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IMERI
INDONESIAN MEDICAL EDUCATION AND RESEARCH INSTITUTE


IMERI

Indonesian Medical Education and Research Institute
Faculty of Medicine, Universitas Indonesia

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The Indonesian Medical Education and Research Institute (IMERI) started to operate in July 2017, however the idea originated much earlier. IMERI was established to address emerging health issues in the global community and in response to government calls for medical transdisciplinary research to address the emerging and increasing health problems and disease complexity in the community.

Prof. Dr. dr. Ari Fahrial Syam, Sp.PD - KGEH, MMB, FINASIM, FACP, FACG

Dean of Faculty Medicine, Universitas Indonesia



IMERI is a place for scientist in Indonesia to acheive experience, excellence and great innovations in research in medical education and medical science. The Institute calls for collaboration and support from all stakeholders and is expected to help the country to increase the quality of its health services.

Prof. dr. Badriul Hegar, Ph.D, Sp.A(K)

Director of Indonesian Medical Education and Research Institute -
IMERI

IMERI is in line with the national agenda in improving the quality of life and Increasing productivity and competitiveness. These goals directly refer to the health and well-being of the Indonesian population and requires Indonesia to address diseases and its capacity to change and innovate. IMERI addressing important issues in medicine, health care, and medical education.

Organized medical transdisciplinary collaboration research with problem-based strategies in education and science are indispensable in the current era to improve the health status of the community, increase public responsiveness, and protection of social and financial risks in health to achieve an independent society.

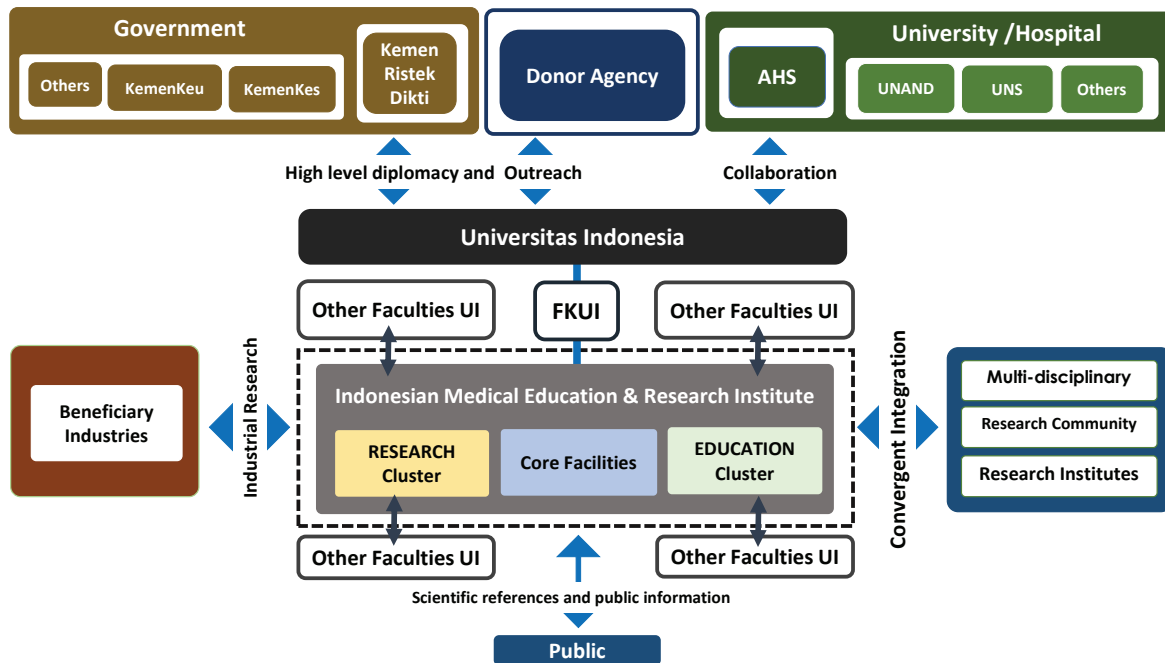




BUILDING

IMERI is located strategically in the center of Jakarta adjacent to the FKUI cultural heritage building and to the RSCM with a concept of adding value to the city of Jakarta. The IMERI building has two towers consisting of 12 floors each with 27,965.23 m².

The Architecture of the IMERI building reflects a modern work with a sustainability concept, but it interact with the cultural heritage buildings. IMERI's architectural reflect buildings that are (1) energy efficient, (2) optimal green building, (3) attention to the safety and comfort of pedestrians and the disabled, and (4) in harmony with the historical context of FKUI campus. The IMERI building also prioritizes safety against earthquakes and fires, as well as the conservation of natural light and air.



VISION

Indonesian Medical Education and Research Institute was established to 'create better healthcare and quality of life through disruptive innovation in medical education and research'

