of neonatal hypothermia: Observation and assessment to improve clinical outcomes for neonates presented by Dr Karen New, Midwifery Clinical Academic Fellow, School of Nursing, University of Queensland

Background: The first few minutes after birth remain the most challenging to all newborns as they make the transition to extra-uterine life. Rapid heat loss can occur and hypothermia is a major contributor to neonatal mortality and morbidity. Neonatal hypothermia remains a challenge in high and low resource settings and in cool and warm climates. Aim: To assess the extent of the problem of hypothermia in the labour ward and if measures could be introduced to prevent neonates becoming hypothermic. Methods: Prospective observational study of neonate's temperatures when birthed and received skin to skin care compared to not receiving skin to skin care; and a review of current practice in the labour ward. Findings: One Hundred and Fourteen temperature measurements were undertaken. Those neonates who received skin to skin care had a mean temperature of 36.4°C compared to 35.3 °C for those neonates who did not receive skin to skin care. Significance: Current practices were reviewed and compared to best evidence recommendations; then measures implemented to reduce neonates becoming cold post-delivery in the labour ward. Reducing hypothermia impacted neonatal admissions to the special care nursery and potentially mortality and morbidity in the Goroka setting.

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Helping Babies Breathe Resuscitation training in resource limited environments: An observational pilot study evaluating the feasibility of conducting follow-up assessments in survivors presented by Dr Karen New, Midwifery Clinical Academic Fellow, School of Nursing, University of Queensland. Co-presented by Ms Aiva Pikuri, Midwife, Goroka Hospital

The Helping Babies Breathe Resuscitation Program has been introduced in many resource limited countries to reduce the number of newborn deaths around the time of birth. This program focuses on resuscitation and stabilization interventions in the minutes following birth for newborns who fail to take the initial first breath. Aim: The main aim of this study is to determine rates of mortality and morbidity within the newly born population at the Goroka Hospital. A secondary aim of the study is to examine the cultural acceptability to parents/guardians of having their infant filmed using a smartphone and assessed for neurodevelopment impairment, including cerebral palsy. Findings: Birth outcome (alive or early neonatal death) and disability outcome data of newborns who received face-mask ventilation will be collected from the birth register in the labour ward of the Goroka Hospital. Significance: From an educational point of view, this project has been successful, with ongoing training among local healthcare workers and retained skills and knowledge. However, to the best of our knowledge, no follow-up studies of potential morbidities have been undertaken in resource limited settings following the implementation of this program.

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The right medicine for rural- training tomorrow's doctors presented by Professor Richard Murray, Dean of Medicine and Dentistry, College of Medicine and Dentistry James Cook University. Co-presented by Professor Nakapi Tefuarani, Executive Dean, School of Medicine and Health Sciences, The University of Papua New Guinea

Much of the focus in medical workforce policy around the world has been to increase production and to some degree, promote rural medical careers. This is despite relentless trends in sub-specialisation of the medical workforce and concomitant fragmentation of care. Be it the low- or high-income country setting, it seems everywhere there is an insatiable appetite for city-based medical practitioners with narrow expertise and scope of clinical practice. Yet fragmented 'organ-by-organ' care is a health and wealth hazard for individuals and health systems. Merely boosting medical labour production may only exacerbate the problem.

The push for universal health coverage by 2030 and broader action on health-related Sustainability Development Goals requires concerted effort to re-assert clinical generalism and promote rural workforce distribution. The challenges for reform should not be underestimated, given countervailing forces: status, lifestyle, financial reward, medico-legal hazard, political influence and misconceptions around quality and safety.

A key development has been the emergence of a global alliance to advance Rural Generalist Medicine: team-oriented medical care provided across a primary and secondary care continuum and with a population health focus. Australia and Papua New Guinea have implemented rural medical training and service models that will be presented and policy implications discussed.

