1. Healthcare and Well-being Innovations - Dr. Xavier Chee Wezen xchee@swinburne.edu.my
2. IoT, Analytics and Optimization – TBC
3. Rural and Urban Development – Dr. Daniel Looi Ting Wee dlooi@swinburne.edu.my
4. Smart Agriculture and Sustainable Environments – Dr. Daniel Tan Lee Tung ltldtan@swinburne.edu.my
5. Sustainable and Clean Energy – TBC
6. Corporate Social Responsibility and Sustainability- Dr. Yii Kwang Jing KYii@swinburne.edu.my
7. Human Resource Innovation- Dr. Voon Mung Ling mvoon@swinburne.edu.my
8. Tourism, Hospitality & Destination Marketing- Dr. Jee Teck Weng tjee@swinburne.edu.my
9. Women’s Empowerment- A/Prof. Ida Fatimawati Binti Adi Badiozaman ifaBadiozaman@swinburne.edu.my
10. Business Innovation- Dr. Fung Chorng Yuan cfung@swinburne.edu.my
11. Education Research:
   a. Scholarship of Teaching and Learning - Hugh John Leong Vik Kuan hjleong@swinburne.edu.my
   b. Education and Technology – Augustus Raymond Segar asegar@swinburne.edu.my
   c. Education Management and Leadership – Dr. Symeon Mandrinos SMandrinos@swinburne.edu.my
   d. STEM - Ir. Dr. Chong Kok Hing kchong@swinburne.edu.my
Healthcare and Wellbeing Innovations

Cluster Leader: Dr. Xavier Chee Wezen

Members: Prof. Patrick Then, Prof. Su Hieng Tiong, Assoc. Prof. Lau Bee Theng, Assoc. Prof. Hwang Siaw San, Dr. Valliappan Raman, Dr. Lisa Yong, Dr. Xavier Chee, Dr. Mark Tee, Fu Swee Tee
ABOUT OUR CLUSTER

This cluster combines the expertise of life scientists, chemist and computer scientists to improve health and wellbeing by finding ways to prevent, rapidly and correctly diagnose, treat and manage diseases.

16 Projects
RM2.5mil Value
10 Partners
8+ Researchers
RESEARCH FOCUS – FOUNDATIONAL SCIENCE

Drug discovery

Functional foods

Drug design

Combining science, data analytics and technology towards personalised health and wellbeing

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RESEARCH FOCUS – BIOINFORMATICS

Health informatics – consumer, public and clinical

Translational bioinformatics

Combining science, data analytics and technology towards personalised health and wellbeing
IOT, Analytics and Optimization

Cluster Leader: TBC

Members: Dr Soon Kok Heng, Dr Elammaran Jayamani, Dr Chong Kok Hing, Prof Patrick HangHui Then, Dr Valliappan Raman, A/Prof Sim Kwan Yong, Sim Kwan Hua, Dr Saravanan Kannan Thangavelu, Dr Lee Ming Ha, Dr Almon Chai Wei Yen, Dr Hadi Nabipour-Afrouzi, Dr Jubaer Ahmed
ABOUT OUR CLUSTER

This cluster seeks the advancement in Internet-of-Things, Optimization and Analytics and related areas. The cluster includes diverse expertise in Computer Science, Mathematics, Mechatronics Engineering, Electrical Engineering and other related areas.

8 Projects
RM1.5mil Projected Value
10+ Partners
13 Researchers
RESEARCH FOCUS

Internet-of-Things

Industry 4.0, Smart Manufacturing and Automation

Analytics & Statistics

Blockchain & Smart Contracts

Optimization
Material & stress analysis modelling
Rural and Urban Development

Cluster Leader: Dr. Daniel Looi Ting Wee

Members (SUTS): Prof. John Wilson, Ir. Prof. Lau Hieng Ho, Ir. Dr. Adeline Ng Ling Ying, Dr. Chin Mei Yun, Ir. Dr. Liew San Chuin (Angelia), Dr. Matthew Wong Ngie Hing, Dr. Choo Chung Siung, Dr. Chai Chang Saar, Dr. Jibril Adewale Bamgbade, Ir. Dr. Kuok King Kuok (Kelvin), Dr. Elizabeth Chong Eu Mee, Dr. Soon Kok Heng, Dr. Elammaran Jayamani, Dr. Saravana Kannan Thangavelu, Ir. Dr. Chong Kok Hing, Dr. Yeu Yee Lee (Elaine), Dr. Hudijaya Siswoyo Jo, Dr. Riady Siswoyo Jo, Prof. Patrick Then Hang Hui, Dr. Valliappan Raman