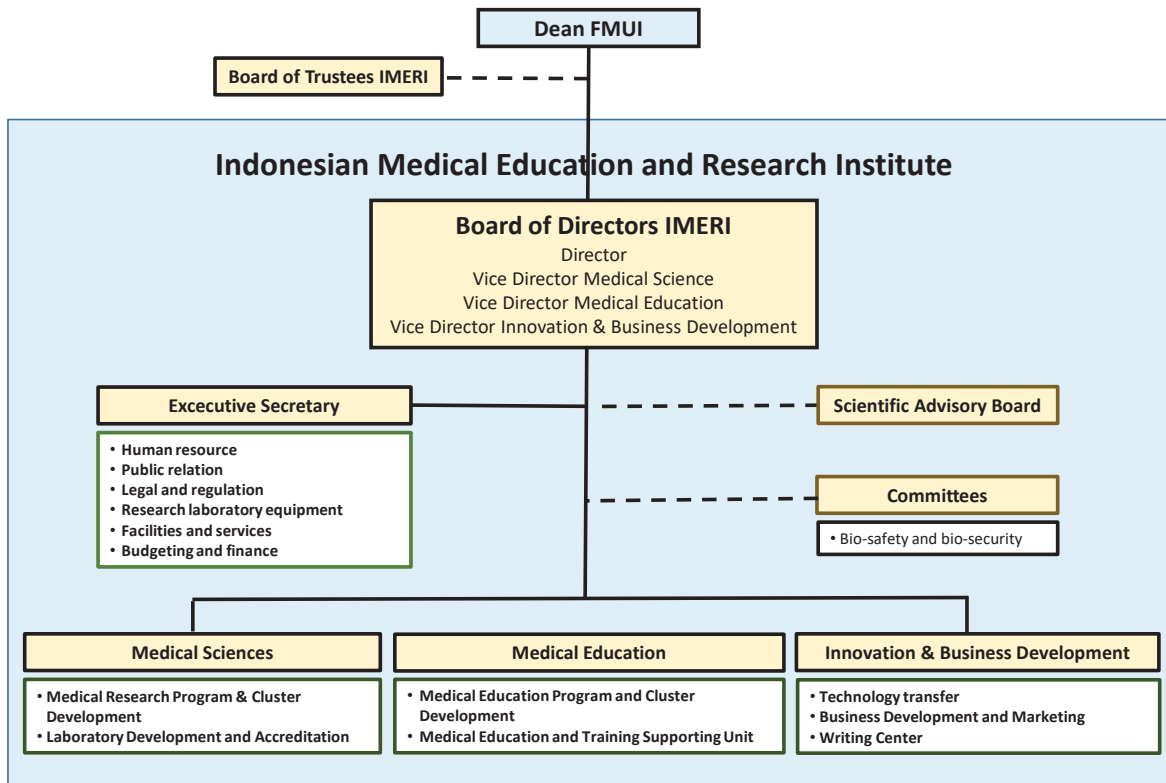
MISSION AND AMBITION

The mission stimulates IMERI to discover novel ways to diagnose, treat and prevent diseases, and to bring such innovation from the laboratory benches to the clinics and to the market place.

IMERI's also provide novel ways and technologies to enhance the education of future doctors and other health professionals, thereby building and sustaining Indonesia's educational and research capacities.

IMERI open for all talented researchers and educators, and expressly wants to collaborate with education and research centers from all regions of Indonesia and beyond.

Faculty of Medicine Universitas of Indonesia



ORGANIZATION

The Indonesian Medical Education and Research Institute is lead by a Board of Directors, supported by experienced heads of clusters and core facilities within the framework of FKUI.

IMERI is supported by a Scientific Advisory Board which is composed of national and international senior scientists from different fields of science, including medical, educational and related technical sciences.

IMERI has three stages of organization development :

- Organizational Establishment (2017 - 2018)
- Organizational Enhancement (2019 - 2021)
- Organizational Performance Acceleration (2022 - 2024)

CLUSTERS

Medical Science Cluster

- Drug Development
- Human Cancer
- Human Genetics
- Human Nutrition
- Human Reproduction, Fertility and Family Planning
- Infectious Disease and Immunology
- Metabolic Disorder, Cardiovascular diseases and Aging
- Neuroscience and Brain Development
- Occupational and Environmental Laboratory
- Stem Cell and Tissue Engineering
- Sports and Exercise Studies

Medical Education Cluster

- Centre of e-Learning
- Health and Medicine Museum
- Knowledge Management Centre
- Medical Education Centre
- Simulation Based Education and Research

Medical research core facilities

- Animal Experiment Facilities
- Bio-Informatica
- Clinical Research Supporting Unit
- Medical Technology
- Molecular Biology, Proteomics and Genome Facilities
- Technology transfer
- Writing Center

General supporting facilities

- Aula
- Auditorium
- Class and Seminar Room,
- Executive Lounge
- Integrated Teaching Theater
- Sky Lobby

THEME-BASED RESEARCH

To cope with global requirements but still addressing the local needs, IMERI have determined theme's of research in medical education and medical science

The theme's of research in medical science

- Tropical Urban Living : growing up and growing old healthy
- Emerging and re-emerging infections in the Indonesian archipelago

The themes of research in medical education

- Technology-enhanced teaching and learning methods
- Faculty development and professionalism
- Inter-professional education and collaborative practice.

CHALLENGES

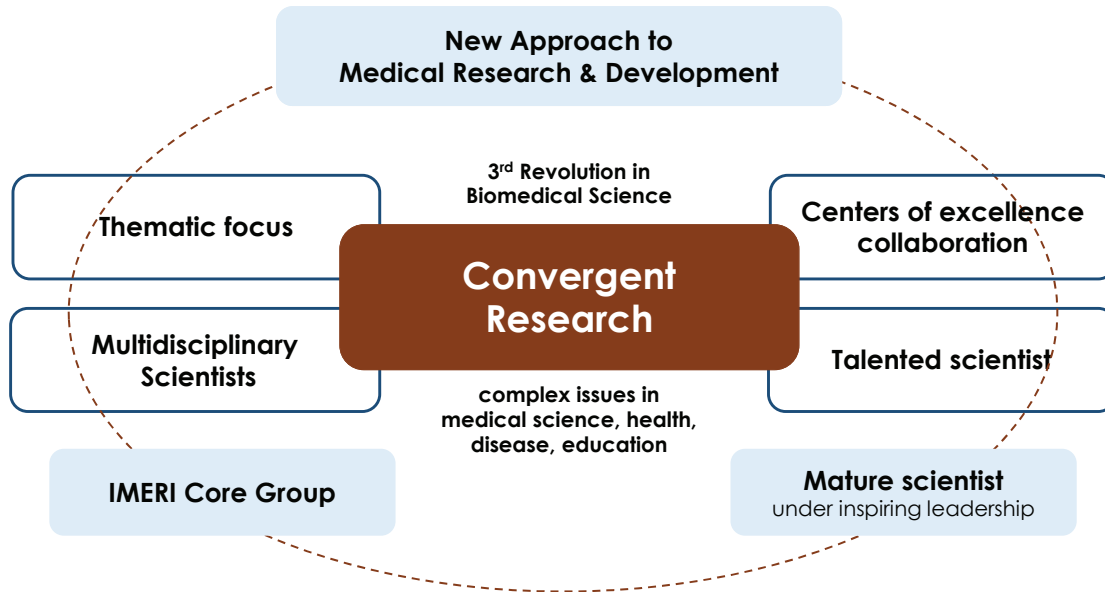
The theme of researches are defined and turned into 7 research challenges, involving convergent groups of scientists from multiple disciplines.

