

PRACE AND THE ERC PEER REVIEW EVALUATION PANELS

For the planning and operation of the evaluation of PRACE awards proposals, the ERC panel structure applies.

There are 25 ERC panels to cover all fields of science, assigned to three research domains: Physical Sciences and Engineering (10 Panels, PE1–PE10), Life Sciences (9 Panels, LS1–LS9), and Social Sciences and Humanities (6 Panels, SH1–SH6).

The panel names are accompanied by a list of panel descriptors (i.e. ERC keywords) indicating the fields of research covered by the respective ERC panels. The panel descriptors must always be read in the overall context of the panel's titles and sub-titles.

PHYSICAL SCIENCES AND ENGINEERING

PE1 Mathematics: all areas of mathematics, pure and applied, plus mathematical foundations of computer science, mathematical physics and statistics

- PE1_1 Logic and foundations
- PE1_2 Algebra
- PE1_3 Number theory
- PE1_4 Algebraic and complex geometry
- PE1_5 Geometry
- PE1_6 Topology
- PE1_7 Lie groups, Lie algebras
- PE1_8 Analysis
- PE1_9 Operator algebras and functional analysis
- PE1_10 ODE and dynamical systems
- PE1_11 Theoretical aspects of partial differential equations
- PE1_12 Mathematical physics
- PE1_13 Probability
- PE1_14 Statistics
- PE1_15 Discrete mathematics and combinatorics
- PE1_16 Mathematical aspects of computer science
- PE1_17 Numerical analysis
- PE1_18 Scientific computing and data processing
- PE1_19 Control theory and optimization
- PE1_20 Application of mathematics in sciences
- PE1_21 Application of mathematics in industry and society life

PE2 Fundamental constituents of matter: particle, nuclear, plasma, atomic, molecular, gas, and optical physics

- PE2_1 Fundamental interactions and fields
- PE2_2 Particle physics
- PE2_3 Nuclear physics
- PE2_4 Nuclear astrophysics
- PE2_5 Gas and plasma physics
- PE2_6 Electromagnetism
- PE2_7 Atomic, molecular physics
- PE2_8 Ultra-cold atoms and molecules
- PE2_9 Optics, non-linear optics and nano-optics

PE2_10 Quantum optics and quantum information
PE2_11 Lasers, ultra-short lasers and laser physics
PE2_12 Acoustics
PE2_13 Relativity
PE2_14 Thermodynamics
PE2_15 Non-linear physics
PE2_16 General physics
PE2_17 Metrology and measurement
PE2_18 Statistical physics (gases)

PE3 Condensed matter physics: structure, electronic properties, fluids, nanosciences

PE3_1 Structure of solids and liquids
PE3_2 Mechanical and acoustical properties of condensed matter
PE3_3 Thermal properties of condensed matter
PE3_4 Transport properties of condensed matter
PE3_5 Electronic properties of materials and transport
PE3_6 Lattice dynamics
PE3_7 Semiconductors, material growth, physical properties
PE3_8 Superconductivity
PE3_9 Superfluids
PE3_10 Spintronics
PE3_11 Magnetism
PE3_12 Electro-optics
PE3_13 Nanophysics: nanoelectronics, nanophotonics, nanomagnetism
PE3_14 Mesoscopic physics
PE3_15 Molecular electronics
PE3_16 Soft condensed matter (liquid crystals...)
PE3_17 Fluid dynamics (physics)
PE3_18 Statistical physics (condensed matter)
PE3_19 Phase transitions, phase equilibria
PE3_20 Biophysics

PE4 Physical and analytical chemical sciences: analytical chemistry, chemical theory, physical chemistry/chemical physics

PE4_1 Physical chemistry
PE4_2 Spectroscopic and spectrometric techniques
PE4_3 Molecular architecture and Structure
PE4_4 Surface science and nanostructures
PE4_5 Analytical chemistry
PE4_6 Chemical physics
PE4_7 Chemical instrumentation
PE4_8 Electrochemistry, electrodialysis, microfluidics, sensors
PE4_9 Method development in chemistry
PE4_10 Heterogeneous catalysis
PE4_11 Physical chemistry of biological systems
PE4_12 Chemical reactions: mechanisms, dynamics, kinetics and catalytic reactions
PE4_13 Theoretical and computational chemistry
PE4_14 Radiation chemistry
PE4_15 Nuclear chemistry