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DRUG DEVELOPMENT AND QUALITY

CONCURRENT SESSION 2

Counterfeit and substandard antimalarial drugs: Development of a simple tool for the rapid assessment of the quality of artemether-lumifantrine tablets in developing countries presented by Professor Beverly Glass, Professor of Pharmacy, College of Medicine and Dentistry, James Cook University

Counterfeit and substandard antimalarial drugs: development of a simple tool for the rapid assessment of the quality of artemether-lumifantrine tablets in developing countries

Malaria presents as a major health problem especially in those developing countries in the tropics and subtropics. The World Health Organisation endorsed artemisinin-based combination therapy for the treatment of uncomplicated malaria as early as 2004. The poor quality of these antimalarial drugs, either counterfeit or substandard has been questioned, due to their ability to impact health outcomes for patients and implication in the development of drug resistant strains of the malaria parasite. Thus, the aim of this study was to develop a simple, inexpensive tool to rapidly assess the lumifantrine drug content of artemether-lumifantrine tablets, for use in developing countries. Thin layer chromatography (TLC) was chosen due to being an accepted method to assess the quality of drugs and its application for use in the absence of specialised laboratories or trained staff. A high-performance liquid chromatography (HPLC) method was developed to validate the TLC method.

Results for the drug content of lumifantrine (80-100%) in the tablets showing noncompliance between 50-100% is limited by the required expertise to assess the drug content using the TLC method. Substandard artemether-lumifantrine tablets are nevertheless able to be detected and rapidly assessed using the simple tool developed during this study.

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Poor Quality Medicines: Quality Assessment of Amoxicillin Oral Products in the National Capital District, Papua New Guinea presented by Naomi Hehonah, Senior Lecturer Pharmacology, School of Medicine and Health Sciences, The University of Papua New Guinea

Amoxicillin continues to be an essential medicine in Papua New Guinea (PNG). Due to its broad spectrum- activity demand is increasing and creating the opportunity for the occurrence of poor quality medicines. The existence of substandard and counterfeit medicines continues to be a global public health concern, with anecdotal reports indicating the presence of poor quality medicines in PNG. Therefore, the aim of this study was to assess the quality of amoxicillin sold in retail pharmacies and those distributed by National Department of Health in National Capital District (NCD). Samples of Amoxicillin oral preparations were collected from retail pharmacies, including private hospital and all health facilities throughout NCD. The samples were physically inspected according to International Pharmacopoeial (IP) parameters, and analyzed by High Performance Liquid Chromatography to determine their quality. All Amoxicillin preparations are required to contain between 80-102% of amoxicillin trihydrate. Results however showed 80% noncompliance for 250mg capsules and 100% for 500mg capsules, with the potential for these substandard medicines to contribute to the development of resistance and compromise therapeutic effectiveness. Continuous assessment for quality of amoxicillin is thus vital to minimize the occurrence of poor quality medicines and to prolong the effectiveness of this medicine in the country.

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Common Traditional Medicinal Plants used to manage Type 2 Diabetes Mellitus in Solomon Islands, Fiji and Tonga presented by Ms Numa Vera, Lecturer, Department of Pharmacy and Pharmacology, School of Health Sciences, Fiji National University

This study investigated the use of Traditional Medicinal Plants (TMPs) by individuals diagnosed with Type 2 Diabetes Mellitus (T2DM). Method: A descriptive cross-sectional study was conducted in Solomon Islands, Fiji and Tonga from June 27th to July 22nd 2016. Individuals with T2DM aged 18 years and above were randomly selected and interviewed using a structured questionnaire.

Findings: A total of 548 participants were interviewed. Half, 50% (n=274) of the participants reported using TMPs for the management of T2DM. Of this, 57% (n=157) took TMPs concurrently with modern medicines. The most common TMPs used include; *Annona muricata L*, *Zingiber officinale Roscoe* and *Morinda citrifolia*. Some factors influencing use of TMPs were identified. Significant findings of this study can be used to inform optimal management of T2DM.