Medical Science

- Prematurity and stunted growth in urban (vs rural) Indonesia
- Degenerative diseases in tropical urban Indonesia
- Antimicrobial resistance containment in tropical middle income country
- Vector borne infections in a changing tropical climate

Medical Education

- Coping with Information overload and technological innovation
- Teacher professionalisation in era of industrial revolution 4.0
- Learning to collaborate across multiple disciplinary borders



CONVERGENT RESEARCH


IMERI provide ample 'community-catalyzing spaces' for scientist and support convergent series of thematic research programs by the formation of truly multidisciplinary groups of scientists.

Talented and motivated researchers are given the opportunity to coverage in IMERI to become mature scientists under inspiring leadership. The Convergent groups will receive IMERI's support to address their complex scientific challenges that are highly relevant to Indonesia society, such that they can become centers of excellence.

IMERI provides an academic atmosphere and excellence that has an impact on society and a flexible platform for a convergence in research will always instigated and nurtured.

Good quality research is the key factors to translate the scientific grounds innovations to products that feasible to market place with significant impact to health status of society.

MEDICAL SCIENCE CLUSTERS

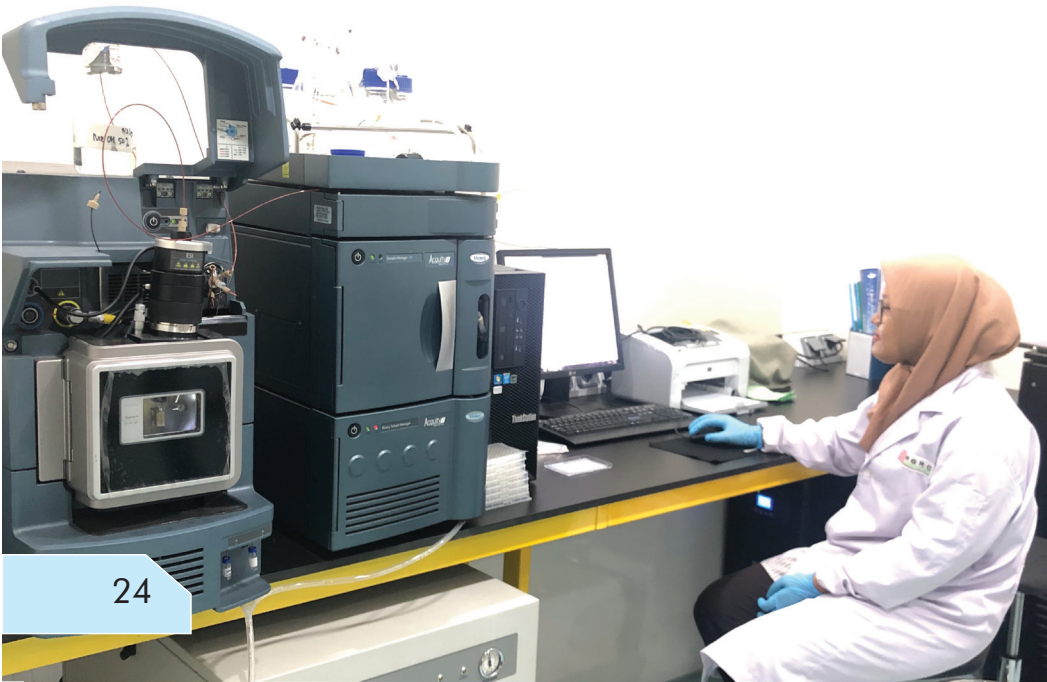
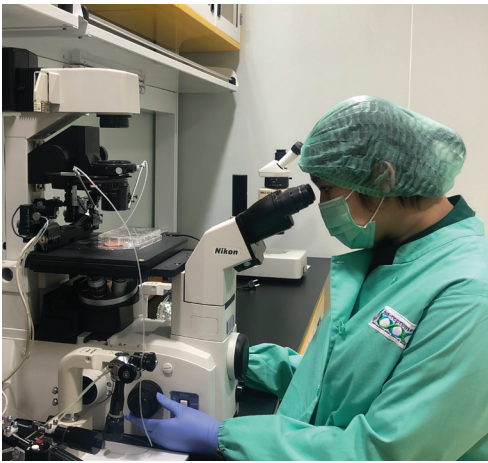
Research Tower	IMERI		Education Tower	
Infectious Diseases & Immunology			Executive lounge	
Occupational & Environmental Health, Clinical Research Supp Unit , Drug Development			Medical Education Centre	Master Program in Biomedical Science Doctoral Program in Biomedical Science Doctoral Program in Medical Science
Human Nutrition			Digital Library/Knowledge Center	
Neuroscience & Brain Development – MRU Office			Simulation based Medical Education and Research	
Stem cell & Tissue Engineering			Simulation based Medical Education and Research	
Molecular biology & Proteomics Core			Discussion, Seminar, Thesis, Postgraduate Room	
Center for Sport and Exercise Studies			Integrated Teaching Theater	
SKY LOBBY - Fitness Center - Mushola				
Human Reproductive – Metabolic Cardiovascular and Aging	Center of E Learning			
AUDITORIUM				
Human Genetic - Human Cancer	Office			
Animal Research Facilities	Office iMuseum - Management Building - MAIN HALL			
Indonesia Museum of Health and Medicine (iMuseum) and Commercial Tenant				
Car Park				
Car Park				