Members (SUT): Yat Choy Wong, Hing-Ho Tsang, James Wang, Arul Arulrajah, Jay Sanjayan, James Wang, Siva Chandrasekaran, Patrick Zou, M Akbar Rhamdhani, Jiong Jin
ABOUT OUR CLUSTER

This multi-disciplinary cluster comprises of experts pursuing advancements in materials engineering, structural engineering, seismic engineering, environmental engineering, geotechnical engineering, climate change impacts, and construction management. This cluster also advocates the application of smart and digital technologies, and big data analytics in the built environment, whether during construction or during service life. The cluster is currently involved / exploring projects related to Digital Construction, Modular Construction, Sustainable Materials, Waste Management and Engineering, and Climate Change.

- 10 Projects
- RM1.0mil Projected Value
- 10+ Partners
- 17 Researchers
RESEARCH FOCUS

Sustainable Engineering Materials

Digital Construction

Modular Construction

Waste Management and Engineering

Climate Change
Smart Agriculture & Sustainable Environment

Cluster Leader: Dr Daniel Tan Lee Tung

Members: Patrick Then, Moritz Mueller, Hwang Siaw San, Basil Wong, Jaka Sunarso, Chua Hong Siang, Elammaran Jayamani, Riady Siswoyo Jo, Hudyjaya Siswoyo Jo, Valliappan Raman, Kuok King Kuok, MD. Bazlul Mobin Siddique, Lai Chean Hung, Victor Bong, Irine Runnie Henry Ginjom, Charlie Sia, Soon Kok Heng, Ngu Lock Hei, How Bing Shen, Chong Kok Hing, Ting Lik Fong, Xavier Chee, Yeu Yee Lee (Elaine)
ABOUT OUR CLUSTER

This is a cluster with members from multiple disciplines. The active members contributed research in environmental science, wastewater management, waste-to-material, agriculture and forestry. The research in environmental science encompasses among others coastal water quality, remote sensing, dissolved organic carbon and humic acids. While agricultural topics ranges from biofertilisers, natural farming, hydroponics and plant tissue culture.

10+ Projects
10+ Partners
22+ Researchers

RM8mil+ Value
Smart agriculture and sustainable environment are high-prioritized areas of research in Sarawak. The scope is extremely wide:

- Agriculture & aquaculture
- Forestry
- Marine, rivers and lakes
- Clean environment
- Animal farming
- Diseases
- Technologies
**RESEARCH FOCUS – THE STRATEGIES**

**Industry Engaged Masters by Research**

- Industrial Immersion Program+ (*Concept*)
- Public Private Research Network (PPRN)
- TKK Agriculture Development
- Sarawak Oil Palm Berhad (SOP)

**No barriers:**

- Local partners
- International collaborations
- Students as the clients

**De-factoring the cost:**

- From almost no-cost to high cost
- FYP to PhD

**Strategies to build on Industrial Immersion Program**

(undergraduate level)

- Identify potential industries and potential students.
- “Springboard” the students into MSc or PhD program.

Link up with:

- Industry Engaged Masters by Research
- PPRN
- Companies e.g. TKK, SOP
Sustainable and Clean Energy

Cluster Leader: TBC

Members: Jaka Sunarso, Basil T. Wong, Bing Shen How, Mahmoud Ahmed, Siti Salwa Hashim, Hadi Nabipour Afrouzi, Muhammad Rafiq Mirza bin Julaihi
ABOUT OUR CLUSTER

The Sustainable and Clean Energy cluster is dedicated to studying opportunities and challenges surrounding Clean and Renewable Energy. Our research focus mainly on the entire energy pathway from (i) Understanding of alternative cleaner energy resources, (ii) Development of more sustainable energy conversion and storage technologies, through to (iii) The planning and management of future energy and resources. Our multidisciplinary collaboration approach means we look at the problem holistically from fundamental aspect, technical, and application.

10 Projects
RM$1.3\text{mil}^*$ Value
12 Partners
9 Researchers

* partly funded by external partners
RESEARCH FOCUS

Energy storage - Graphene based supercapacitor

Manipulating Energy at Nanoscale – Energy Transfer

Energy Conversion - Black Silicon Assisted PV and Near-Field TPV

Energy Management for Sustainability – Boosting HVAC Efficiency

Sizing, Optimization and Economic Evaluation of Hybrid Renewable System

Life Cycle Cost Values
RESEARCH FOCUS

Ceramic membranes for clean coal combustion and H₂ production

Energy planning using pinch analysis

Core-shell nanoparticles based solar cell

Oil palm biomass conversion to fuel and energy

Catalytic Co-pyrolysis

Thermochemical Processes: Dry torrefaction Wet torrefaction Pyrolysis Gasification
Corporate Social Responsibility and Sustainability

