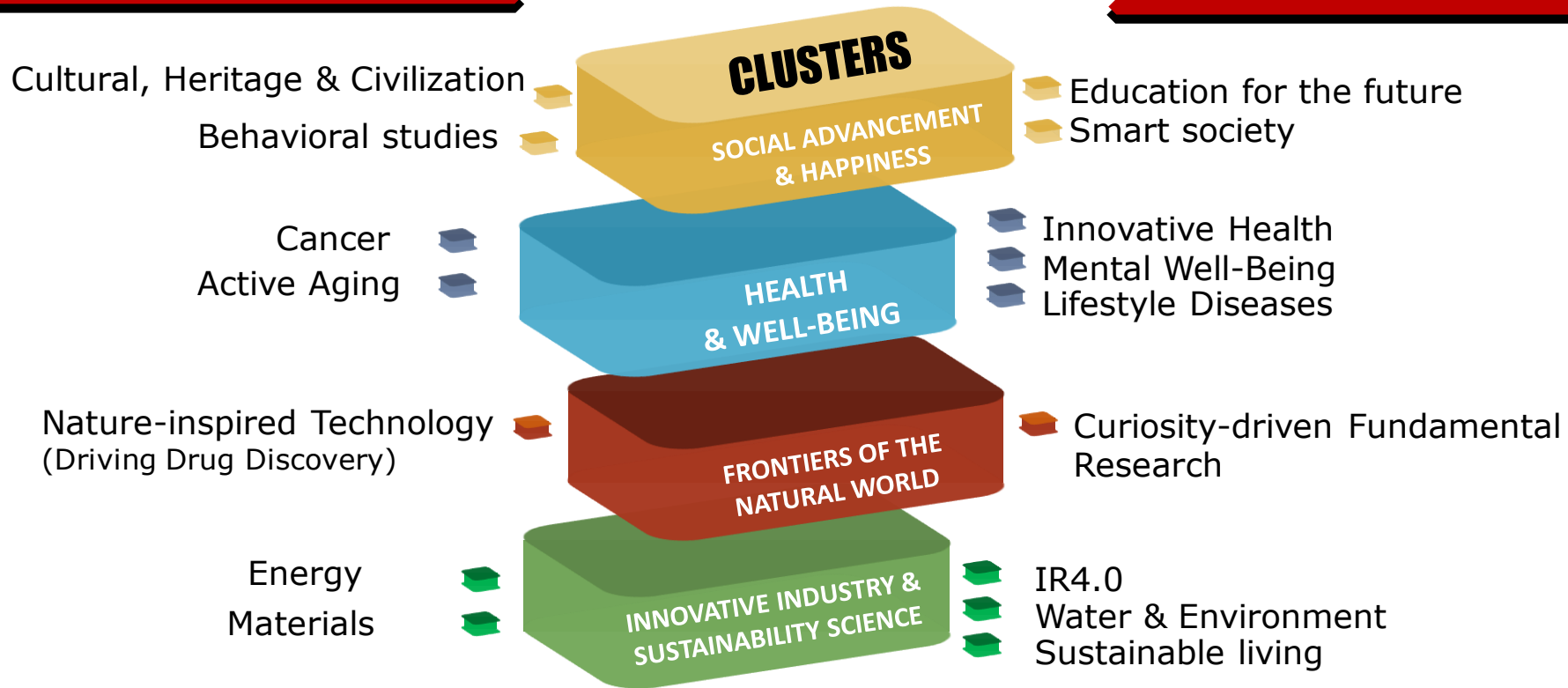


**IIRG RESEARCH NICHE AND
THRUST AREAS
2019-2021**

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NICHE AREAS

THRUST AREAS



Research approach:

Basic
Applied
Interdisciplinary
Translational

Themes:
(should incorporate)

Happiness
Sustainability
Technology

Humanities
Innovation & creativity

Social Advancement & Happiness Research Cluster (SAH)

- The present situations in life & society are considered an improvement compared to the past & this social progression allows the advancement of a group of individuals or institutions to move upwards in terms of income, wealth, & education.
- The impact of social advancement is expected to create a more **inclusive, civilised** and **happy society**. (SAH) Research Cluster, will focus on interdisciplinary research themes particularly;

Niche

Culture Heritage and Civilization

- Expressing the ways of living developed by a community and passed on from generation to generation
- Preserving cultural heritage

Behavioral Studies

- Exploring the activities & interactions among human beings to create policy that can bring about change through desirable behaviors
- Analysing human motivations, activities, psychological processes & interactions
- Assessing impact of a particular behavior on income, wealth, productivity & happiness

Thrust

Smart Society

- Creating new technology (applications) to realise the ideas of “smart thing” & “smart me”
- Providing solutions to manage societies using technology and human elements

Education for the Future

- Creating innovative content for teaching & learning
- Developing new and innovative technology to deliver content
- Creating applications to enhance teaching and learning

Health and Well-Being Research Cluster

- Aims to foster interdisciplinary research programmes that initiate; **ground-breaking, innovative & sustainable solutions** towards better health and well-being.
- We embrace various expertise & stakeholders in making a meaningful & lasting impact on selected focus areas;

Niche

- **Active Ageing**

- Developing & maintaining functional, emotional & social abilities that enables a meaningful journey of life.
- Developing the environments that support active ageing using recent technology advances.

- **Cancer**

- Driving cancer prevention, diagnosis & treatment with precision medicine.
- Developing community that embrace cancer survivorship with dignity.

Thrust

- **Lifestyle Diseases**

- Improving QoL through precision healthcare & behavioural changes in relation to NCDs
- Overcoming diseases associated with urbanisation & way of life.

- **Innovative Healthcare**

- Driving innovations in regenerative medicine, bioprinting, & personalised medicine.
- Exploring nanomedicine for drug delivery, theranostics, nano biosensors & nanobots.
- Transforming healthcare using artificial intelligence in keeping healthy lifestyle, diagnosis and decision-making.

- **Mental Well-Being**

- Improving treatment outcome for patients with mental illnesses.
- Conquering addictive disorders for substance of abuse.
- Thriving as individual & community in a digital world.

Innovative Industry & Sustainability Science Research Cluster (IISS)

- Supports research efforts leading to **innovative & sustainable solutions** to problems **relevant to industry and society**.
- Committed to **build collaborative linkages** between **UM researchers & industrial partners**. Impact Oriented Interdisciplinary Research in the following niche and thrust areas are promoted:

Niche

Energy

- aims to bring energy researchers on a common platform to address important energy challenges in a collaborative manner.

Materials

- intends to bring researchers with different materials background to work on innovative material solutions to industrial problems.

Thrust

Industrial 4.0

- IISS will bring together researchers from computer science & information technology, engineering, business & economics to work on innovative projects.

Water & Environment:

- Research on developing strategies and technologies for quality, prediction, prevention and protection of water resources & environment are of particular interest.
- Investigations on the effects of global warming/climate change on the environment & the effects of anthropogenic activities on climate change will also be highlighted.

Sustainable Living:

- aims to foster interdisciplinary research to meet the challenges & promote solutions of sustainable development for the society.