Drug Development develops lead compounds as candidates of drugs. There are two main research focuses, viz drug discovery and drug delivery. Research focus on drug discovery includes drug design and synthesis, natural product development, in-vitro and in-vivo bioactivity evaluation. While the drug delivery includes drug formulation, drug delivery system, pharmacokinetics assay, and synthesis of nanoparticles.

Human Cancer conducts research on diagnostic, risk factors, and treatment at the level of tissue, cellular, molecular and proteomics. Curently, there are three research focuses, namely breast cancer, colorectal cancer, and lymphoid and endocrine malignancies.

Human Genetic focuses are primarily the development of methods for diagnosing genetic diseases as well as neonatal screening for congenital metabolic diseases. The activities of the HGRC cluster are the development of microarrays, Fluorescent In Situ Hybridization (FISH) examinations, gene mutation analysis, and amino acid analysis. Microarray, FISH examinations, and gene mutation analysis were carried out in cases of congenital defects. These facilities enable HGRC to detect copy number variation, uniparental disomy (UPD), and mosaicism, abnormalities in the number and structure of chromosomes and mosaicism,

Human Nutrition, research focuses are early life nutrition, healthy lifestyle and prevention of obesity and non-communicable diseases, healthy aging and nutrition, public health for policy development. Human nutrition cluster also develops measurement methods on body composition and energy metabolism for diet, gut inflammation, gut microbiota, nutrigenomic, nutrigenetic, epigenetic, and also micronutrients. We aim to generate highly influential research outputs and translational products for nutrition and health policy.

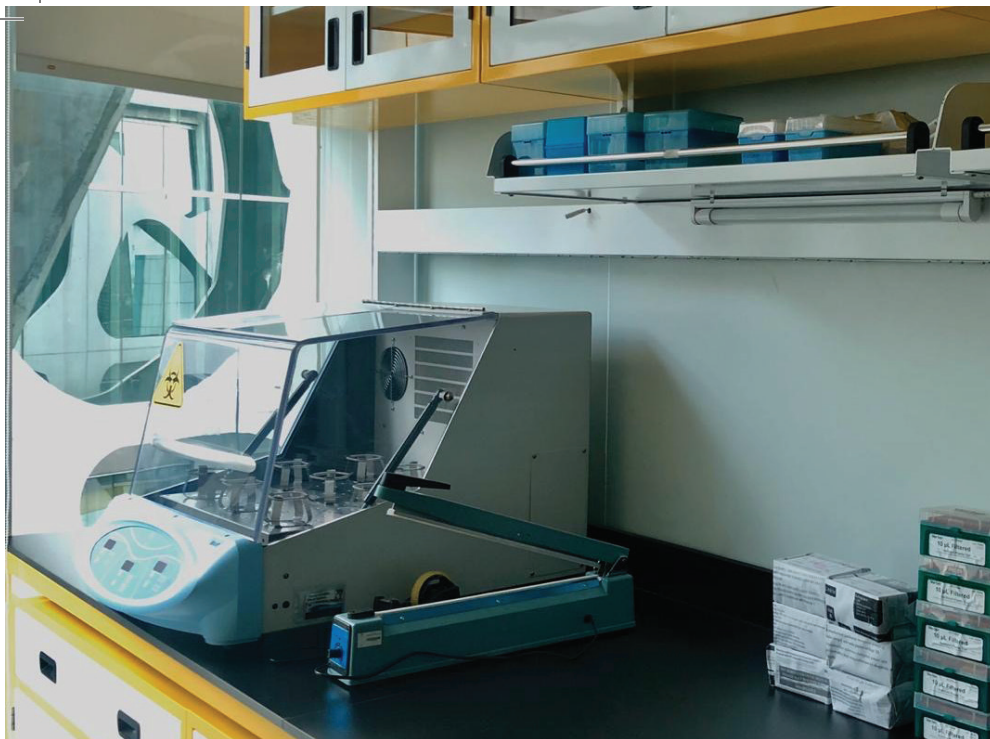


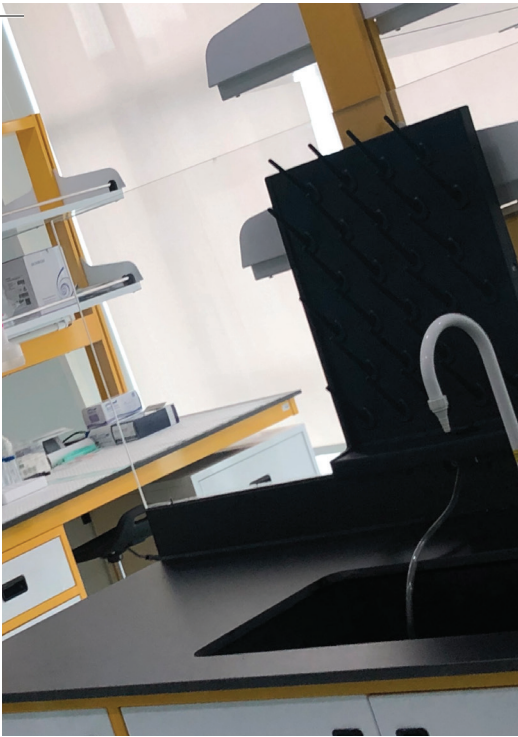
A vertical strip on the left side of the page contains several small, stacked images. From top to bottom, they show: a logo for the National Institute of Health (NIH) and the National Center for Human Genome Research; a computer monitor; a laboratory bench; a person in a green lab coat; a laboratory bench with equipment; and a laboratory bench with equipment.

