

ERC Consolidated Panel Structure and Titles

Consolidated version as of 7/11/06

Social Sciences and Humanities

Panel SH1 - Individuals and organisations: economics, management, demography, geography, urban and environmental studies

- Macroeconomics, growth, development, business cycles
- Microeconomics, institutional economics
- Environment, sustainability, social and industrial ecology
- Econometrics, statistical methods
- Financial markets, banking and corporate finance
- Innovation, competitiveness, research and development
- Consumer behaviour, marketing
- Organization studies, strategy
- Human resource management, employment and earnings
- Public administration, public economics
- Income distribution, poverty
- International trade, economic geography
- Human and social geography, spatial and regional planning
- Population dynamics, health and population
- Urbanization, urban planning, transport studies

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

- Social structure, inequalities, mobility
- Communication networks, media studies, information society
- Ageing, work, social policies
- Globalization, migration, interethnic relations
- Identity, community, nation, religion
- Legal systems, human rights, constitutions
- Kinship, cultural dimensions of classification and cognition
- Myth, ritual, symbolic representations
- Ethnography
- Political systems, legitimacy, political support
- Global and transnational governance, civic participation
- Transformation of societies, democratization, social movements
- Scientific knowledge production, politics of knowledge
- Technosciences and societies, mutual engagement
- History of science and technology

Panel SH3 - The human mind and its complexity: cognition, linguistics, psychology, philosophy and education

- Evolution of mind and cognitive functions
- Formal, cognitive and functional linguistics
- Neuro-, psycho-, sociolinguistics
- Linguistic typology, comparative and historical linguistics
- Human life-span development
- Neuro- and cognitive psychology
- Clinical and experimental psychology
- Education
- Philosophy
- Epistemology, logic
- Ethics and morality

Panel SH4 - Cultures and cultural diversity: literature, visual and performing arts, music and cultural studies

- Classics, classical literature, classical art
- Literature, literary theory, analysis and criticism
- Comparative literature
- Textual philology and textual criticism
- Visual arts
- Performing arts
- Museums and exhibitions
- Music and musicology
- Cultural studies, cultural diversity
- Ethnic and postcolonial studies
- Cultural heritage

Panel SH5 - The study of the past and of cultural artefacts: memory, history and archaeology

- Modern and contemporary history
- Ancient history, ancient cultures
- Medieval history
- National, transregional and transnational history
- Entangled histories, global history
- Social, economic, cultural, political history
- Historiography
- Archeology, prehistory, protohistory
- Collective memories and identities, lieux de memoire
- History of art and architecture
- History of ideas, intellectual history

Mathematics, physical sciences, information and communication, engineering, universe and earth sciences

Panel PE1 - Mathematical foundations: All areas of mathematics, pure and applied, plus mathematical aspects of theoretical computer science, and mathematical physics

- Foundations of mathematics and logic
- Algorithms
- Number theory
- Combinatorial analysis
- Algebra
- Geometry
- Topology
- Analysis
- Computational mathematics
- Theoretical computer science
- Numerical analysis
- Probability and statistics
- Applied mathematics
- Operations research
- Mathematical physics
- Other areas of mathematics

Panel PE2 - Fundamental constituents of matter: High energy, particle, nuclear, plasma, atomic, molecular, gas, and optical physics.

- High energy physics
- Fundamental interactions and particles
- Particle physics
- Nuclear physics
- Gas and plasma physics
- Atomic, molecular physics
- Optics and quantum optics
- Relativity
- Classical physics
- Thermodynamics
- Non-linear physics
- General physics
- Metrology

Panel PE3 - Condensed matter in physics and chemistry: Condensed matter (structure, electronic properties, fluids,...), statistical physics, nanosciences, reactions.