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Innovative systems-based research as a new approach to develop vaccines and diagnostics to improve public health presented by Professor Denise Doolan, Professorial Research Fellow, Australian Institute of Tropical Health and Medicine, James Cook University

Chronic infectious diseases such as malaria and tuberculosis remain a major public health problem despite intense investigations in different disciplines over many decades. My research aims to develop novel therapeutics and diagnostics for chronic infectious diseases by using innovative approaches to overcome long-term challenges. We view the host response to a foreign pathogen as the integration of many distinct cellular and molecular components, and focus on this complexity rather than on one component in isolation. We combine immunology with genomics, bioinformatics and computational sciences to comprehensively analyse this complex response to infection at the molecular level. Using samples derived from field studies in disease-endemic settings (including PNG) as well as from controlled human infection studies in the laboratory, we are developing a pipeline of novel molecules associated with protective immunity that can be transitioned towards

clinical development. We are also identifying biomarkers of immunity or disease risk that can be used for population-based screening, to define at-risk individuals for targeted intervention. This research has the potential to improve the health of the millions of people worldwide suffering from chronic infectious diseases

Denise Doolan, Australian Institute of Tropical Health and Medicine, JCU, Denise.doolan@jcu.edu.au

Community randomized safety trial of triple-drug mass drug administration for lymphatic filariasis in Papua New Guinea presented by Dr Livingstone Ravul, Senior Research Fellow, Vector Borne Diseases Unit, Papua New Guinea Institute of Medical Research

Small studies in Papua New Guinea (PNG) have shown that a single co-administered dose of Ivermectin (IVM), Diethylcarbamazine (DEC), and Albendazole (ALB; IDA) is far more effective at eliminating *W. bancrofti microfilaremia* (Mf) than standard mass drug administration (MDA) with DEC plus ALB (DA). To confirm the safety profile of IDA, a larger community-based open-label parallel group cluster randomized trial was conducted in Madang. Healthy non-pregnant community members aged >5 years, were offered IDA or DA. Participants were actively followed for 2 days and then passively followed for 5 days to screen for adverse events (AEs). 4,579 participants were enrolled and treated between November 2016 and April 2017, with 91% of these followed up on either day 1 or 2 after treatment. Interim analysis on 2,697 participants (IDA=2386, 22% FTS+, 2% Mf+; DA=2193, 23% FTS+, 3% Mf+) reveals 18% of participants experienced mild to moderate AEs, with no severe or serious AEs in either treatment group. Headache, nausea, fatigue, fever and dizziness were the most commonly reported AEs. These were more common in participants receiving IDA (20%) compared to those receiving DA (13%, $p=0.0032$). The safety profile of IDA appears suitable for use in MDA programs to accelerate LF elimination.

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Harnessing Plant cyclotides (cyclic plants protein) as templates for drug designing in PNG presented by Mr Reynold Phillip, Lecturer, Chemistry, School of Natural and Physical Sciences, The University of Papua New Guinea

Plant cyclotides are cyclic plant proteins found in *Rubiaceae*, *Violaceae*, *Curcubitaceae*, and *Fabaceae* plant families. These peptides are natural occurring cyclic peptides with approximately 28-31 amino acid residues in length. They have very stable structural nature; unlike the other linear peptides, it cannot be denatured by heat or under acidic conditions. This structural feature makes it aQractive as a template for drug design & development. Such research has great potential in PNG with its available fauna and flora biodiversity. In fact, PNG through The University of Papua New Guinea had contributed in this field of research by screening and identifying a Plant in the *Fabaceae* Plant family which rocks the cyclotide researches across the globe. Through our screening program in collaborations with Prof. David Craik's Lab at University of Queensland, we had discovered a cocktail of novel plant cyclotides. Since then, a lot has evolved out of this research with the globe targeting into this plant family. The next step for this research in PNG is the development of these natural occurring cyclic peptides by synthesising and bioactivity screening leading to potential of commercialisation.

Reynold Phillip, UPNG rphilip@upng.ac.pg

MEDICINE

CONCURRENT SESSION 3

Psoralen induced Phytophotodermatitis by MORACEAE on common skin pigments in PNG presented by Mr Napoleon Wale, Final Year Research Project Student, Applied Sciences, Papua New Guinea University of Technology

Tropical skin diseases are primarily linked to the solar influence on the equator. Apart from skin cancer, inflammatory mediators stimulate nerve endings leading to itching and stinging sensations. *Moraceae* latex induces photochemical dermatosis when exposed to sunlight. This study assesses the severity of several *Moraceae* species with different skin pigmentation populace.