Human Reproduction, Infertility, and Family Planning, brings together the expertise of clinicians and researchers working in reproductive health. The research portfolio spans from molecular investigation into the health of oocytes, sperm and embryos to clinical research of common gynecological conditions, such as endometrial and polycystic ovary syndrome. The research is focusing on epigenetics on reproduction (DNA methylation and microRNAs expression), new approach on pre-implantation genetic testing for aneuploidy (PGT-A) using non-invasive methods and also mitochondrial DNA as a biomarker for oocytes and embryos quality.

Infectious disease and immunology, solve issues in infectious diseases, such as tuberculosis, malaria, HIV, leptospirosis, bacterial, and viral infections. With sophisticated equipment and comprehensive facilities. The research project is to develop a modern diagnostic for disease detection with high sensitivity and specificity, in particular for tuberculosis and leptospirosis. The cluster is aiming also at formulating a better treatment for infectious diseases by exploring the fundamental understanding of diseases, such as HIV with immunology non-responder patients.

Metabolic Disorder, Cardiovascular, and Aging conducts research in the field of metabolic disorders, cardiovascular diseases, and physiology of aging, that can be translated into community and global health services, apart from the implementation in Dr. Cipto Mangunkusumo General Hospital and other teaching hospitals. The cluster is also expected to play a role in designation of medical education and health services policies. The research focus on the identification of basic pathomechanism and development of early detection methods including –but not limited to- biomarkers in the field of metabolic, cardiovascular and aging.





Neuroscience and Brain Development, investigate how the mind and brain works that manifest in the person behaviour, focusing on neuroplasticity and brain Immunochemistry Cellular Mechanism. The research areas are cognitive neuroscience, electro-encephalography, functional brain imaging, cellular mechanism of neurodegenerative disorders, regenerative medicine and neuro-psychiatry. The cluster also developes Brain Bank to support research activities on neurodegenerative diseases of which its pathogenesis remains unclear, such as Alzheimer Disease, Autism, Addiction, Depression.

Occupational and Environmental Health, focuses its research areas on aspects of work environment, biological monitoring of work environment exposure, and also the psychological aspect of workers. The cluster has varieties of measurement and analysis tools, such as lighting measurements, indoor air quality, Gas Chromatography and Mass-Spectrometry (GCMS) and Atomic Absorption Spectrophotometry (AAS). Current research includes indoor air quality of offices in several provinces in Indonesia, detection of heavy metals in urine, hair and blood samples of workers, and office workers' stress levels.

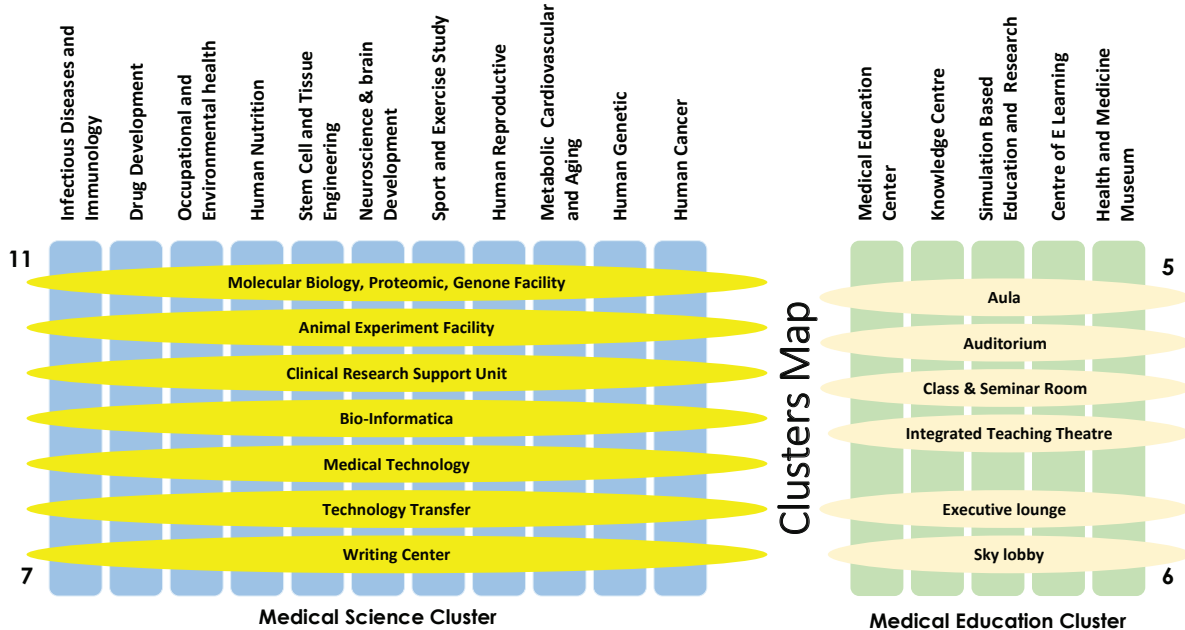
Sports and Exercise Studies. Achievement in international sports competition has always been a part of the pride of a nation. One of the important aspect in producing good athletes is the health or medical factor. The positive impact of physical activity and exercise to national health status has been addressed for years. Yet, ample studies is still needed to enhance the nationwide application of active lifestyle. The research focus on the health and medical profile, effect and problems of physical activity, exercise and sports through medical and interdisciplinary sports and exercise researches.



