



IA AO SAMOA

THE NATIONAL UNIVERSITY OF SAMOA

RESEARCH PLAN

2018-2023



Prepared by:

**The University Research & Ethics Committee
Le Papaigalagala Campus**

October 2018

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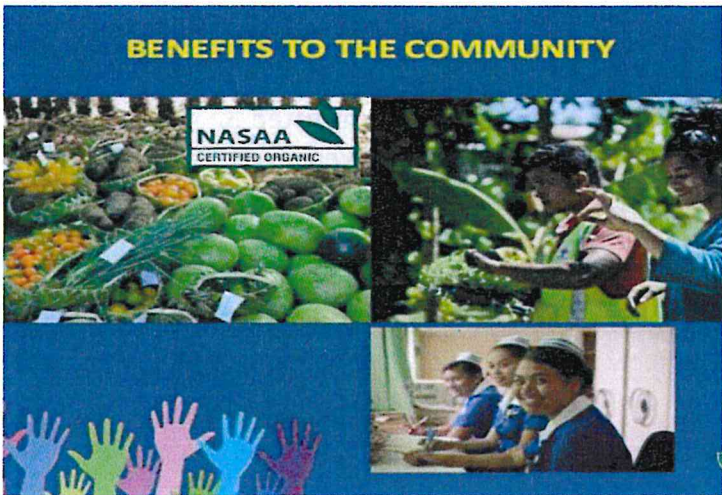
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1. FOREWORD

The National University of Samoa (NUS) has progressed in its pursuit of academic excellence in research. Since its establishment in 1984, NUS had focused on its teaching role. This changed a little more than a decade ago, when the university embarked on a new strategic direction to establish a research culture amongst its academic and teaching staff to inform teaching and classroom practice as well as contribute to the creation of new knowledge within their disciplines. This propelled staff to engage in research activities and have their work published in international and peer-reviewed journals. Like any new initiative, there were teething challenges, but these were eventually addressed through continued Professional Development opportunities, sustained short-term research skills capacity-building workshops and through the sheer persistence and hard-work of our staff. Today, we now have four new professorial staff as a result of their prolific publications profile, together with numerous academic and teaching staff who have published work over the past decade.

While our research areas for the past ten years, have been guided by research priorities set by staff and their respective faculties and centres, this Research Plan provides a comprehensive guide on the research priorities of the university for the next 5 years. The plan clearly outlines the 4 key research priority areas for NUS for 2018-2023, which aligns well with the 4 Strategic Priority areas of the Government's *Strategy for the Development of Samoa*, as well as the Education Sector's 6 targeted research priority areas. The proposed funding plan in this document may be ambitious, but it is imperative for Government, donor partners, our friends and supporters to understand that in order to conduct quality research, funding support is required. Hence, this plan is intended to move the University towards quality research that is rigorous, relevant, sustainable and innovative, as it has significant impact on the social, cultural, technological, environmental and economical aspects of peoples' lives. It is also intended to sustain our efforts in strengthening our staff research capacity for relevant and quality research to inform policy decisions on national needs.

Pesetā Dr Desmond Mene Lee Hang

Chair, University Research & Ethics Committee &
Deputy Vice Chancellor for Academic & Research

2. EXECUTIVE SUMMARY

The National University of Samoa (the NUS) is committed to innovative, high quality research and teaching, and for the former to inform the latter in a mutually reinforcing association. The necessity for an integrated model for academic and research plans demanded an immediate response, and the need has been addressed, in part, through this research plan.

Its young years notwithstanding, the NUS aims to become a leading research and education institution in the region and the world. With a pool of capable researchers and academic staff across the disciplinary spectrum at its disposal, the NUS is well placed to achieve that broad aim in the foreseeable future.

Whilst our quest for new theories and the generation of new ideas will continue through our pure research undertaking, Samoa's unique circumstances pose the need for a more serious attention to applied research, and for NUS research to benefit society in a more immediate and tangible manner. The new turn is not necessarily a paradigm shift though. It is more a re-focusing and extension of our research vision, mission, objectives, effort and cost.

The present outward turn is in fact required by Government policies, socio-economic plans, private sector resource needs, contingency factors such as climate change, and the NUS's own research foresight and wisdom to engage, innovate, be relevant, have a definitive and measurable impact, and be effective in its capacity. In short, it is about making a difference, without giving up on our perennial quest for research excellence, imagination and curiosity.

This research plan is thus driven by our aspirations for Engagement, Relevance, Innovation, and Impact. Those aspirations determine our overarching research themes: economic development; environment protection and sustainability; a healthy Samoa; and, the promise and caution of the information age. These themes are interrelated and are mutually enriching, and they converge at a single point: Development.

Relative to those research themes and pursuing our development needs, our strategic research priorities over the next five years are:

- (1) TVET and the provision of knowledge and skills relevant to the work market.
- (2) Environment protection and sustainability in the face of climate change.
- (3) The health and well-being of all Samoans.
- (4) Information technology (IT) for professional and business development.

3. NUS RESEARCH ASPIRATIONS, THEMES & PRIORITIES

Inspired by the need for economic development, TVET research and teaching is driven by industry interests, thus becoming more relevant to the needs and issues of society. Innovation for economic growth through the promotion of sustainable industries, including new secondary and tertiary ones, and the attendant creation of real jobs is therefore a significant part of the challenge. **Figure 1** is an overview of the areas of focus for the NUS Research for Development plan.

With the statutory incorporation of the Samoa Polytechnic Institute into the NUS framework in 2006, TVET research and education is now one of our primary responsibilities.