Furocoumarins, particularly psoralen level will be determined as the cause of light induced phytophotodermatitis. Participants representative of diverse skin pigmentation will be inoculated with latex from *Artocarpus altilis*, *Ficus septica*, *Ficus nodosa* and *Ficus copiosa*. Statistical assessment (MS Excel) of response will provide basis of ideal pigmentation-latex phytophotodermatitis or phytophotodermatitis. Duplicate latex samples will be collected (Unitech, Lae) subjected to steam bath exhaustively extraction with ethanol (95%) three times (30 min) and concentrated in vacuo. Extract is then partitioned by petroleum ether (PET), benzene (BZ) and dichloromethane (DCM) in sequence. Respective fractions will be column chromatographed and eluted in increasing polarity, viz. PET, BZ, ethyl acetate (ETAC), and methanol (MeOH). White residues from equivalent (3 ml) fractions will be used for isolation of psoralen constituents by GC-MS at JCU, Australia. A severe case recorded provides leads to development of latex induced phototoxic skin irritation/dermatosis repellents.

Napoleon Wale, Papua New Guinea University of Technology, napoleonwale@gmail.com

Expanding the capacity of Papua New Guinea health districts to utilise immune-based diagnostics for extra-pulmonary tuberculosis: A rural district hospital to reference laboratory model presented by Associate Professor Catherine Rush, Australian Institute of Tropical Health and Medicine, James Cook University

There is evidence emerging that integrating blood-based immune cell diagnostics within a TB diagnostic algorithm will greatly improve the accuracy of TB and particularly extra pulmonary TB (EP-TB) diagnosis in PNG. In collaboration with Balimo District Hospital and the PNGIMR this pilot project aims to validate an immune-cell based diagnostic system for TB which is accessible to rural districts and that can be sustainably integrated into current laboratory diagnostic networks in PNG. The specific Aims are: (1) to establish the parameters by which sample integrity for immune cell assays can be maintained utilising cell stabilisation reagents; collection, storage and transport; (2) to determine the blood profile which discriminates EP-TB from latency and active pulmonary disease and integrate this into existing TB diagnostic algorithms. We have: (1) determined optimal blood preservation and transport procedures from Balimo PNG to JCU Townsville; (2) developed blood-based immune cell assays and are currently validating these as an adjunct to current in-country diagnostic methods. This project will provide proof-of-concept towards the validation of immune cell-based diagnostic tools to aid in the diagnosis of EP-TB that is accessible to rural districts within PNG for future upscaling to use in-country.

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Restoration of UPNG Pathology Museum Specimens: A collaborative project presented by JCU and UPNG presented by Dr Teresita Aceret, Technical Officer, College of Medicine and Dentistry, James Cook University

JCU has been in close association with the UPNG, supporting Medicine and Allied Health Sciences students, by sharing its staff, facilities and resources in Tropical Medicine. The UPNG Pathology Museum, established in the 1960s, contains 700+ reference specimens of tropical diseases and abnormalities. However, these pots are in need of immediate repair. This project aims to: -restore 47 UPNG museum pots at JCU -train a UPNG Pathology Technician on reporting procedures Results UPNG sent 47 Pathology pots in various degrees of disrepair to JCU Anatomy and Pathology Laboratory. Pots leaked, specimens were half-exposed, dried up, and had fungal growth. Media turned cloudy and yellow. Specimens were detached, often lying at the bottom. These were cleaned, rehydrated, then gelatin coated to reconstruct friable issues. New pots with fresh solutions were used. A UPNG Museum technician was trained for a week on potting techniques. A manual on with Pidgin text was written

and a potting kit was also assembled to be brought back to UPNG. Conclusion Concerted efforts of JCU and UPNG renewed 47 UPNG pathology pots and added more years of use for students, staff and researchers. It is imperative that other museum specimens be restored ASAP, preserving these valuable scientific materials.