Stem Cell and Tissue Engineering (SCTE) is conducting interdisciplinary and integrated research of stem cell & tissue engineering to answer global challenges in stem cell therapy, including Mesenchymal Stem Cells (MSCs) and Hematopoietic Stem Cells (HSCs). Several cutting edge stem cell technology for example liver organoids and microencapsulation of HSCs, genetically engineered MSCs for BMP-2 production, direct programming hepatocyte from skin fibroblast and Induced Pluripotent Stem Cells (iPSCs) are the on going research project at SCTE

In tissue engineering area, natural liver and bone scaffolds have been developed from decellularized animal and human tissues, combined with synthetic and natural polymers. In the field of cancer research, the cluster has initiated research for prospective adoptive NK cell immunotherapy.

MEDICAL EDUCATION CLUSTER



Medical Education Center (MedEC) is a cluster focusing on research on medical and health professions education. There are number of research themes that are being developed by the cluster, i.e. faculty development, ethics and professionalism, medical students' characteristics, and humanism. Apart from research, MedEC also runs medical and health professions teacher training, tracer study of undergraduates or postgraduates of medical education program and curriculum consulting for medical education. The cluster aims to optimally contribute to the advancement of medical education development and research in Indonesia and the region.

Simulation Based Medical Education and Research or SIMUBEAR provides educational services related to simulation-based training and educational research. Currently there are three research focuses, i.e. Interprofessional education and collaborative practice, Simulation for healthcare professionals in improving patient safety, and Development of medical education learning devices. The cluster's educational services range from providing educational facilities for Objective Structured Clinical Examination (OSCE) to simulation masterclass for healthcare professionals. The cluster also provide training for educational purposes, especially in healthcare context.

Centre of e-Learning develop and provide open content and open course in medical and health fields. The Center also develops high quality distance learning program and online courses, which are accessible from various different places. The center conducts research related to e-learning and current trends in Technology Enhanced Learning (TEL). In collaboration with Digital Library Knowledge Center and Medical Technology Cluster, the cluster is currently developing a research program on technology-enhanced learning specifically for undergraduate medical education. Other research focus is coping with information overload and technology innovation.



Indonesia Museum of Health and Medicine (iMuseum)

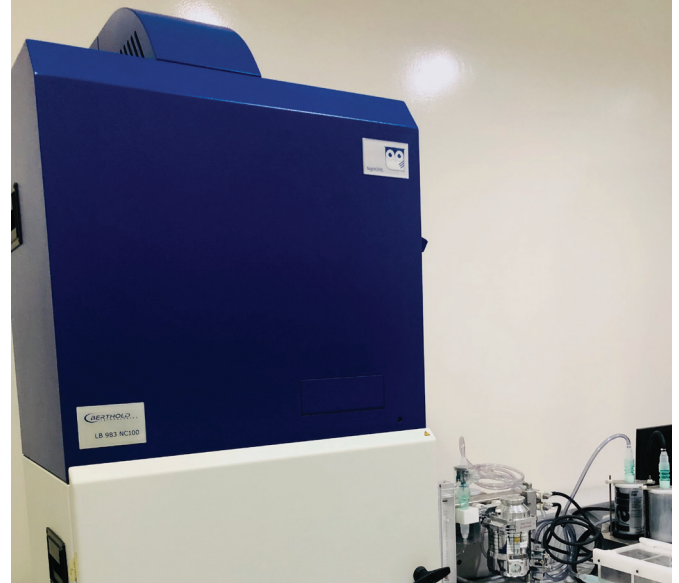
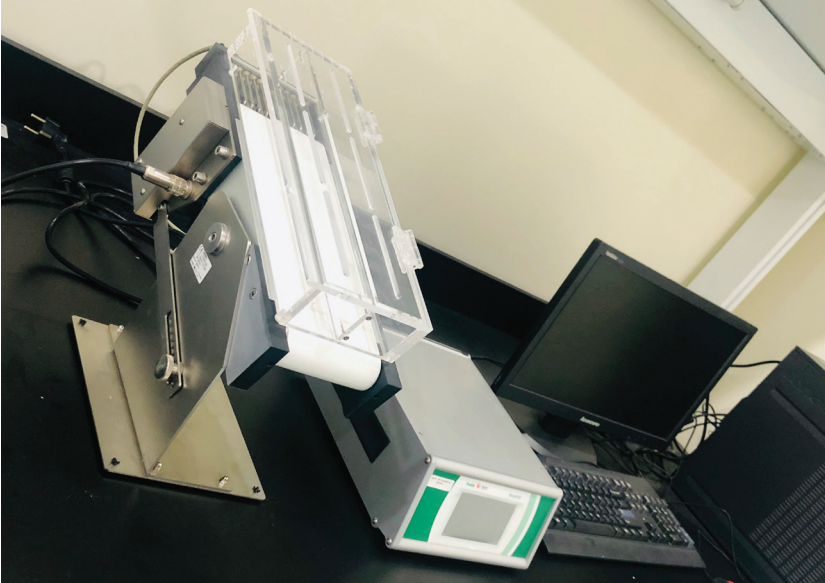
provides information about medical education journey in Indonesia and health education for society. iMuseum preserve medical education artefacts, including rare anatomical specimens and also actively participates in improving the quality of health and medical education in Indonesia. It is also the home of a sophisticated 3D anatomy visualization anatomical table, where students and scholars can refine their anatomy knowledge. The museum's vision is to become a national referral medical museum, a place for learning about health and medical sciences. iMuseum conducts research on the history of medicine and medical education.