Cluster Leader: Dr Yii Kwang Jing

Members: Marc Lim, Fung Chorng Yuan, Tan Vie Ming, Ling Chui Ching, Symeon Mandrinos

Melbourne Collaborators: Dina Wahyuni, Chandana Hewege, Christopher Selvarajah, Chamila Perera
ABOUT OUR CLUSTER

- Preservation and development of the environment.
- Compensation for the social, environmental, and economic resources it consumes.
- Operational efficiency, effectiveness, and profitability of these activities.
- Positioned fields: i) Social development, ii) Strategic management,
  iii) Accounting policy, iv) Business ethics, and v) Sustainability.

2 Projects
RM38k Value
2 Partners
10+ Researchers
**RESEARCH FOCUS**

**SOCIAL DEVELOPMENT**
- Sustainable social and urban development
  - Sustainable social-ecological system
- Social entrepreneurship

**STRATEGIC MANAGEMENT**
- Organizational environment
  - Competitiveness and globalization
    - A study on Medan Pelita Carpark – NBL Architects Sdn Bhd, Sarawak – 2020
- Strategic management and economics

**ACCOUNTING POLICY**
- Efficient accounting policy
  - Culture and accounting change
- CSR and sustainability initiatives by listed companies in Malaysia
- Signalling and agency theory
RESEARCH FOCUS

BUSINESS ETHICS
- Ethics value into management decision making
- Corporate governance
- Stakeholder and issue management approach
- Business ethics and stakeholder analysis

SUSTAINABILITY
- Social cost and sustainability
- Sustainable consumption and production
- Energy conservation

- Social characteristics and electricity accessibility among households in urban and rural areas – SSRG, 2020.
- Zero-incentive and incentive-based demand response programs for Sarawak Energy
Human Resource Innovation

Cluster Leader: Dr Voon Mung Ling

Members: Dr Bibiana Lim, Dr Ki Yen Ping, Dr George Ngui, Dr Syemeon Mandrinos, Dr Sitansu Panda, Dr Ong Liap Teck, Dr MD Asadul Islam, Dr. Fung Chorng Yuan, Dr. Komathi Wasudawan, Dr. Lim Ai Ling (Edith), Mr. Jacob Ting King Soon
The Human Resource Innovation Cluster acts as a platform for research and engagement with the organisations and academia. Our aim is to produce insightful and practical research to improve the human resource management process into innovative context. Areas of research include leadership, organisational behaviour, talent management, performance management and innovative human resource practices at the workplace. Effective human resource management can contribute significantly to a successful, sustainable organisation where strategic objectives are realised while providing a positive workplace experience.
RESEARCH FOCUS

Leadership and management

High-performance work systems, knowledge management

Performance management

Work-life balance

List of Projects:

- Paternalistic versus Transformational Leadership: Assessing their Impact on Employee Turnover Intention and the Mediating Role of Job Satisfaction, Swinburne University of Technology, 2019 (Completed)
- Digital Economy and Workforce in Sarawak: Knowledge, Attitude, and Perception of Advanced Smart Automation among Young Professionals, Swinburne University of Technology, 2019 (On-going)
- Training Needs Survey, Sarawak Chamber of Commerce & Industry, 2018 (Completed)
- Information-Seeking Behaviour among the State Civil Servants in the Urban Areas of Sarawak, Pustaka Negeri Sarawak, 2017 (Completed)
LIST OF ACTIVITIES

Publication (Journal Articles, Conference Papers, Book Chapters and Case Studies)

Research Grant Applications

HRD Recruitment

Create Sustainable Industry Engagement
Tourism, Hospitality and Destination Marketing

Cluster Leader: Dr Jeffrey Jee Teck Weng

Members (SUTS): Lim Weng Marc, Ida Fatimawati Adi Badrozaman, Edith Lim Ai Ling, Lynn Wee Ling Min, Rodney Lim Thiam Hock, Voon Mung Ling, Bibiana Lim Chiu Yiong, Komathi Wasudawan, Ee Yaw Seng, Yii Kwang Jing, Stanley Nwobodo

Members (SUT): Ryan Jopp, Lester Johnson, Agung Yoga Sembada, Hassan Kalantari Daronkola, Hassan Golipour Fereidouni, Tuan Luu, Raza Ilahi, Madhuri Fernando
ABOUT OUR CLUSTER

The cluster explores and implements innovative solutions in assisting the tourism, hospitality and destination marketing community well-being. Our expertise include branding and communication of tourism attractions, tourist decision-making and behaviour, sentiment analysis, special interest, and niche tourism development.