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Smoking, Particulate fuel use, increasing BMI (but not betelnut use) increase the probability of obstructive airway conditions in adults from NCD, PNG presented by Dr Shalon Taufa, Lecturer, School of Medicine and Health Sciences, UPNG

Exposure to tobacco smoke and particulates from fuel smoke are a risk factors for Chronic Obstructive Pulmonary Disease (COPD). Papua New Guinea has a high prevalence of smoking, which is a leading cause of COPD. Many families also use fuels producing particulate smoke for cooking, which may further increase the risk of developing lung disease. Chewing of Betel nut (*Areca catechu*), which is prevalent in PNG, has also been shown to cause bronchoconstriction in asthmatic patients. This study was conducted to determine the relative contribution of smoking, particulate fuel use, and betel use on the probability of developing obstructive lung disease. Lung function was assessed in healthy adults using spirometry. Smoking and particulate fuel smoke inhalation both independently increased the probability of decreasing lung function. The use of betelnut did not alter the probability of decreasing lung function. Interesting, elevated BMI increased the probability of decreasing lung function in smokers who did not use particulate fuels and in particulate fuel users who did not smoke, and was greatest in smokers who used particulate fuels. Understanding the interactive effects between COPD risk factors will help predict health outcomes in PNG and increase public education on COPD prevention. *Shalon Taufa*, UPNG, shalontaufa@gmail.com; *Suzy Munns*, JCU, suzy.munns@jcu.edu.au; *Will Edwards*, JCU, will.edwards@jcu.edu.au

Iron content in Fortified Rice sold in the NCD, PNG presented by Associate Professor Victor Temple, School of Medicine and Health Sciences, UPNG

Introduction: Iron deficiency anaemia is the world's second leading cause of disability among women and children. It has major negative impact on health, on social and economic development. Legislation for mandatory Iron fortification of rice was introduced in PNG in 2007. This study assesses the presence of Iron in brands of rice sold in NCD. Methods: Brands of rice labelled "fortified with Iron" sold in NCD were purchased from various outlets. Standard Operating Procedure (SOP) was used to qualitatively assess the presence of Iron-fortificants in unwashed and washed samples of each brand of rice. Results: Of the 14 brands tested 7 (50%) were positive for Iron. Iron-fortified kernels were used in 3 (42.9%) and dusting technology was used in 4 (57.1%) of the 7 fortified brands. Results for unwashed rice, prewashed rice and the water drained from prewashed rice will be presented and discussed. Availability of the SOP for routine testing of rice will also be discussed. Significance of the research: Despite the existing legislation, significant amounts of rice sold in NCD are not appropriately fortified with Iron. Effective and sustainable Iron fortification monitoring programme is needed to ensure that only Iron fortified rice is sold in the country.

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Influence of region of origin on the anthropometric and performance characteristics in Papua New Guineans: A work in progress presented by Mr Kieren Sciberras, Honours Student, Sport and Exercise Science, JCU

The purpose of this study is to 1) Examine anthropometric and performance characteristics of Papua New Guinean athletes and community dwelling persons; and 2) Determine associations between the anthropometric and performance characteristics and the participants' region of origin. Previous research has indicated that athletes who live in certain regions or have certain genetic backgrounds may have superior physiological and anthropometric characteristics compared to those from other regions. Although study on this topic has been completed in parts of Africa, currently in the Asia Pacific region there has been limited research on the effect of region of origin on the above-mentioned characteristics. Data for this project will be collected in Papua New Guinea by having participants complete heritage questionnaires and relevant physical fitness testing. Participants will be split into two groups; Group A consisting of athletes involved in the Papua New Guinea Sports Foundation's sports programs and Group B consisting of trained and untrained persons from regional areas.

Information gathered from this project will not only fill gaps within Talent Identification research in the Asia Pacific region but will also assist Papua New Guinea in the recruitment and development of athletes.