PE4_16 Photochemistry
 PE4_17 Corrosion
 PE4_18 Characterization methods of materials

PE5 Synthetic chemistry and materials: materials synthesis, structure-properties relations, functional and advanced materials, molecular architecture, organic chemistry

PE5_1 Structural properties of materials
 PE5_2 Solid state materials
 PE5_3 Surface modification
 PE5_4 Thin films
 PE5_5 Ionic liquids
 PE5_6 New materials: oxides, alloys, composite, organic-inorganic hybrid, nanoparticles
 PE5_7 Biomaterials synthesis
 PE5_8 Intelligent materials – self assembled materials
 PE5_9 Environment chemistry
 PE5_10 Coordination chemistry
 PE5_11 Colloid chemistry
 PE5_12 Biological chemistry
 PE5_13 Chemistry of condensed matter
 PE5_14 Homogeneous catalysis
 PE5_15 Macromolecular chemistry
 PE5_16 Polymer chemistry
 PE5_17 Supramolecular chemistry
 PE5_18 Organic chemistry
 PE5_19 Molecular chemistry
 PE5_20 Combinatorial chemistry

PE6 Computer science and informatics: informatics and information systems, computer science, scientific computing, intelligent systems

PE6_1 Computer architecture, pervasive computing, ubiquitous computing
 PE6_2 Computer systems, parallel/distributed systems, sensor networks, embedded systems, cyber-physical systems
 PE6_3 Software engineering, operating systems, computer languages
 PE6_4 Theoretical computer science, formal methods, and quantum computing
 PE6_5 Cryptology, security, privacy, quantum crypto
 PE6_6 Algorithms, distributed, parallel and network algorithms, algorithmic game theory
 PE6_7 Artificial intelligence, intelligent systems, multi agent systems
 PE6_8 Computer graphics, computer vision, multimedia, computer games
 PE6_9 Human computer interaction and interface, visualization and natural language processing
 PE6_10 Web and information systems, database systems, information retrieval and digital libraries
 PE6_11 Machine learning, statistical data processing and applications using signal processing (eg. speech, image, and video)
 PE6_12 Scientific computing, simulation and modelling tools
 PE6_13 Bioinformatics, biocomputing, and DNA and molecular computation

PE7 Systems and communication engineering: electronic, communication, optical and systems engineering

PE7_1 Control engineering

PE7_2 Electrical and electronic engineering: semiconductors, components, systems
 PE7_3 Simulation engineering and modelling
 PE7_4 Systems engineering, sensorics, actorics, automation
 PE7_5 Micro- and nanoelectronics, optoelectronics
 PE7_6 Communication technology, high-frequency technology
 PE7_7 Signal processing
 PE7_8 Networks (communication networks, sensor networks, networks of robots.....)
 PE7_9 Man-machine-interfaces
 PE7_10 Robotics

PE8 Products and processes engineering: product design, process design and control, construction methods, civil engineering, energy systems, material engineering

PE8_1 Aerospace engineering
 PE8_2 Chemical engineering, technical chemistry
 PE8_3 Civil engineering, maritime/hydraulic engineering, geotechnics, waste treatment
 PE8_4 Computational engineering
 PE8_5 Fluid mechanics, hydraulic-, turbo-, and piston engines
 PE8_6 Energy systems (production, distribution, application)
 PE8_7 Micro (system) engineering
 PE8_8 Mechanical and manufacturing engineering (shaping, mounting, joining, separation)
 PE8_9 Materials engineering (biomaterials, metals, ceramics, polymers, composites, ...)
 PE8_10 Production technology, process engineering
 PE8_11 Product design, ergonomics, man-machine interfaces
 PE8_12 Sustainable design (for recycling, for environment, eco-design)
 PE8_13 Lightweight construction, textile technology
 PE8_14 Industrial bioengineering
 PE8_15 Industrial biofuel production

PE9 Universe sciences: astro-physics/chemistry/biology; solar system; stellar, galactic and extragalactic astronomy, planetary systems, cosmology, space science, instrumentation