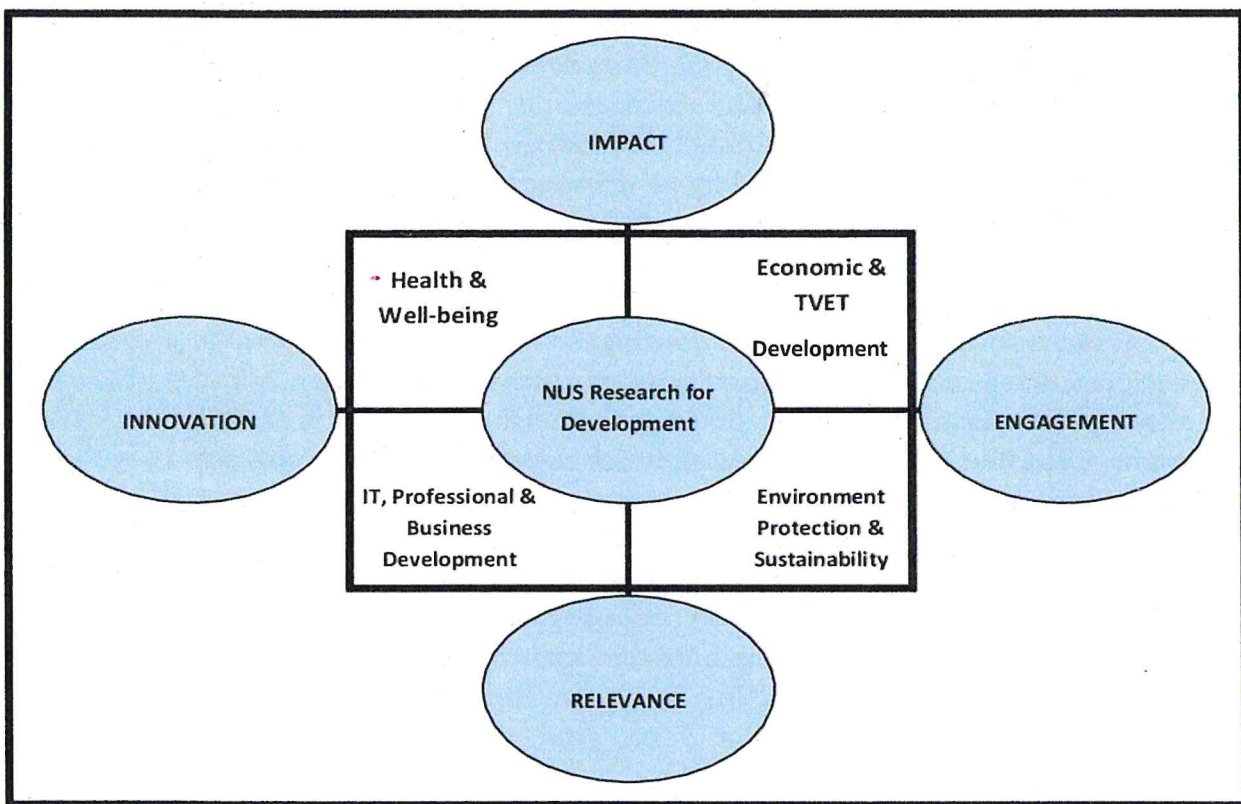


Figure 1. Overview of Areas of Focus for the NUS Research for Development Plan

Given our extreme vulnerability to the dangerous ends of global warming and rising sea levels, our environmental scientists, through their research, are well placed to offer relevant analysis of the issues as well as appropriate solutions from where we are, as it were. Sustainability of the environment has a special meaning for small Pacific islands like Samoa. A healthy population is a productive one, and quality research and education in health care and medicine is designed to improve the health

and well-being of all Samoans. IT research and education takes us forward in this information age, adopting creative adaptations of new technologies for professional and business development. Research and education on our own Samoan culture, including research and publication in the Samoan language, constitutes our unique research niche. It is what makes us different. Although the focus is on those designated areas, research will continue in the other disciplines as well, thus maintaining the full gamut of our research activities.

To ensure that our research priorities, commitments and goals are successfully realized, performance will be measured against set targets and indicators, and will be subject to evaluation and quality assurance requirements.

While adopting the usual tests of impact like citations and other metrics, a common sense approach, predicated on the 'what works' maxim, is perhaps not unorthodox at all. Seeking to make a qualitative and quantitative difference in society, NUS research will bring academic theories, hypotheses and models down to the level of empirical reality and for those intellectual constructs to find engagement, relevance, innovation, and impact therein.

NUS researchers and academic staff are well prepared for the task, and if necessary, working in concert with our external partners to produce quality research and education as well as meaningful application.

This research plan frames those aspirations, sets the direction for NUS research over the next five years, integrates research and education with the NUS's institutional vision, mission and strategic objectives as specified, and sets out strategies and actions for the achievement of research priorities and goals.



As a roadmap, the plan provides the framework for NUS academic staff and administration, and our external partners, to work together to produce a research culture defined and driven by engagement, relevance, innovation, and impact.

While promoting independent thinking and scholarship, we will also seek to foster a strong sense of academic collaboration across NUS faculties, schools and centers, thus strengthening NUS research structures and capacity, and extending its impact.

And with a reformed NUS research structure being progressively implemented, we are poised to embark on an exciting research journey into the next five years while always forging new partnerships for financial and non-financial collaborations with local and external stakeholders.

4. THE NUS VISION, MISSION, MANDATE, STRATEGIC PRIORITIES & STRATEGIES

Research is a central function of the NUS. It is governed by NUS's vision, mission, mandate, strategic priorities, and strategies. As a matter of evident necessity, it is aligned with our Government's socio-economic, educational and other policies.

The NUS vision, as clearly stated in its seminal statements,¹ is to become a 'vibrant and innovative University of Excellence in Research, Samoan Studies, and Quality Education and Training, which is responsive to National Development Needs.' Our mission is 'to produce quality graduates from across all disciplines to meet the nation's human needs.' Our Core Values include responsiveness, meaning, 'resilience in our pursuit of excellence in teaching and learning, research, safeguarding of Samoa's heritage, sustainability and professionalism, and responsiveness to national needs.' Our Mandate prescribes our core business, and that is to:

1. Preserve and maintain the Samoan language and culture, and promote teaching and research on all matters pertaining to Samoa.
2. Provide education and technical training that contributes to Samoa's economic growth and social development.
3. Enhance academic collaboration and operational efficiency.
4. Increase and transmit knowledge; and
5. Encourage intellectual independence and diversity.