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POSTER PRESENTATIONS: Michael Somare Library

Fruit mesocarp morphology of *Elaeocarpus* (Elaeocarpaceae): A phylogenetic survey presented by Ms Janet Gagul, PhD Candidate, James Cook University

Elaeocarpaceae, a moderately large family of trees and shrubs comprises about 550 species in 12 genera. Within Elaeocarpaceae, fruit morphology varies from capsules (*Sloanea*, *Dubouzetia*, *Peripentadenia*) to berries (*Sericolea*, *Aristotelia*) to drupes (*Aceratium*, *Elaeocarpus*). *Elaeocarpus* L., the largest genus (c. 360 spp.) in the family is well defined morphologically by the distinct fringed petals and drupaceous fruits, which often contain robust woody fruit stones. These woody stones (formed from inner mesocarps) are morphologically highly distinctive and vary in size, shape and ornamentation, providing useful characters to differentiate species. The woody fruit mesocarps however, are not restricted to Elaeocarpaceae but also occur in other families (Anacardiaceae, Cunoniaceae, Euphorbiaceae and Rutaceae).

Taxonomic studies on *Elaeocarpus* have been based largely on morphology, but only a few have included mesocarp morphology to support taxonomic classification because fruit mesocarps displayed high morphological variation. Phylogenetic studies on the other hand have been done to resolve relationships within *Elaeocarpus* but none have incorporated fruit mesocarps extensively in a phylogenetic context.

Mesocarp morphology of *Elaeocarpus* fruits will be utilized for the first time in a phylogenetic context. A comprehensive phylogenetic survey of fruit mesocarps of *Elaeocarpus* will be done. Morphologies such as size, shape, ornamentation and anatomy of the mesocarps will be used. With the current strong molecular phylogenetic framework of the genus, which is built on c. 30% of species diversity, we aim to address the broad question: 'what are the evolutionary patterns of fruit mesocarp morphology in the genus *Elaeocarpus*?' The results will provide insights into species-level relationships and help us to understand the evolution of the genus.

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Crafting Together: Collaborative Arts-based Research Methods presented by Dr Daniela Vavrova, Director of AV Lab and Anthropological Laboratory for Tropical Audiovisual Research, The Cairns Institute

Using different audio and visual approaches in a qualitative inquiry enables us to engage with the people's life in the process of creation. Utilising different media keeps research alive and people interested. Different art-informed approaches facilitate diverse sensory responses. Collage, for example, is a tacit way of expressing the lived experience. In a collage, it is fundamental to re-see, re-locate, and re-connect things in a new way. A person creates a new platform and gives a new life to something that has already existed. Creating a storyboard and then actual recording of the story is another way of revisiting people's everyday practices and sharing the narratives. These methods give precedence to shared visions between the people, the ethnographer, and the viewer. The dialogic approach in this sense is not only about sensory experience but also about its communicative dimension. In the form of a poster we would like to present a collage composed of different drawings, photographs, and storyboards, that were made during 2010 and 2011.

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Using Technology to Promote a Culture of Cooperation for Supporting Higher Education Learning and Teaching in PNG presented by Mr Philemon Yalamu, Swinburne University of Technology

This research aims to explore the potential of Melanesian educational approach to improve higher education learning and teaching in PNG. It will look into the use of technology to support this approach and to provide resources that can be shared by students in diverse higher learning institutions in PNG.

Existing problems such as low employment rates for university graduates (EMTV Online, 2017), may be attributed to the lack of quality learning resources. There is also the challenge of limited space on campuses (ABC News, 2016; Kupul, 2016; The National, 2016). Technology can prove a cost-effective way to address these challenges and enable higher education institutions and students can gain access to scarce expertise. Furthermore, contrast to the Western competitive model, the Melanesian educational approach of sharing and collaboration could fit well with PNG culture and consequently inspire learning of a higher quality. Quality of education could be improved and students be motivated to advance their learning.

In 2016, the vice-chancellor of Papua New Guinea University of Technology, Dr. Albert Schram contends that "having an inadequate educational outcome at all levels, whether it be primary, secondary, or tertiary, is holding back the development of the country" (ABC News, 2016). This research proposes the use of technology as a cost-effective and culturally appropriate strategy for improving higher education in PNG.

It is too early in this research to make conclusions, however preliminary investigations showed that technology presents a key opportunity to provide a collaborative learning environment amongst higher learning institutions within PNG that also supports the Melanesian educational approach.

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