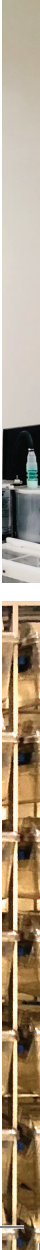
Digital Library Knowledge Center (DLKC) develop a system for data or knowledge management and become the home of IMERI intellectual data. This system preserves and enables easy and open access to all types of digital scientific literacy content. Journal articles, case reports, books, thesis, and dissertation which were produced by the academic community within the FKUI and IMERI, video recording of lectures and presentation of expert speakers during a symposium can also be kept in the DLKC data management with the arrangement of different level of accessibility.

DLKC support library practices that are based on best available evidence. Therefore, research on library and knowledge management are part of the cluster main activities.



Medical Research CORE FACILITIES

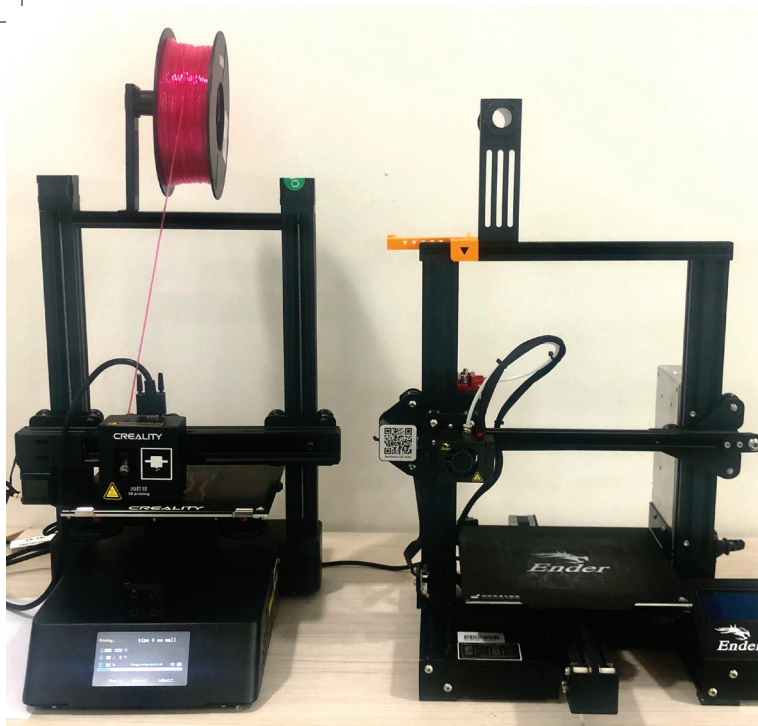




Animal Research Facilities (ARF) is specially designed to accommodate controlled environment for the care and maintenance of experimental animals. We facilitate research for students and researchers, both internal and external of IMERI FKUI. We also develop animal models for research, for example stroke model, diabetic, endometriosis, ovarian cancer, breast cancer, and many more. The ARF is equipped with treadmill for rodents, non-invasive blood pressure measurement, in-vivo imaging system, and individually ventilated cage for mice and rats.

The Molecular Biology and Proteomics Core Facilities (MBPCF) provide molecular biology and proteomics equipment and services that are of critical relevance in biomedical science. MBPCF provide research facilities and services of sample analysis (from sample preparation up to data analysis) and consultation. The core facilities have professional equipment and advanced technology platforms, which include oligonucleotide synthesis, protein characterization system, ultra centrifuge (up to 65000 rpm). The cluster organize training program in molecular biology and proteomics analysis for individual and groups regularly. They also arrange research consultation involving expertise in genomics and proteomics study.

Medical Technology, it is a home for five ongoing research projects such as biomaterials, brain imaging and re-engineering, medical instrumentation and simulators, biosignal processing and health information technology (IT), and also primary care technology. Through these research focuses, the cluster is expected to answer some challenges in the 4th industrial revolution, specifically in field of medicine. The cluster provides services for external users, for example in developing health IT application, gait analysis, safety performance testing, clinical trial and calibration of medical devices and medical 3D modeling and prototyping.