Our four Strategic Priorities are all related, either directly or indirectly, to our research function. In particular, our Strategic Priority 3 (SP3) requires strengthening 'research relevant to national needs.'² That priority is to be achieved through well-defined strategies, including strengthening 'the research centre of the University,' ensuring our research 'benefits the ongoing development of the University and contributes to the well-being of society,' and improving the 'research capability of staff and students engaged in research.' Set actions for achieving that priority include improving TVET research and education, establishing external and internal collaborations, aligning

¹ *National University of Samoa, Le Iunivesite Aoao o Samoa, Calendar 2018, 34; NUS Strategic Plan (FY2017/18-2020/21), Your University, Samoa's Future, 5-18; NUS Corporate Plan (FY2017/18-2020/21), 8, 13-14, 19.*

² *National University of Samoa, Le Iunivesite Aoao o Samoa, Calendar 2018, 34; Strategic Plan (FY2017/18-2020/21), Your University, Samoa's Future, 9; Corporate Plan (FY2017/18-2020/21), 9.*

research priorities with national Development Strategies, and increasing support for researchers.

Human development is our overriding aim for this plan. However, financial constraints are duly noted, but that should not discourage the University community from seeking external sources to fund major activities, especially for research, student services, and infrastructure.³

5. BACKGROUND, INSTITUTIONAL & POLICY CONTEXT

As the template on research outputs (below) clearly shows, since its inception the NUS has been undertaking basic and applied research, as well as conducting pilot projects. This plan continues previous strategies to promote NUS research, while extending their scope and scale (See Appendix 1).⁴ Committed to the construction and sharing of knowledge and solutions, we aim to consolidate existing research and teaching partnerships with external institutions and organizations, and forge additional effective and productive ones.

The prevailing institutional and policy context includes Government socio-economic policies for development. The timeline and priorities of this plan are thus aligned with the time frame and policy direction set out in Government's *Strategy for the Development of Samoa 2016/17-2019/20*, 'Accelerating Sustainable Development and Broadening Opportunities for All.' The *Strategy* articulates development priorities and the strategic outcomes being sought:⁵

Priority Area 1: Economic

Key Outcome 1: Macroeconomic Resilience Increased and Sustained

Key Outcome 2: Agriculture and Fisheries Productivity Increased

Key Outcome 3: Export Products Increased

Key Outcome 4: Tourism Development and Performance Improved

Key Outcome 5: Participation of Private Sector Development Enhanced

Priority Area 2: Social

Key Outcome 6: A Healthy Samoa and Well Being Promoted

Key Outcome 7: Quality Education and Training Improved

Key Outcome 8: Social Institutions Strengthened

Priority Area 3: Infrastructure

Key Outcome 9: Access to Clean Water and Sanitation Sustained

³ NUS *Corporate Plan (FY2017/18-2020/21)*, 18.

⁴ *EC12/05/07 – Two Phase Research Plan* (for NUS publications, approved in 2012).

⁵ *Strategy for the Development of Samoa 2016/17-2019/20*, 2; see also the *Strategy for the Development of Samoa 2016/2017-2019/2020: Monitoring and Evaluation to Support the SDS* (December 2016).

Key Outcome 10: Transport Systems and Networks Improved
Key Outcome 11: Improved and Affordable Countrywide ICT Connectivity
Key Outcome 12: Quality Energy Supply

Priority Area 4: Environment

Key Outcome 13: Environmental Resilience Improved
Key Outcome 14: Climate and Disaster Resilience Increased

The fit between Government policy and NUS research and education priorities we have carefully analyzed and negotiated. NUS research and education priorities are not convenient academic extrapolations. In fact, they have been broadly framed to accommodate the resource and development needs of society as required by Government's *Strategy for the Development of Samoa 2016/17-2019/20*.

The importance of research for Government policy determination and planning is now generally recognized. This timely recognition now underpins cross-sector and sector-agency research, giving research new life, impetus and scope. Making research a mutually reinforcing undertaking amongst three agencies in the Education sector is evidence of that.

The *Samoa Education Sector Research Strategy & Action Plan 2017* entrusts to the NUS, the Ministry of Education, Sports and Culture (MESCC), and the Samoa Qualifications Authority (SQA) the following mission: 'To encourage, design and conduct relevant research of high quality that strengthens the education sector and its service delivery for the development of Samoa, through harmonized and cooperative endeavors.'⁶

The desired end-result of such sector-agency cooperation is the greatest research impact possible. The aim is to adopt a concerted and integrative approach, with the NUS leading research on education issues. The overriding policy interest is research development. The principal goals include the determination of relevant common research priorities, achieved through closer cooperation amongst the three sector agencies. Strategies include establishing annual research plans for the three sector agencies. Outputs, achieved through set action plans, include research plans that are achievable and measurable. Goal 4 of the *Education Sector Plan (ESP) 2013-2018* seeks 'improved sector coordination of research, policy and planning development' (Mandate and Core Values). Strategic priorities include Strategic Priority (SP) 3: 'Strengthen Research Relevant to National Needs.'⁷

⁶ *Samoa Education Sector Research Strategy & Action Plan*, Report of the Working Group, NUS, June 2017, i.

⁷ *Education Sector Plan (ESP) 2013-2018*, 9, 12.

Further extending and enriching the NUS research function is the re-focus on TVET research and education noted above. In addition to Government's *Strategy for the Development of Samoa 2016/17-2019/20*, 'Accelerating Sustainable Development and Broadening Opportunities for All' already noted, the *Samoa TVET Strengthening Program* (Program Design Document, PDD, December 2017) underlines the importance of TVET education and training for economic development. It promotes alignment with Samoa's stated development needs, especially employment for all Samoans. In its drive for relevance, TVET research and education will address the need for core competencies.