- Biophysics
- Condensed matter and solid state physics
- Statistical physics
- Phase transitions
- Structural properties of materials
- Electronic properties of materials and transport
- Magnetism
- Superconductivity
- Semiconductors
- Material sciences (physics related)
- Nanosciences and nanotechnology (physics related)
- Reaction mechanisms
- Chemical reactions
- Reaction dynamics
- Theoretical and computational chemistry of condensed matter
- Chemical physics, physical chemistry of condensed matter
- Nanochemistry

Panel PE4 - Material and chemical sciences: material sciences, molecular architecture, chemical theory, analysis and synthesis (organic and inorganic), physical and environmental chemistry, method development.

- Physical chemistry of molecules
- Environment chemistry
- Homogeneous and heterogeneous catalysis
- Spectroscopic and spectrometric techniques
- Molecular architecture
- Molecular chemistry
- Analytical chemistry
- Organic chemistry
- Inorganic chemistry
- Instrumental techniques
- Macromolecular chemistry, polymer chemistry
- Solid state chemistry
- Synthesis (organic and inorganic)
- Material science (chemistry related)
- Surface science
- Colloid chemistry
- Combinatorial chemistry
- Theoretical and computational chemistry of molecules
- Method development
- Supramolecular chemistry
- Chemistry of biological systems (biological chemistry)

Panel PE5 - Information and communication: Informatics and information systems, computer science, scientific computing, communication technology, intelligent systems.

- Computer architecture
- Database management
- Formal methods
- Graphics
- Human computer interaction and interface
- Informatics and information systems
- Theoretical computer science
- Intelligent systems
- Scientific Computing
- Modelling tools
- Multimedia
- Networks
- Parallel and Distributed Computing
- Robotics
- Signals, Speech and Image Processing
- Systems and software

Panel PE6 - Engineering sciences: Electronics, product design, process design and control, construction methods, fluid and solid mechanics, energy systems, bio-engineering.

- Aerospace engineering
- Biomedical engineering and technology
- Chemical engineering
- Civil engineering
- Control engineering
- Electrical and electronic engineering
- Computational engineering
- Fluid dynamics
- Energy systems
- Maritime engineering
- Microengineering
- Mechanical engineering
- Materials Engineering
- Nuclear engineering
- Process engineering
- Product design
- Simulation engineering and modelling
- Systems engineering

Panel PE7 - Universe science: Astro-physics/chemistry/biology/geology; solar system; stellar, galactic and extragalactic astronomy, cosmology; space science, instrumentation.

- Solar and interplanetary physics
- Planetary systems sciences
- Interstellar medium
- Formation of stars and planets
- Astrobiology
- Stars and stellar systems
- The Galaxy
- Formation and evolution of galaxies
- Clusters of galaxies and large scale structures
- High energy and particles astronomy – X-rays, cosmic rays, gamma rays, neutrinos
- Relativistic Astrophysics
- Dark matter, dark energy
- Gravitational astronomy
- Cosmology
- Space Sciences
- Very large data bases: archiving, handling and analysis
- Instrumentation – telescopes, detectors and techniques

Panel PE8 - Earth system science: Physical geography, geology, geophysics, meteorology, oceanography, climatology, ecology, global environmental change, biogeochemical cycles, solar planets, natural resources management

- Atmospheric chemistry and aeronomy
- Meteorology and atmospheric sciences
- Climatology (incl. paleo-climatology), climate modeling
- Ecology, environmental chemistry, water, air and soil pollution
- Geography, geology , geochemistry
- Global environmental change
- Geophysics, seismology, volcanology
- Oceanography/marine sciences (physical, chemical, biological),
- Biogeochemistry
- Geophysics, geochemistry, mineralogy
- Solar planetology
- Petrology, sedimentology
- Physical geography
- Earth observations from space / remote sensing
- Geomagnetism, paleomagnetism
- Ozone and atmospheric composition
- Soil science, tectonics
- Waste disposal, water science

Life Sciences

Panel LS1 - Molecular, cellular and developmental biology: Molecular biology, biochemistry, biophysics, structural biology, cell biology, cell physiology, signal transduction and pattern formation in plants and animals.