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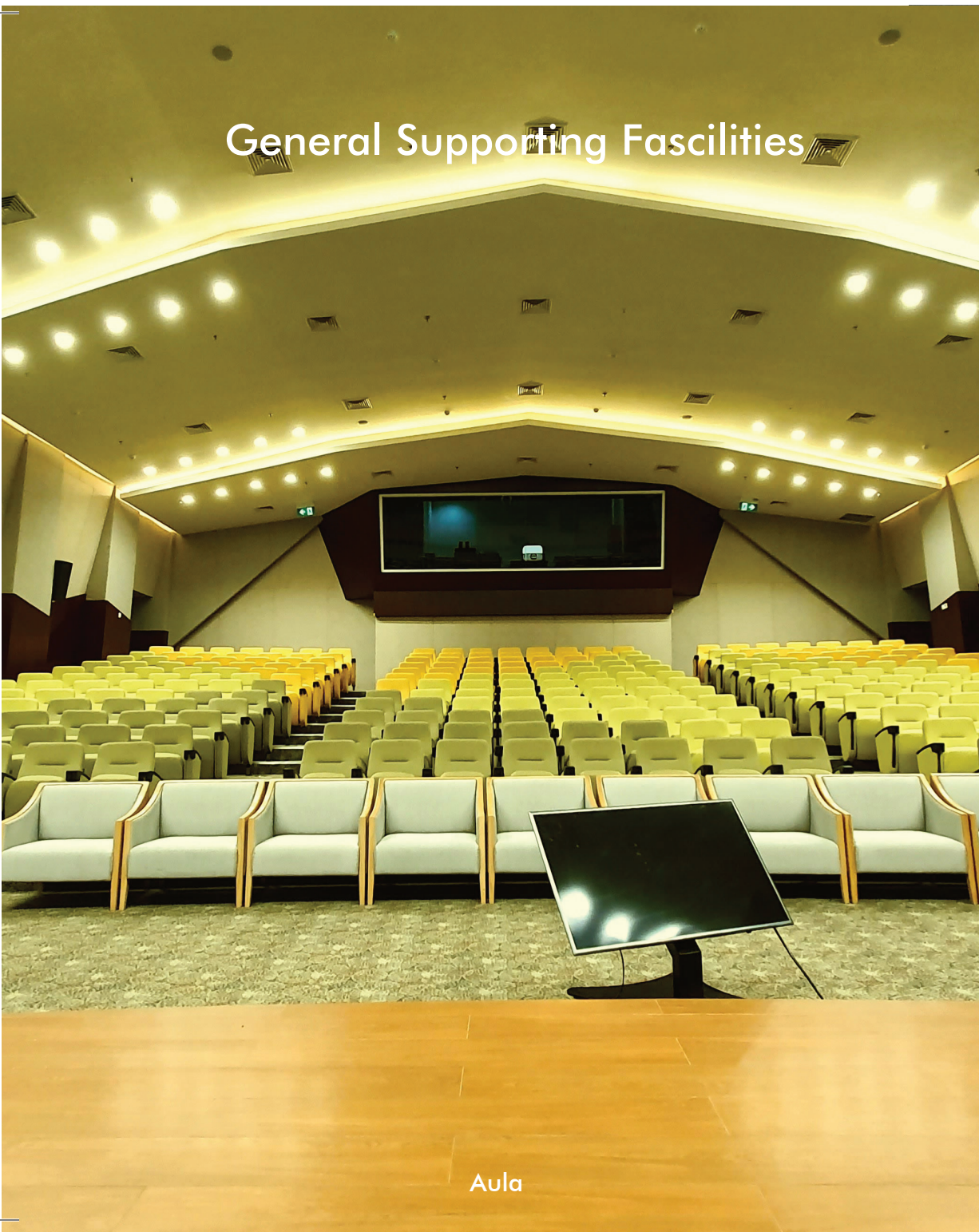


Bioinformatics core facility upholds scientific excellence in genomic profiling, molecular modeling and healthcare big data analysis with the cutting-edge of NGS and bioinformatics expertise. The research focuses include reverse vaccinology using omics data for vaccine design; gene variant identification; whole genomic analysis from *Escherichia coli* to identify MDR (Multi-Drug Resistance) gene; gut microbiome analysis related to several non-communicable diseases; designing primers for a standard PCR; molecular modeling, docking and dynamic simulation for drug discovery based on database; and protein-protein interaction prediction.

Clinical research supporting unit (CRSU) is a contract research organization (CRO) with the main mission to organize and conduct clinical studies in Indonesia and overseas and ensure that they are in accordance with International Conference Harmonization and Good Clinical Practices (ICH-GCP). CRSU has a good networking with industry and related institutions both in Indonesia and overseas. CRSU mainly focuses on improving the quality of clinical trials in Indonesia through conducting clinical research according to GCP guidelines. In line with this, CRSU has established good collaboration with various stakeholders

Writing center. One of the main outputs of a research institute is high quality publications in highly reputable international journals. Therefore, a writing center was established in IMERI to support the process of preparing high quality manuscripts ready for submission. The writing center also provide assistance in identifying the most appropriate journals for each particular manuscript so that the manuscript can be prepared according to the journal style and format.

General Supporting Facilities



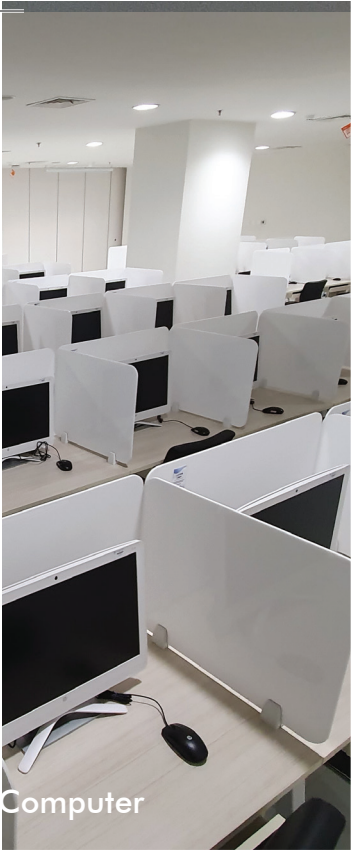
Aula



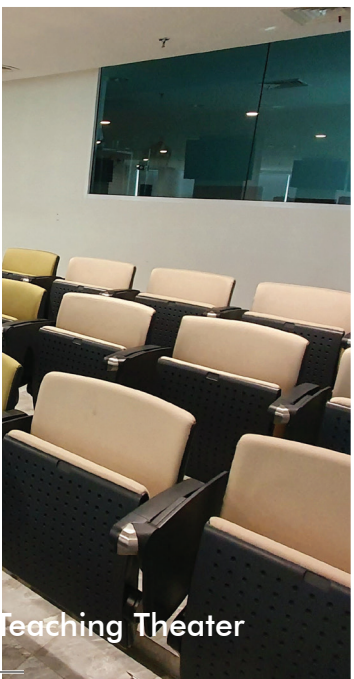
Lab Comp



Integrated Teach



Computer



Teaching Theater



Executive Lounge