The *Technical and Vocational Education (TVET) Strategy for Samoa 2018 -2022* (as proposed) sets out a national framework for TVET research and education, and the correlation between TVET and economic development is a compelling refrain running throughout the *Strategy*:

[A] strategic framework with a set of practical strategic objectives and goals to respond to the demand for skills and competencies of the labour market to create a competent, motivated, and adaptable workforce capable of driving economic growth and development. It is about job creation.⁸

The *Strategy's* call to transcend negative perceptions of and (at times) a palpable aversion to TVET career paths finds a positive response in the NUS's purposive re-focus on TVET research and education.

Our School of Nursing and School of Medicine will continue to focus on, extend the scope and deepen the quality of research and education on health and medical issues in accordance not only with Government policy for improved health care and quality medical treatment for all Samoans, but the NUS's own commitment to human well-being as a human development index. Partnership with external institutions, such as the University of Victoria, Wellington, New Zealand, on health and medical research and education will continue to benefit Samoa through the NUS's collaborations.

6. NUS RESEARCH GOVERNANCE & MANAGEMENT

The University Research and Ethics Committee (*UREC*) was set up to realise the NUS research vision by enabling and empowering NUS Staff 'to increase the performance and quality standing of research and consultancy within the University.'

⁸ *Technical and Vocational Education (TVET) Strategy for Samoa 2018-2022*, 2.

Making the NUS 'an internationally recognised institution of excellence in Samoan studies and to provide a diverse and quality public tertiary education'⁹ is part of UREC's mission.

Members of UREC as the governing body are:

- The Deputy Vice Chancellor Academic and Research (Chairman)
- Director of the CSS
- Manager of the Oloamanu Centre for PDCE
- Head of School of Maritime Training
- University Librarian
- Director of Finance/Representative
- Professorial/Researcher Representatives of Faculties:
 - Arts
 - Business and Entrepreneurship
 - Education
 - Health Science
 - Science
 - Technical Education
- Manager of Research Development (Secretary)

UREC objectives, according to its *Policy Manual*, are:

- (1) To identify, initiate and co-ordinate research in priority areas of development.
- (2) To co-ordinate and encourage on-going research that might contribute to the promotion of the University.
- (3) To solicit funding for research from national and international sources.
- (4) To establish a Directory of Expertise and promote the University as a provider of consultancy services.
- (5) To undertake any activity that would promote academic research both nationally and internationally.

NUS research development is managed through a Manager of Research Development whose duties and responsibilities include enhancing 'engagement in research management,' promoting research capacity across the University, and preparing 'research reports for NUS Council.' In broad brush, '[t]he mission of Research & Development is to address the research needs of NUS academic staff to reflect an increase in the number of research activities with quality to be conducted on an annual basis.'¹⁰

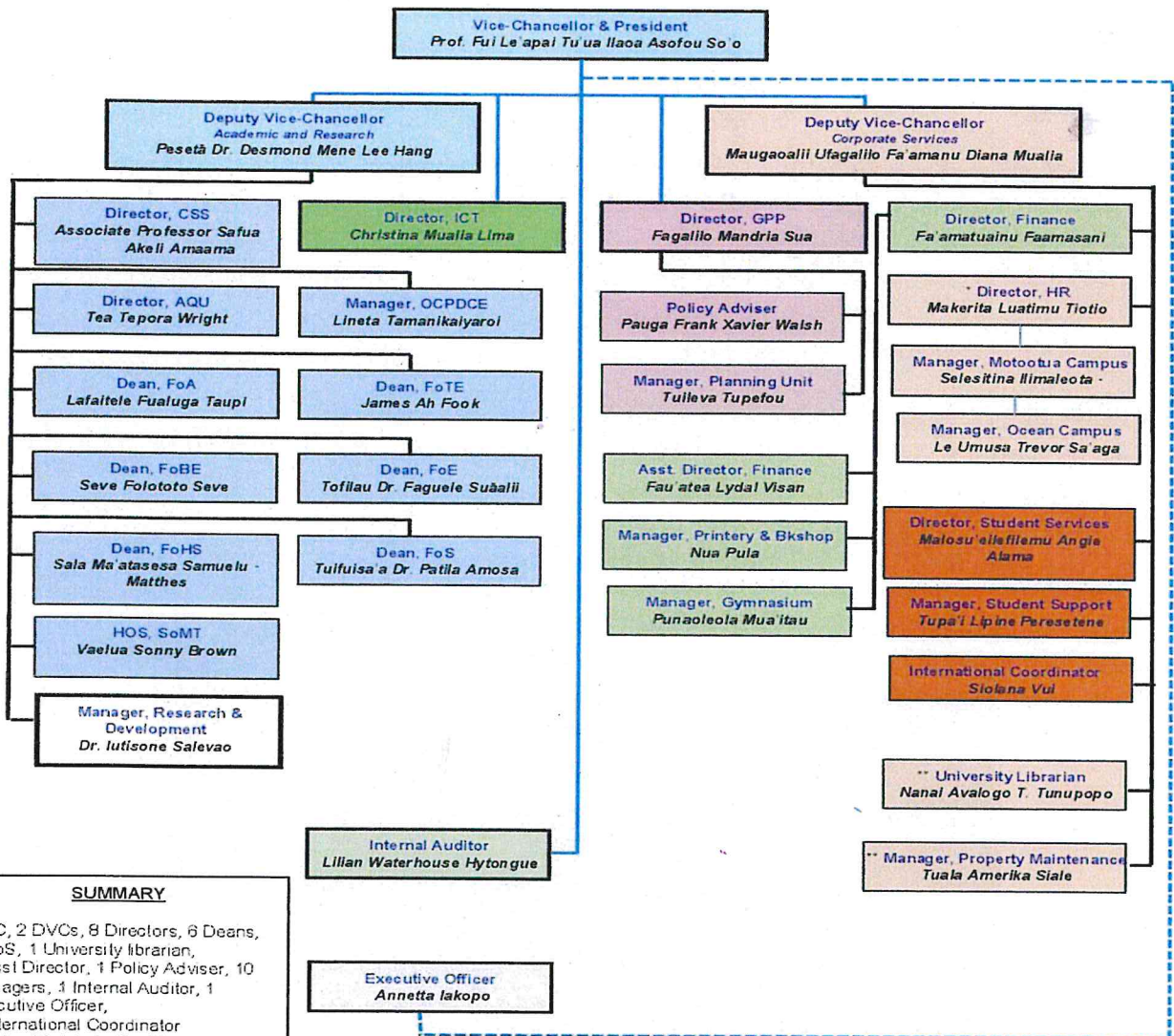
⁹ UREC *Policy Manual*, Section 1.1.