Our cluster flagship projects includes (not limited to) Tourism Satellite Account, Cultural Development, and MICE (Meeting, Incentive, Conference, Exhibition) Development.

9 Projects
RM1.0mil\textsuperscript{e} Value
10+ Partners
20+ Researchers

\textsuperscript{e} = Estimate
RESEARCH FOCUS

Branding and communication of tourism attractions

Sentiment analysis, special interest and niche tourism development

Tourist decision-making and behaviour

The Tourism, Hospitality and Destination Management (THDM) Survey, Swinburne University of Technology, 2019 (Ongoing)

Sarawak Tourism Satellite Account – Departing Visitor Survey, Ministry of Tourism, Arts, Culture, Youth & Sport Sarawak, 2018

Sarawak Tourism Satellite Account – Outbound Tourism Survey, Ministry of Tourism, Arts, Culture, Youth & Sport Sarawak, 2018

Visitor Exit Survey, Ministry of Tourism, Arts, Culture, Youth & Sport Sarawak, 2018 - CHINA

Scoping study on creative and cultural tourism development in Sarawak, Ministry of Tourism, Arts, Culture, Youth & Sport Sarawak, 2018

Sarawak International Dragon Boat Regatta (SIDBR) and Sarawak Regatta (SR) Industry Player Survey, Ministry of Tourism, Arts, Culture, Youth & Sport Sarawak, 2017

Community Based Tourism Re-Visit Intention, Swinburne University of Technology, 2017

Determinants of Corporate Events Site Selection: An Exploratory Study of the MICE Industry in Sarawak, Sarawak Convention Bureau, 2014
Women Empowerment

Cluster Leader: Dr Ida Fatimawati bt Adi Badiozaman

Members: Dr. Voon Mung Ling, Prof Robyn Eversole, A/Prof. Naomi Birthistle, Dr. Zara Lasater, Dr. Vinita Goodinho
ABOUT OUR CLUSTER

The center examines women representations, gender equality and the empowerment of women in achieving inclusive and sustainable growth. Although remarkable progress has been made in closing the gender gap and reducing inequalities in the economic, social, and political arenas, gender disparities are still visibly persistent, and women remain at a disadvantage in several areas.

First place for the Swinburne Research Impact Award (2019), High Commendation for the Swinburne Vice-Chancellor Research Excellence Award (2018), Highly Commended in the International Emerald Interdisciplinary Impact Grant (2019)

5+ Projects
5+ Partners
5+ Researchers

RM500k+ Value
RESEARCH FOCUS

Equal participation and equitable representation in policy and economic decision-making

Financial empowerment and entrepreneurship development

Eliminating barriers to education, health and employment opportunities

Building Connections for Enterprising Women, Australia-ASEAN Council and Good Shepherd Microfinance, 2018
An investigation into barriers for single mothers with tertiary education re-entry into workforce in urban Sarawak. Jabatan Wanita and Keluarga Sarawak, 2016
Barriers to and facilitators of female academic promotions in Australian and Malaysian higher education institutions: An exploratory comparative case study. Melbourne-Sarawak Collaborative Research Scheme, 2015
Business Innovation

Cluster Leader: Dr. Fung Chorng Yuan
Members: Rodney Lim, Bertha Chin, Augustus Raymond Segar, Komathi Wasudawan, Gabriel Wee Wei En
ABOUT OUR CLUSTER

This Business Innovation cluster is established to encourage multidisciplinary research that converges business with innovative applications of business models, processes, strategies and technology.

Our cluster consists of three staff members with varied expertise and research interests:

- Entrepreneurship, Social commerce, Serious leisure
- Creative & media Industries, Social media, Digital culture
- Human-technology interactions, Preserving culture & heritage, Augmented, Virtual & Mixed Reality

2+ Projects
RM10K+ Value
2+ Partners
3+ Researchers
RESEARCH FOCUS

Innovative pathways to entrepreneurship

Eliminating barriers and maximizing inclusion through digital technologies

Community readiness, skill development and social impact

e-Commerce readiness of small and medium size enterprises in Sarawak, 2021.