PE9_1 Solar and interplanetary physics
 PE9_2 Planetary systems sciences
 PE9_3 Interstellar medium
 PE9_4 Formation of stars and planets
 PE9_5 Astrobiology
 PE9_6 Stars and stellar systems
 PE9_7 The Galaxy
 PE9_8 Formation and evolution of galaxies
 PE9_9 Clusters of galaxies and large scale structures
 PE9_10 High energy and particles astronomy – X-rays, cosmic rays, gamma rays, neutrinos
 PE9_11 Relativistic astrophysics
 PE9_12 Dark matter, dark energy
 PE9_13 Gravitational astronomy
 PE9_14 Cosmology
 PE9_15 Space Sciences
 PE9_16 Very large data bases: archiving, handling and analysis
 PE9_17 Instrumentation - telescopes, detectors and techniques

PE10 Earth system science: physical geography, geology, geophysics, atmospheric sciences, oceanography, climatology, ecology, global environmental change, biogeochemical cycles, natural resources management

PE10_1 Atmospheric chemistry, atmospheric composition, air pollution
 PE10_2 Meteorology, atmospheric physics and dynamics
 PE10_3 Climatology and climate change
 PE10_4 Terrestrial ecology, land cover change
 PE10_5 Geology, tectonics, volcanology
 PE10_6 Paleoclimatology, paleoecology
 PE10_7 Physics of earth's interior, seismology, volcanology
 PE10_8 Oceanography (physical, chemical, biological, geological)
 PE10_9 Biogeochemistry, biogeochemical cycles, environmental chemistry
 PE10_10 Mineralogy, petrology, igneous petrology, metamorphic petrology
 PE10_11 Geochemistry, crystal chemistry, isotope geochemistry, thermodynamics
 PE10_12 Sedimentology, soil science, palaeontology, earth evolution
 PE10_13 Physical geography
 PE10_14 Earth observations from space/remote sensing
 PE10_15 Geomagnetism, paleomagnetism
 PE10_16 Ozone, upper atmosphere, ionosphere
 PE10_17 Hydrology, water and soil pollution

LIFE SCIENCES

LS1 Molecular and Structural Biology and Biochemistry: molecular biology, biochemistry, biophysics, structural biology, biochemistry of signal transduction

LS1_1 Molecular biology and interactions
 LS1_2 General biochemistry and metabolism
 LS1_3 DNA synthesis, modification, repair, recombination and degradation
 LS1_4 RNA synthesis, processing, modification and degradation
 LS1_5 Protein synthesis, modification and turnover
 LS1_6 Biophysics
 LS1_7 Structural biology (crystallography, NMR, EM)
 LS1_8 Biochemistry of signal transduction

LS2 Genetics, Genomics, Bioinformatics and Systems Biology: genetics, population genetics, molecular genetics, genomics, transcriptomics, proteomics, metabolomics, bioinformatics, computational biology, biostatistics, biological modelling and simulation, systems biology, genetic epidemiology

LS2_1 Genomics, comparative genomics, functional genomics
 LS2_2 Transcriptomics
 LS2_3 Proteomics
 LS2_4 Metabolomics
 LS2_5 Glycomics
 LS2_6 Molecular genetics, reverse genetics and RNAi
 LS2_7 Quantitative genetics
 LS2_8 Epigenetics and gene regulation
 LS2_9 Genetic epidemiology

LS2_10 Bioinformatics
LS2_11 Computational biology
LS2_12 Biostatistics
LS2_13 Systems biology
LS2_14 Biological systems analysis, modelling and simulation

LS3 Cellular and Developmental Biology: cell biology, cell physiology, signal transduction, organogenesis, developmental genetics, pattern formation in plants and animals

LS3_1 Morphology and functional imaging of cells
LS3_2 Cell biology and molecular transport mechanisms
LS3_3 Cell cycle and division
LS3_4 Apoptosis
LS3_5 Cell differentiation, physiology and dynamics
LS3_6 Organelle biology
LS3_7 Cell signalling and cellular interactions
LS3_8 Signal transduction
LS3_9 Development, developmental genetics, pattern formation and embryology in animals
LS3_10 Development, developmental genetics, pattern formation and embryology in plants
LS3_11 Cell genetics
LS3_12 Stem cell biology

LS4 Physiology, Pathophysiology and Endocrinology: organ physiology, pathophysiology, endocrinology, metabolism, ageing, regeneration, tumorigenesis, cardiovascular disease, metabolic syndrome

LS4_1 Organ physiology
LS4_2 Comparative physiology
LS4_3 Endocrinology
LS4_4 Ageing
LS4_5 Metabolism, biological basis of metabolism related disorders
LS4_6 Cancer and its biological basis
LS4_7 Cardiovascular diseases
LS4_8 Non-communicable diseases (except for neural/psychiatric, immunity-related, metabolism-related disorders, cancer and cardiovascular diseases)