¹⁰ EC12/05/07 – *Two Phase Research Plan*, 60.

7. RESEARCH AND THE MANAGEMENT STRUCTURE OF THE NUS

Updated
 MARCH 9, 2016
 JUNE 27, 2016
 JUNE 07, 2017
 JULY 24, 2017
 AUGUST 02, 2017
 APRIL 05th, 2018
 JULY 16th, 2018
 AUGUST 30th, 2018
 SEPTEMBER 2018

The National University of Samoa
 ORGANISATIONAL CHART 2018



SUMMARY
 1 VC, 2 DVCs, 8 Directors, 6 Deans,
 1 HoS, 1 University librarian,
 1 Assl Director, 1 Policy Adviser, 10
 Managers, 1 Internal Auditor, 1
 Executive Officer,
 1 International Coordinator
Total = 34 Admin Positions
 depicted on this Organisational Chart

NOTE:
 Each Faculty, Centre or Section is
 expected to draw up their own
 Organisational Chart

KEY
 * These are new positions now in place and fully functional as a result of the restructure
 ** These refer to re-graded existing positions as a result of the restructure

1 Under the office of the Internal Auditor there is an additional post, the Assistant Internal Auditor who is also the Legal Officer.

8. NUS RESEARCH CAPACITY

A SWOT analysis of NUS's research capacity was commissioned by the University in 2017. The analysis was designed to highlight existing NUS research strengths, find out what's needed to be improved or changed, ascertain the opportunities for development, and identify threats, if any. Undertaken by an external consultant, the analysis included questionnaires, surveys, workshops, and a final report submitted to NUS's governing bodies.

Recommendations from that analysis, based on the research needs of NUS researchers and staff, have been considered by UREC: research plans by all sections of the NUS; the establishment of an overarching NUS research plan, distilled from sectional needs and interests; research support and training; monitoring of research projects; annual review of research projects and performance; attracting qualified, experienced researchers; having an appropriate funding level for research development and projects; and the establishment of a research unit for research development.

The analysis, with a view towards strengthening and integrating the NUS research function, proposes the following priorities:

1. securing more collaboration, both internally and externally;
2. developing research infrastructure, in particular, the information technology phase;
3. strengthening processes and procedures; and
4. the professional development of researchers and other academic staff.



Professor Fui Asofou So'o (middle) flanked by the newly appointed professorial staff: L-R: Assoc. Prof. Togialelei Safua Akeli-Ama'ama, Assoc. Prof. Taema Imo-Seuoti, Professor Muagututi'a Ioana Chan Mow, and Assoc. Prof. Tuiloma Susana Taua'a

9. STRATEGIC RESEARCH THEMES, PRIORITIES, GOALS & STRATEGIES

Substantiating research themes, achieving research priorities, and embedding a culture of research engagement, relevance, innovation, and impact – this is now the paramount challenge.

9.1 Economic Development and TVET

The Faculty of Applied Science presently offers courses in construction, electro-engineering, and mechanical engineering. The broad scope of TVET education encompasses construction and joinery, fitting and machining, automotive engineering, panel-beating and spray painting, plumbing, radio and electronics, refrigeration and air conditioning, and welding and metal fabrication. Horticulture courses cover all facets of crop production and protection.



The Faculty vision is to improve the 'quality of programmes relevant to social and economic developments.'¹¹ Its mission is to 'produce best quality graduates and to offer a variety of post basic trainings that support the national human resource developments needs of industry.' There are well-defined strategies for realizing that vision and mission:

- i. Strong Leadership to oversee program developments.
- ii. Effective and efficient management of all resources in the faculty.
- iii. Staff portfolio development.
- iv. Develop and conduct research.
- v. Foster strong partnerships and community engagement.
- vi. Strengthen partnership with funding agencies to find support for funded projects.

To ensure engagement, relevance, innovation and impact, partnerships and collaborations for non-financial and financial support are needed. Collaboration with SROS, Samoa's Chamber of Commerce, private and public sector industries, external agencies and stakeholders are critical. The rationale is partnering for economic

¹¹ The Faculty of Applied Science link on www.nus.edu.ws.

development. For TVET research, there is always the need for periodic scoping studies of the market to ground needs analyses and policy planning:

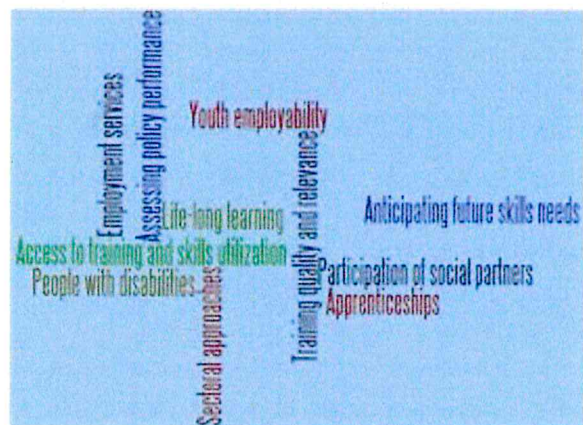
9.2 Research and Knowledge Management¹²

To date, TVET development in Samoa has been hampered by a lack of relevant data and information to inform planning, monitoring and innovation in the TVET sector. Information about labour market trends, costs, availability and impact of existing delivery systems on the workforce and productivity, perceptions and satisfaction levels of stakeholders is not readily available. Through the TVET Strategy for Samoa 2018-2022, research capacities will be built and in close coordination with other research initiatives driven out of different line Ministries.