Impact study on community readiness towards "Digital Sarawak": Digital skills, innovation and talent development, 2019.
RESEARCH FOCUS

Business modelling for innovation

Adoption and impact of workplace digitalization


Sharing economy approaches to transport and tourism in rural Sarawak, Melbourne-Sarawak Collaborative Research Scheme, 2016.
Education Research (Scholarship of Teaching and Learning)

Cluster Leader: Hugh Leong

Members: Assoc Prof. Ida Badiozaman, Choo Chian Hou, Nur Aziela Aidit
We believe in the continuous improvement of teaching and learning standards through rigorous research. As we begin to tread the new normal, the enhancement and augmentation of learning is important for both learners and educators. Our cluster welcomes the examination of new approaches to classroom practice, innovations to student engagement, and the development of new practical applications of educational theories and practices.
RESEARCH FOCUS

Student Engagement and Motivation

Reader Development Programs

Continuous Professional Development Practices

English Language Teaching and Teacher Training
Education Research (Education & Technology)

Cluster Leader: Augustus Raymond Segar

Members: Choo Ai Ling, Hugh John Leong Yik Kuan, John Hii Ing Kieng, Samuel Liau Yee Hong, Wilson Suai Moses
ABOUT OUR CLUSTER

The Technology and Education cluster is a multidisciplinary research team consisting of 6 active members. Throughout the years, the cluster has been working with prominent partners including Microsoft Malaysia, Malaysia Digital Economy Corporation (MDEC), Sarawak Multimedia Authority (SMA), Tabung Ekonomi Gagasan Anak Sarawak (TEGAS), Sarawak Media Group (SMG) and Sarawak Convention Bureau (SCB). In 2020, the cluster has secured a state government grant totaling up to RM105,000. Two other projects are currently still under review.

5+ Projects

RM235k Projected Value

5+ Partners

5+ Researchers
RESEARCH FOCUS

Technology & Education

New technologies including but not limited to Virtual Reality, Augmented Reality & Mixed Reality

Innovative strategies and approaches in the educational system to assist students in attaining 21st century skills

RESEARCH FOCUS

Culture & Heritage

Preservation, digitization, documentation, gamification and scholarship of culture and heritage.

“... good design was a key element in how to make use of digital technology to preserve and enhance local culture, heritage and traditions in the context of a creative economy...”
(https://tinyurl.com/yd6ufb6f)

(1) Good Design Week, 2021.
(3) Good Design Week, 2019.
Education Research
(Education, Management and Leadership)

Cluster Leader: Dr Symeon Mandrinos

Members: Weng Marc Lim, MiinHuui Lee, Hugh John YiikKuan, LiapTeck Ong, Wendy YingYing, SuehlNg Sue
ABOUT OUR CLUSTER

A group of social scientists with the main goal to stimulate (2020) research culture within which Education and Management disciplines coexist (although our cluster supports independent research, we equally believe external collaboration is an essential feature, research to flourish)

8 Projects
RM100k Value
4+ Partners
7+ Researchers
RESEARCH FOCUS

Research in Higher Education

Management Research

Management Research sheds light on Higher Education questions

Examples

Articles (published in 2020)

• Incidental findings on multi-model comparison, hypothesis testing error, and its solutions: The case of information, knowledge and career pursuit

• Career Preferences of Graduating Medical Students in Universiti Malaysia Sabah

• A call for knowledge and awareness with reference to organ donation among nursing students

• Second-Career Academics and the Quality of Business Education

• Overcoming the shortages of Second-Career Academics

Grant (in review)

• Fundamental study on career ambition among agribusiness students for focal security in Malaysia
Education Research (STEM)

Cluster Leader: Ir. Dr. Chong Kok Hing

Members: Dr. Yeu Yee Lee (Elaine), Dr. Siti Salwa Hashim, Ir. Ts. Dr. Then Yi Lung, Tiong Siing Kieh, Dr. Muhammad Rafiq Mirza bin Julaihi, Dr. Charlie Sia Chin Voon, Dr. Soon Kok Heng, Ir. Dr. Chong Kok Hing, Ting Sie King, Dr. Fung Chorng Yuan, Dr. Joel Than Chia Ming, Dr. Xavier Chee Wezen, Ting Lik Fong, Associate Prof. Dr. Hwang Siaw San
We envision a future where all students will have the curiosity and resilience for life-long learning. We believe that students are curious by nature and can readily learn if the right educational pedagogies are used. These pedagogies must be aligned with how our students learn outside the classroom – gamification, observation and sharing. We also believe in the ancient wisdom that deep learning occurs through dialogue and discovery. In this endeavor, our school teachers have transform from a content deliver to a coach.
RESEARCH FOCUS

Curating Quality Education Resources to Support STEM Learning

Using AI and Data Analytics to transform Education Landscape

1. COMPASS Grant from American Society of Cell Biology to develop Science Kits for students

2. Development of an online Chemistry learning platform for Form 4 and Form 5 students

Produce Quality Materials to Excite STEM Learning