LS5 Neurosciences and neural disorders: neurobiology, neuroanatomy, neurophysiology, neurochemistry, neuropharmacology, neuroimaging, systems neuroscience, neurological disorders, psychiatry

LS5_1 Neuroanatomy and neurophysiology
LS5_2 Molecular and cellular neuroscience
LS5_3 Neurochemistry and neuropharmacology
LS5_4 Sensory systems (e.g. visual system, auditory system)
LS5_5 Mechanisms of pain
LS5_6 Developmental neurobiology
LS5_7 Cognition (e.g. learning, memory, emotions, speech)
LS5_8 Behavioral neuroscience (e.g. sleep, consciousness, handedness)
LS5_9 Systems neuroscience
LS5_10 Neuroimaging and computational neuroscience
LS5_11 Neurological disorders (e.g. Alzheimer's disease, Huntington's disease, Parkinson's disease)

LS5_12 Psychiatric disorders (e.g. schizophrenia, autism, Tourette's syndrome, obsessive compulsive disorder, depression, bipolar disorder, attention deficit hyperactivity disorder)

LS6 Immunity and infection: immunobiology, aetiology of immune disorders, microbiology, virology, parasitology, global and other infectious diseases, population dynamics of infectious diseases, veterinary medicine

LS6_1 Innate immunity

LS6_2 Adaptive immunity

LS6_3 Phagocytosis and cellular immunity

LS6_4 Immunosignalling

LS6_5 Immunological memory and tolerance

LS6_6 Immunogenetics

LS6_7 Microbiology

LS6_8 Virology

LS6_9 Bacteriology

LS6_10 Parasitology

LS6_11 Prevention and treatment of infection by pathogens (e.g. vaccination, antibiotics, fungicide)

LS6_12 Biological basis of immunity related disorders

LS6_13 Veterinary medicine

LS7 Diagnostic tools, therapies and public health: aetiology, diagnosis and treatment of disease, public health, epidemiology, pharmacology, clinical medicine, regenerative medicine, medical ethics

LS7_1 Medical engineering and technology

LS7_2 Diagnostic tools (e.g. genetic, imaging)

LS7_3 Pharmacology, pharmacogenomics, drug discovery and design, drug therapy

LS7_4 Analgesia

LS7_5 Toxicology

LS7_6 Gene therapy, stem cell therapy, regenerative medicine

LS7_7 Surgery

LS7_8 Radiation therapy

LS7_9 Health services, health care research

LS7_10 Public health and epidemiology

LS7_11 Environment and health risks including radiation

LS7_12 Occupational medicine

LS7_13 Medical ethics

LS8 Evolutionary, population and environmental biology: evolution, ecology, animal behaviour, population biology, biodiversity, biogeography, marine biology, ecotoxicology, prokaryotic biology

LS8_1 Ecology (theoretical, community, population, microbial, evolutionary ecology)

LS8_2 Population biology, population dynamics, population genetics, plant-animal interactions

LS8_3 Systems evolution, biological adaptation, phylogenetics, systematics

LS8_4 Biodiversity, comparative biology

LS8_5 Conservation biology, ecology, genetics

LS8_6 Biogeography

LS8_7 Animal behaviour (behavioural ecology, animal communication)

LS8_8 Environmental and marine biology

LS8_9 Environmental toxicology

LS8_10 Prokaryotic biology

LS8_11 Symbiosis

LS9 Applied life sciences and biotechnology: agricultural, animal, fishery, forestry and food sciences; biotechnology, chemical biology, genetic engineering, synthetic biology, industrial biosciences; environmental biotechnology and remediation

LS9_1 Genetic engineering, transgenic organisms, recombinant proteins, biosensors

LS9_2 Synthetic biology and new bio-engineering concepts

LS9_3 Agriculture related to animal husbandry, dairying, livestock raising

LS9_4 Aquaculture, fisheries

LS9_5 Agriculture related to crop production, soil biology and cultivation, applied plant biology

LS9_6 Food sciences

LS9_7 Forestry, biomass production (e.g. for biofuels)