Ideally as the TVET Unit grows it will also fulfil a mandate around research so as to inform planning. Samoa needs though this Strategy to grow its domestic expertise in this area.

A preliminary mandate for research and knowledge management priorities should include:

- i. Identifying, compiling and managing available information on TVET;
- ii. Use the information produced by other stakeholders especially in terms of Tracer studies;
- iii. Making information available to interested stakeholders through publishing research findings;
- iv. Ensuring that information is appropriately taken into consideration in all planning and monitoring processes;
- v. Identifying research needs;
- vi. Labour market monitoring for TVET; and
- vii. Establishing a TVET Management Information System.



Research impact assessment will be based on the measures set out below, especially employment and the creation of real jobs and income, and also taking into account Government's *Strategy for the Development of Samoa 2016/17-2019/20*, Priority Area 1: Economic, including macroeconomic development and resilience; improving productivity in primary, secondary and tertiary industries for domestic use and export (relevant to the foreign exchange reserve); rapid development of the tourism industry

¹² *Technical and Vocational Education (TVET) Strategy for Samoa 2018-2022*, 21.

as a major revenue-generating stream; enhancing public/private sector partnerships (with private business as the engine of economic growth).

Our Faculty of Business & Entrepreneurship as well as other NUS faculties, schools and centres have a lot to offer to our research and education for economic development.

9.3 Environment Protection and Sustainability, IT and Development

The NUS is making great forward strides in the area of Science, broadly construed to include life, physical and environmental sciences. The Faculty of Science is responsible for science research and education, including computing, mathematics and statistics, and environmental management.



The Faculty's vision, and its related mission, is to provide research and education 'suitable for personal and professional development.'¹³ Apart from basic research in such areas as biology, chemistry, statistics, mathematics, human & marine biology as well as technology and physics, the Faculty of Science will continue to pursue research in environmental science which is itself quite broad and far-reaching.

In addition to strictly scientific research into novel and effective ways of protecting the environment and human lives, a multidisciplinary approach involving the social sciences, humanities, physical and biological sciences, engineering, and health and human services is also necessary to produce a more concerted response to the adverse effects of climate change.

Within the IT domain, research on software design, apps development, data mining, data management and data transfer, modeling and computer simulation, and even telemedicine technology is worth exploring.

¹³ See the Faculty of Science link on www.edu.nus.ws

Research impact assessment will be based on the measures set out below, and taking into account the Government's *Strategy for the Development of Samoa 2016/17-2019/20*: Priority Area 1 on economic development; Priority Area 2 on social development, including the provision of quality education and training; Priority Area 3 on infrastructural development, including the provision of an improved countrywide ICT connectivity network at an affordable cost; and Priority Area 4 on the environment, including the improvement of environmental resilience, and climate and disaster resilience.

9.4 Health and Well-Being

The health and well-being of all Samoans is a paramount aim. Addressing the need for quality primary health care, the NUS continues to improve its School of Nursing to produce better nurses and promote healthcare research and education. The joint venture, entitled 'Growing Our Own: Postgraduate Nursing and Midwifery Programme,' between the NUS and the University of Victoria in Wellington that was formally launched in May 2018 is another milestone in our research and education progress.



NUS Nursing & Midwifery students at the launch of the "Growing Our Own: Postgraduate Nursing and Midwifery Programme". Phase One will see the selection of applicants for the VUW PhD or Master of Nursing & Midwifery programmes

The National University of Samoa and Victoria University of Wellington are working in partnership to offer a postgraduate research and education program delivered from the School of Nursing Apia Campus of NUS. The primary focus of the funding is to develop the capability of the Faculty of Health Science staff at NUS to offer postgraduate pathways for nurses, midwives and potentially other health professionals with the intent of contributing to the health system of Samoa through research and

health practice development. This is a programme to be offered over five years to initially support PhD and Masters programs, and other postgraduate qualifications for registered nurses and midwives in due course.

Phase One is about establishing the processes to ensure that students are well supported to be successful in their application for enrolment in a formal research programme of study at Victoria University of Wellington (this is Phase Three). Phase Two will be English Language training support and completion of the postgraduate research course (delivered in Samoa) as required.

With our School of Medicine, apart from addressing the need for more qualified medical doctors for Samoa, it will most certainly get into biomedical research at some stage, combining basic and applied research to generate new ideas in the field of medicine and contribute to the cure of diseases. With the development of research and staff capabilities, we will eventually find a place in the fields of neuroscience and cancer treatment.



A photo of NUS medical students with Dr Dean Stanley, former Head of School (Far Left) with some visitors outside the NUS School of Medicine at its Moto'otua Campus.

Research impact assessment will be based on the measures set out below, and taking into account Government's *Strategy for the Development of Samoa 2016/17-2019/20*, Priority Area 2 on promoting the health and well-being of all Samoans, and improving quality education and training.

10. RESEARCH QUALITY & IMPACT

Impact presupposes quality research, and quality entails measurable impact. The ultimate outcome of this plan is the impact that our research will have on the social, economic and environmental well-being of people. As well, our research should impact on the quality of our academic programs as this will enhance our capacity to impact on key priority areas.

As we progress its implementation, we need to continue working on our research publications and develop or adopt a tool to measure and evaluate its impact. We are mindful of the different types of impact and their determinants, the requisite distinction between impact on policy and impact on practice, and mindful also of multiple, overlapping and interwoven impacts that could occur, including some very subtle ones. As a consequence, we may have to adjust our impact evaluation and measures, and refine our methodologies accordingly. The objective is to enhance impacts.

