

Research field

The Danish National Research Foundation (DNRF) supports all fields of science. The classification of applications for the 13th Round of Centers of Excellence is aligned with the structure employed by the European Research Council (ERC). It includes three main domains: Physical Sciences & Engineering, Life Sciences, and Social Sciences & Humanities. These domains are divided into sub-field categories outlined below.

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Physical Sciences & Engineering

Mathematics

- *All areas of mathematics, pure and applied, plus mathematical foundations of computer science, mathematical physics, and statistics.*

Fundamental Constituents of Matter

- *Particle, nuclear, plasma, atomic, molecular, gas, and optical physics.*

Condensed Matter Physics

- *Structure, electronic properties, fluids, nanosciences, biological physics.*

Physical and Analytical Chemical Sciences

- *Analytical chemistry, chemical theory, physical chemistry/chemical physics.*

Synthetic Chemistry and Materials

- *New materials and new synthetic approaches, structure-properties relations, solid state chemistry, molecular architecture, organic chemistry.*

Computer Science and Informatics

- *Theoretical and experimental computer science, information processing, intelligent systems.*

Systems and Communication Engineering

- *Electrical, electronic, communication, optical and systems engineering.*

Products and Processes Engineering

- *Product and process design, chemical, civil, environmental, mechanical, vehicle engineering, energy processes and relevant computational methods.*

Universe Sciences

- *Astro-physics/-chemistry/-biology; solar system; planetary systems; stellar, galactic and extragalactic astronomy; cosmology; space sciences; astronomical instrumentation and data.*

Earth System Science

- *Physical geography, geology, geophysics, atmospheric sciences, oceanography, climatology, cryology, ecology, global environmental change, biogeochemical cycles, natural resources management.*

Materials Engineering

- *Advanced materials development: performance enhancement, modelling, large-scale preparation, modification, tailoring, optimisation, novel and combined use of materials, etc.*

Life Sciences

Molecules of Life: Biological Mechanisms, Structures and Functions

- *For all organisms: Molecular biology, biochemistry, structural biology, molecular biophysics, synthetic and chemical biology, drug design, innovative methods and modelling.*

Integrative Biology: From Genes and Genomes to Systems

- *For all organisms: Genetics, epigenetics, genomics and other 'omics studies, bioinformatics, systems biology, genetic diseases, gene editing, innovative methods and modelling, 'omics for personalised medicine.*

Cell Biology, Development, Stem Cells and Regeneration

- *For all organisms: Structure and function of the cell, cell-cell communication, embryogenesis, tissue differentiation, organogenesis, growth, development, evolution of development, organoids, stem cells, regeneration, therapeutic approaches.*

Physiology in Health, Disease and Ageing

- *Organ and tissue physiology, comparative physiology, physiology of ageing, pathophysiology, inter-organ and tissue communication, endocrinology, nutrition, metabolism, interaction with the microbiome, non-communicable diseases including cancer (except disorders of the nervous system and immunity-related diseases).*

Neuroscience and Disorders of the Nervous System

- *Nervous system development, homeostasis and ageing, nervous system function and dysfunction, systems neuroscience and modelling, biological basis of cognitive processes and behavior, neurological and mental disorders in humans and all other organisms.*

Immunity, Infection and Immunotherapy

- *The immune system, related disorders and their mechanisms, biology of infectious agents and infection, biological basis of prevention and treatment of infectious diseases, innovative immunological tools and approaches, including therapies.*

Prevention, Diagnosis and Treatment of Human Diseases

- *Medical technologies and tools for prevention, diagnosis and treatment of human diseases, therapeutic approaches and interventions, pharmacology, preventative medicine, epidemiology and public health, digital medicine.*

Environmental Biology, Ecology and Evolution

- *For all organisms: Ecology, biodiversity, environmental change, evolutionary biology, behavioral ecology, microbial ecology, marine biology, ecophysiology, theoretical developments and modelling.*

Biotechnology and Biosystems Engineering

- *Biotechnology using all organisms, biotechnology for environment and food applications, applied plant and animal sciences, bioengineering and synthetic biology, biomass and biofuels, biohazards.*

Social Sciences & Humanities

Individuals, Markets and Organizations

- *Economics, finance, management.*

Institutions, Governance and Legal Systems

- *Political science, international relations, law.*

The Social World and Its Interactions

- *Sociology, social psychology, education sciences, communication studies.*

The Human Mind and Its Complexity

- *Cognitive science, psychology, linguistics.*

Texts and Concepts

- *Literary studies, literature, philosophy.*

The Study of the Human Past

- *Archaeology and history.*

Human Mobility, Environment, and Space

- *Human geography, demography, health, sustainability science, territorial planning, spatial analysis.*

Studies of Cultures and Arts

- *Social anthropology, studies of cultures, studies of arts.*