LS9_8 Environmental biotechnology, bioremediation, biodegradation

LS9_9 Biotechnology (non-medical), bioreactors, applied microbiology

LS9_10 Biomimetics

LS9_11 Biohazards, biological containment, biosafety, biosecurity

SOCIAL SCIENCES AND HUMANITIES

SH1 Individuals, institutions and markets: economics, finance and management

SH1_1 Macroeconomics, business cycles

SH1_2 Development, economic growth

SH1_3 Microeconomics, institutional economics

SH1_4 Econometrics, statistical methods

SH1_5 Financial markets, asset prices, international finance

SH1_6 Banking, corporate finance, accounting

SH1_7 Competitiveness, innovation, research and development

SH1_8 Consumer choice, behavioural economics, marketing

SH1_9 Organization studies, strategy

SH1_10 Human resource management, labour economics

SH1_11 Public economics, political economics, public administration

SH1_12 Income distribution, poverty

SH1_13 International trade, economic geography

SH1_14 History of economics and economic thought, quantitative and institutional economic history

SH2 Institutions, values, beliefs and behaviour: sociology, social anthropology, political science, law, communication, social studies of science and technology

SH2_1 Social structure, inequalities, social mobility, interethnic relations

SH2_2 Ageing, work, social policies, welfare

SH2_3 Kinship, cultural dimensions of classification and cognition, identity, gender

SH2_4 Myth, ritual, symbolic representations, religious studies

SH2_5 Democratization, social movements

SH2_6 Violence, conflict and conflict resolution

SH2_7 Political systems and institutions, governance

SH2_8 Legal theory, legal systems, constitutions, comparative law

SH2_9 Global and transnational governance, international studies, human rights

SH2_10 Communication networks, media, information society

SH2_11 Social studies of science and technology, science, technology and innovation policies

SH3 Environment, space and population: environmental studies, demography, social geography, urban and regional studies

SH3_1 Environment, resources and sustainability

SH3_2 Environmental change and society

SH3_3 Environmental regulations and climate negotiations

SH3_4 Social and industrial ecology

SH3_5 Population dynamics, health and society

SH3_6 Families and households

SH3_7 Migration

SH3_8 Mobility, tourism, transportation and logistics

SH3_9 Spatial development, land use, regional planning

SH3_10 Urbanization, cities and rural areas

SH3_11 Infrastructure, human and political geography, settlements

SH3_12 Geo-information and spatial data analysis

SH4 The Human Mind and its complexity: cognition, psychology, linguistics, philosophy and education

SH4_1 Evolution of mind and cognitive functions, animal communication

SH4_2 Human life-span development

SH4_3 Neuropsychology and clinical psychology

SH4_4 Cognitive and experimental psychology: perception, action, and higher cognitive processes

SH4_5 Linguistics: formal, cognitive, functional and computational linguistics

SH4_6 Linguistics: typological, historical and comparative linguistics

SH4_7 Psycholinguistics and neurolinguistics: acquisition and knowledge of language, language pathologies

SH4_8 Use of language: pragmatics, sociolinguistics, discourse analysis, second language teaching and learning, lexicography, terminology

SH4_9 Philosophy, history of philosophy

SH4_10 Epistemology, logic, philosophy of science

SH4_11 Ethics and morality, bioethics

SH4_12 Education: systems and institutions, teaching and learning

SH5 Cultures and cultural production: literature, visual and performing arts, music, cultural and comparative studies

SH5_1 Classics, ancient Greek and Latin literature and art

SH5_2 History of literature

SH5_3 Literary theory and comparative literature, literary styles

SH5_4 Textual philology and palaeography

SH5_5 Visual arts

SH5_6 Performing arts

SH5_7 Museums and exhibitions

SH5_8 Music and musicology, history of music

SH5_9 History of art and history of architecture

SH5_10 Cultural studies, cultural diversity

SH5_11 Cultural heritage, cultural memory

SH6 The study of the human past: archaeology, history and memory

SH6_1 Archaeology, archaeometry, landscape archaeology

SH6_2 Prehistory and protohistory

SH6_3 Ancient history

SH6_4 Medieval history

SH6_5 Early modern history

SH6_6 Modern and contemporary history

SH6_7 Colonial and post-colonial history, global and transnational history

SH6_8 Social and economic history

SH6_9 History of ideas, intellectual history, history of sciences and techniques

SH6_10 Cultural history

SH6_11 History of collective identities and memories, history of gender

SH6_12 Historiography, theory and methods of history