In this plan, the term 'impact' is understood as a 'change in an outcome that is caused by a particular programme.'¹⁴ This seemingly simplistic definition does not however neglect the complex interplay of many factors, processes and interactions leading up to a particular causal change, understood as impact. Nor does it ignore the possibility of change happening before an intended income becomes a reality.

While not ignoring those conjectural issues, the definition we have adopted is used as a working hypothesis to gauge impact and focus on 'what works', what makes a difference (without abandoning our theoretical bases, parameters and frames).

Relative to our research priorities, we are adopting a practical, problem-solving approach to strategic issues and challenges, exploring strategic initiatives, performing cutting-edge research over a range of disciplinary and cross-disciplinary areas, and using innovative and research-led training to produce objective and tangible results. Given the predominantly practical demands of our priorities, the following are significant and could be applied across the board:

- i. Increase Government funding (say 50% spread over the five years of the plan, from 2019 to 2023).
- ii. Employability, employment and career paths (a 2018 Tracer study/survey of NUS graduates from TVET programmes and Bachelor of Commerce 2015, 2016 & 2017 currently conducted by our Academic Quality Unit (AQU) is an

¹⁴ Lucy Gilson (ed), *Health Policy and Systems Research: A Methodology Reader* (WHO 2012) 253.

- important quantitative measure of the impact of NUS research and teaching over the last three years).
- iii. Gender equity (for instance, more women in the TVET area, a 2% increase every year over the five-year life of the plan).
 - iv. Collaboration/partnerships (consolidating existing and securing new external collaborations to broaden our external networks is a quantitative measure of impact: University of Victoria, University of Otago, Massey University, SROS, SPREP, UNDP, and others).
 - v. NUS/Industry collaboration (consolidating existing and forging new ones to generate scale and focus on growth opportunities – e.g., the Faculty of Science & UNDP GEF Project on Climate Change; Faculty of Education & MESC on Teacher Trainee’s Practicum; FoTE & MCIL / MBIE (NZ) on the Pacific Trade Partnership for the Christchurch Rebuild Project; Faculty of Technical Education & MCIL on the National Apprenticeship Scheme).
 - vi. Capacity building (increase the number of researchers and practitioners, 5% increase every year over the five-year life of this plan).
 - vii. Research outputs (increase the number and novelty of innovative research findings over the five years of the plan, e.g., producing some anti-itch vaccine from polo leaves or cancer cure from Samoan traditional medicinal plant studies).
 - viii. Health and well-being (5% increase in the number of qualified nurses, midwives and medical doctors over five years).
 - ix. Attitudinal/cultural change (objective evidence of a change of attitude and perception in respect to TVET matters, health, and so forth).
 - x. Increase our research funds and to hold such funds on trust for research purposes, requiring a better aligning of resources, processes, outputs and outcomes.
 - xi. Citation count (citation analysis) as a primary metric for measuring research impact (while noting as well *Clarivate Analytics* ‘impact factor’, Jorge E. Hirsch’s *Hirsch index*, the ‘h-index’, ‘altmetrics’ or the article level metrics, and the *Becker Model* which either reinforce or question the tenability of the citation count metric).
 - xii. Establish a metric for measuring the impact and importance of research and publications conducted in the Samoan language.

- xiii. Establish a metric for measuring the impact of innovation on productivity, growth and employment.
- xiv. *UREC* project proposals to include a completed impact template.

11. FUNDING PLAN

Financial commitment is required for a number of reasons - support of researchers; the implementation of research projects; infrastructure, equipment, and other facilities; research skills development; postgraduate research; public engagement, community relations and outreach programs; and others.

Possible revenue sources/streams include:

- i. Government funding, being part of the NUS budget (the assumption is that such funding will be received annually throughout the plan's lifespan of five years; there is a provision for carrying costs).
- ii. External funding for research projects and sponsored programs (e.g., funding from the *Education Sector Research Strategy* for targeted research projects in the 6 Education Sector identified priority areas).
- iii. Funding from parties outside the NUS, through a strategic fundraising program directed at external agencies and philanthropists (hence *UREC's* function of soliciting 'funding for research from national and international sources').
- iv. Revenue generated through NUS research consultancies on a percentage share.
- v. Estates and gifts (bequests).
- vi. Commercialisation of (1) NUS intellectual property (copyright, trademarks, registered designs, patents, confidential information, and so forth) through Licensing Agreements, and (2) other NUS research and education services.
- vii. Strategic re-direction of an existing NUS service, e.g., printing/publisher, and increasing the volume and monetary value of publications annually.

Usual annual expenditure includes operational costs, capital expenditure (for infrastructure and equipment), administration and support, and other expenses including public engagement and public insurance expenses.

The financial projections for this plan are conservative and the assumptions are modest, taking into consideration as well contingency factors such as inflation, depreciation and insurance.