- Molecular biology and interactions
- General biochemistry and metabolism
- Nucleic acid biosynthesis, modification and degradation
- RNA processing and modification
- Protein synthesis, modification and turnover
- Biophysics
- Structural biology (crystallography, NMR, EM)
- Morphology and functional imaging of cells
- Cell biology and molecular transport mechanisms
- Cell cycle and division
- Apoptosis
- Cell differentiation, physiology and dynamics
- Organelle biology
- Cell signalling and cellular interactions
- Signal transduction
- Development, developmental genetics, pattern formation and embryology

Panel LS2 - Genetics, genomics, bioinformatics and systems biology: Molecular and cell genetics, genomics, transcriptomics, proteomics, metabolomics, bioinformatics, computational biology, biostatistics, biological modelling and simulation, systems biology.

- Molecular genetics
- Epigenetics and gene regulation
- Quantitative genetics
- Cell genetics
- Comparative genetics
- Human genetics
- Reverse genetics and RNAi
- Genomics, comparative genomics, functional genomics
- Proteomics
- Transcriptomics
- Metabolomics
- Glycomics
- Bioinformatics
- Computational biology
- Biostatistics
- Systems biology
- Biological systems analysis, modelling and simulation

Panel LS3 - Organismic physiology, including infection and immunity: Organogenesis, organ physiology, endocrinology, ageing, regeneration, metabolism, immunobiology, microbiology, virology, parasitology, toxicology.

- Organ physiology
- Comparative physiology
- Endocrinology
- Ageing
- Metabolism, biological basis of metabolism related disorders
- Toxicology
- Parasite biology
- Microbiology, microbial genetics
- Virology, viral genetics
- Innate immunity
- Adaptive immunity
- Phagocytosis and cellular immunity
- Immunosignalling
- Immunological memory and tolerance
- Immunogenetics
- Biological basis of immunity related disorders

Panel LS4 -Neurosciences: Neurobiology, neuroanatomy, neurophysiology, neurochemistry, neuropharmacology, neuroimaging, systems neuroscience, psychiatry.

- Neurobiology
- Neuroanatomy
- Neurophysiology
- Neurochemistry and neuropharmacology
- Systems neuroscience
- Cognition
- Behaviour
- Brain and neuroimaging
- Biological basis of neural and psychiatric disorders

Panel LS5 - Evolutionary, population and environmental biology: Evolution, ecology, animal behaviour, population biology, biodiversity, biogeography, marine biology, ecotoxicology.

- Evolutionary biology, biological adaptation
- Molecular evolution
- Evolution and development
- Population biology, population dynamics, population genetics
- Ecology, environmental and conservation biology, biodiversity, ecotoxicology, marine biology, radiation biology
- Environment and health risks including radiation biology, environmental medicine and toxicology

Panel LS6 - Medical and health science research: Aetiology, diagnosis and treatment of disease, public health, epidemiology, pharmacology, regenerative medicine, veterinary medicine, medical ethics.

- Biological basis of non-communicable diseases, except for neural/psychiatric, immunity-related and metabolism-related disorders. E.g. cancer and cardiovascular diseases.
- Diagnostics
- Therapies: drug therapies, gene therapy, surgery
- Stem cell biology, regenerative medicine
- Public health and epidemiology
- Pharmacology and pharmacogenomics
- Health services, health care research
- Veterinary medicine
- Ethics in medical and health sciences

Panel LS7 - Applied Life Sciences, biotechnology and bioengineering: Agricultural, animal, fishery, forestry and food sciences; biotechnology, chemical biology, genetic engineering, synthetic biology, industrial biosciences; environmental biotechnology and remediation; bioethics.

- Genetic engineering, transgenic organisms, recombinant proteins, biosensors
- Synthetic biology and new bio-engineering concepts
- Chemical biology
- Agriculture and food: animal husbandry, dairying, livestock raising, crop production, soil biology and cultivation, applied plant biology
- Aquaculture, fisheries
- Forestry, biomass production
- Environmental biotechnology: bioremediation; biodegradation
- Industrial biotechnology: bioreactors, industrial microbiology
- Drug discovery, drug design
- Biofuels, biomimetics
- Biohazards, biological containment, biosafety, biosecurity
- Ethics in life sciences (other than medical and health sciences)