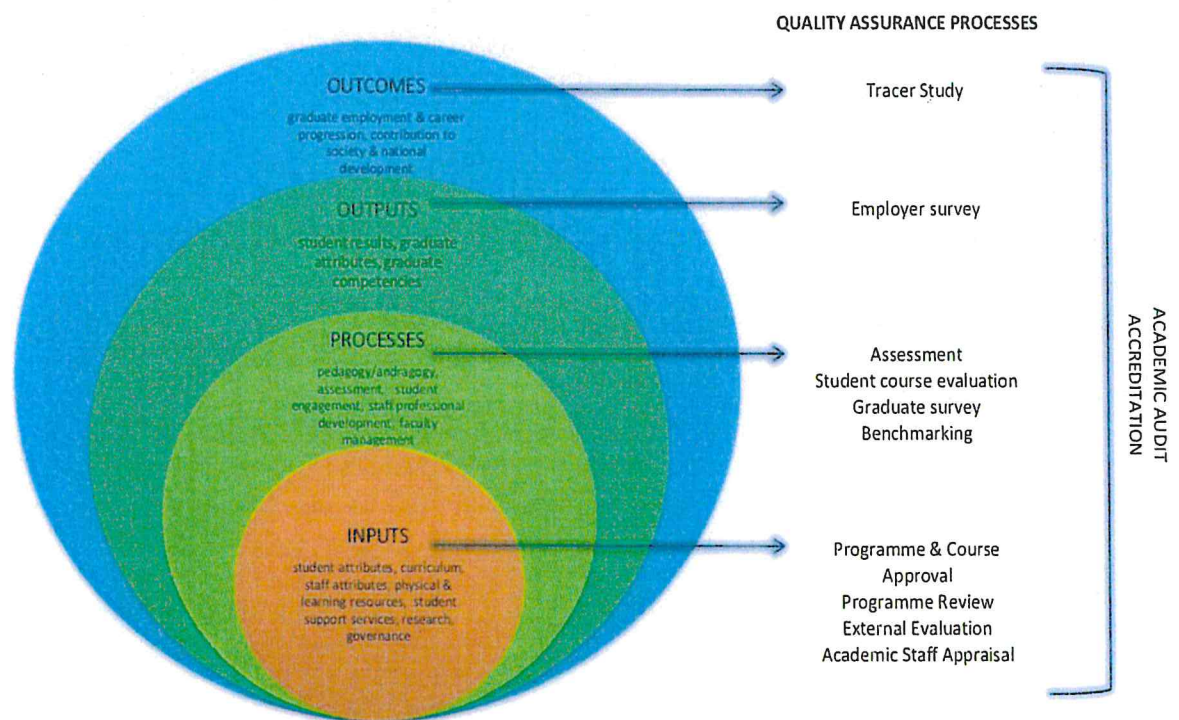
A Statement of Cash Flows for 5 years: Cash Inflows (from the above) - Cash Outflows (for expenses) = Net Cash Flows. Thus far we have:

- i. UREC allocation in the NUS Budget – We propose \$50,000 per annum
- ii. Education Sector Research Strategy Funds for Research Proposals – Currently at \$50,000 for the FY2018/19
- iii. Securing additional revenue sources

12. MONITORING & EVALUATION

A monitoring and evaluation (M&E) template will be developed, in consultation with faculties, schools and centres as well as our AQU in its role of ensuring academic quality (see Figure 2) in NUS education and teaching, using tracer studies, employer surveys, and assessments to ascertain the interface between the NUS and external industries. UREC also plays a crucial role in M&E, as it is required by Council to report on all research activities of the University once a year in its April meetings.

Figure 2. The Quality Assurance Work of the Academic Quality Unit at NUS
OVERVIEW OF THE NUS QUALITY ASSURANCE FRAMEWORK



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APPENDICES

Appendix 1: NUS 2-Phase Plan for Developing Staff Research & Publications

Two Phase Plan Table 2: A Two-Phase Approach to Publishing a Paper

PHASE 1: (minimum 3 years up to a maximum of 5 years) - Readiness – Nurturing, Finalising and Implementing a Research/Development or Innovative Project Proposal			
Time Period	Activities	Outcomes	Responsibility of
Phase 1.1 – Nurturing Year 1 – Sem 1 (or first 6 months)	<ol style="list-style-type: none"> Attend seminar series offered by Faculties and CSS Attend development workshops coordinated by CSS- R&D Manager Consultations with School/Faculty senior academics 	<ul style="list-style-type: none"> Increased understanding of a researchable problem; and/or experimental development of an applied, technical or creative design, innovation or construction solutions Draft proposal 	<ol style="list-style-type: none"> Convenors of Seminar series Deans-FOS & FOE, HOS/HODs CSS-Conference Manager CSS Manager-R&D for R&D workshops School/Faculty senior academics
Phase 1.2 – Finalise Research / Project Proposal Year 1 – Sem 2 (or second 6 months)	<ol style="list-style-type: none"> Attend seminar series offered by Faculties and CSS Attend development workshops coordinated by CSS- R&D Manager Consultations with School/Faculty senior academics 	<ul style="list-style-type: none"> Increased understanding of a researchable problem; and/or experimental development of an applied, technical or creative design, innovation or construction solutions Develop research/project proposal Finalise research/project proposal 	<ol style="list-style-type: none"> Convenors of Seminar series Deans-FOS & FOE, CSS-Conference Manager CSS Manager-R&D for development workshops Staff members in consultation with School/Faculty senior academics & CSS-R&D Manager
Phase 1.3 – Submission, Approval & Implementation of Research/Project Year 2: 12 months	<ul style="list-style-type: none"> Attend seminar series offered by Faculties and CSS Finalise/approve the research/project proposal at School/Faculty levels Submit to UREC for consideration & approval Implement, analyse data & complete Research Report 	<ul style="list-style-type: none"> Increased understanding of drafting and writing research/project proposal UREC approval for research/project proposal Implementation of research/project Completion & Submission of a full research/project report 	Researcher or Research/Project Team
Phase 1.4 – Development & Publication of	Develop and finalise a short research report (2000-3000 words)	Research report (2000-3000 words) is approved for publication as a 'non-refereed'	Researcher or Research/Project Team

short practical reports Year 3: 12 months	for review	article in a professional journal, JSS or PRISMCS.	
PHASE 2: (about 2 years) - Developing, Finalising & Publishing a refereed journal/conference article			
Time Period	Activities	Outcomes	Responsibility of:
Phase 2: Refereed Article Year 4: 12 months	Develop a 5000-6000 word article for publication as a 'refereed paper'	Submit the 5000-6000 word article for peer review by NUS senior academics	Researcher or Research Team
Year 5: 12 months	<ul style="list-style-type: none"> • Revise, finalise and prepare a 5000-6000 word article for peer review by international experts of the area. • Submit article for review by international experts 	An international peer refereed article is submitted	Researcher or Research Team