Sub-panel expertise requirements

Introduction

1. Each sub-panel has identified its requirements for further sub-panel members and / or assessors, to ensure each has an appropriate breadth of expertise and volume of panel members necessary for the assessment of REF submissions. The panels' analysis of their expertise requirements was informed by data provided by higher education institutions in the survey of submission intentions. We received a high number of nominations for the panels during the first round of nominations in 2017. Where nominees were content to remain in consideration for this later round, sub-panels are considering existing nominees for appointment at this stage also.

REF2021 Research Excellence

February 2020

2. A table is provided for each sub-panel, setting out the specific areas of expertise in which nominations are sought, according to the type of panel roles required. Nominations should be made using the online form, available at: https://www.cognitoforms.com/ResearchEngland1/REF2021NominationsForm.

3. The areas of expertise set out for each sub-panel do not necessarily equate to the number of panellists being sought. For some areas, multiple appointments are required; for others, candidates may have expertise in more than one area. Nominations are therefore invited for multiple candidates across the expertise requirements, both to ensure the number of appointments can be met, as well as to ensure a diverse pool of candidates for consideration.

4. All sub-panels welcome nominations of candidates from a diverse range of backgrounds, institution types and geographical region, and particularly welcome nominations of candidates from under-represented groups, including people from black and minority ethnic (BME) backgrounds. In addition to this, where sub-panels have identified further, specific areas where increased representation is sought, this information is included below.

Main Panel A	Main Panel B
1 <u>Clinical Medicine</u>	7 Earth Systems and Environmental Sciences
2 Public Health, health services and Primary Care	8 <u>Chemistry</u>
3 Allied Health Professions, Dentistry, Nursing and	9 Physics
Pharmacy	10 Mathematical Sciences
4 Psychology, Psychiatry and Neuroscience	11 Computer Sciences and Informatics
5 <u>Biological Sciences</u>	12 Engineering
6 Agriculture, Food and Veterinary Sciences	
Main Panel C	Main Panel D
13 Architecture, Built Environment and Planning	25 Area Studies
14 Geography and Environmental Studies	26 Modern Languages and Linguistics
15 <u>Archaeology</u>	27 English Language and Literature
16 Economics and Econometrics	28 <u>History</u>
17 Business and Management Studies	29 <u>Classics</u>
18 <u>Law</u>	30 Philosophy
19 Politics and International Studies	31 Theology and Religious Studies
20 Social Work and Social Policy	32 Art and Design: History, Practice and Theory
21 <u>Sociology</u>	33 Music, Drama, Dance, performing Arts, Film and
22 Anthropology and Development Studies	Screen Studies
23 Education	34 Communication, Cultural and Media Studies,
24 Sport and Exercise Sciences, Leisure and Tourism	Library and Information Management

All sub-panels welcome nominations of candidates from a diverse range of backgrounds, institution types and geographical region, and particularly welcome nominations of candidates from under-represented groups, including people from black and minority ethnic (BME) backgrounds. In addition to this, where sub-panels have identified further, specific areas where increased representation is sought, this information is included below.

Main Panel A

Sub-panel 1: Clinical Medicine

Panel role	Expertise required
Sub-panel members	Clinical oncology
(practising researcher)	SurgeryNeurology, general expertise e.g. neurodegenerative disease/stroke
Output assessors	 Obstetrics and gynaecology Cardiovascular (vascular biology) Surgery
Sub-panel members (research user)	Research user (industry)Research user (NHS)
Impact assessors	Research users across full spectrum of the application of clinical medicine

The sub-panel particularly welcomes nominations of candidates from the following under-represented groups: women; people from BME backgrounds.

Sub-panel 2: Public Health, health services and Primary Care

Panel role	Expertise required
Sub-panel members	Health economics
(practising researcher)	Complex behavioural interventions
	Informatics
	Mental health or health psychology
	Maternal & child health
	Health policy
Output assessors	 Infectious disease modelling (joint with UOA 6)
Sub-panel members	public health practitioner
(research user)	global health specialist
Impact assessors	Treatment guidelines
	Knowledge exchange and translation
	 Industry (health informatics, digital health)
	Public health policy and regulation

All sub-panels welcome nominations of candidates from a diverse range of backgrounds, institution types and geographical region, and particularly welcome nominations of candidates from under-represented groups, including people from black and minority ethnic (BME) backgrounds. In addition to this, where sub-panels have identified further, specific areas where increased representation is sought, this information is included below.

Sub-panel 3: Allied Health Professions, Dentistry, Nursing and Pharmacy

Panel role	Expertise required
Sub-panel members	Cardiovascular rehabilitation
(practising researcher)	 Midwifery practice and research ante, intra and post-natal
	Craniofacial biology, dental public health
	 Drug action/ pharma-economics pharmacology / microbiology/ pharmacy
	Pharmacokinetics/pharmgenomic
	 Immunology/infectious diseases/ Molecular biology/endocrine/cell
	biology/biomarkers
	 Speech and Language Therapy, Linguistics
Output assessors	Endocrine/Biomarkers
	 Speech and language therapy and practice
Impact assessors	Dental research user
	 Spin out, patent, IP, early start up expertise
	 Pharmacy industry, professional body, Pharmacy practice
	NHS mental health nurse manager
	Sports performance; health and exercise

Sub-panel 4: Psychology, Psychiatry and Neuroscience

Panel role	Expertise required
Sub-panel members (practising researcher)	 Psychology: cognitive, experimental, biological, health, developmental, social and behavioural neuroscience Psychiatry: genetics, imaging, psychiatric neuroscience, psychopharmacology Neuroscience: cell biology, computational neuroscience, imaging, electrophysiology
Output assessors	 Psychology: cognitive, experimental, biological, health, developmental, social and behavioural neuroscience Psychiatry: genetics, imaging, psychiatric neuroscience, psychopharmacology Neuroscience: cell biology, computational neuroscience, imaging, electrophysiology
Impact assessors	 Applications of psychological research in any relevant context Applications of psychiatric research in any relevant context Applications of neuroscience research in any relevant context

All sub-panels welcome nominations of candidates from a diverse range of backgrounds, institution types and geographical region, and particularly welcome nominations of candidates from under-represented groups, including people from black and minority ethnic (BME) backgrounds. In addition to this, where sub-panels have identified further, specific areas where increased representation is sought, this information is included below. Sub-panel 5: Biological Sciences

Panel role	Expertise required
Sub-panel members	Environmental & evolutionary biology
(practising researcher)	Cellular & molecular plant biology
	Neurobiology, developmental neurobiology
	Molecular immunology
	Molecular bacteriology
Impact assessors	Conservation biology and ecology

The sub-panel particularly welcomes nominations of candidates from the following under-represented groups: people from BME backgrounds.

Sub-panel 6: Agriculture, Food and Veterinary Sciences

Panel role	Expertise required
Sub-panel members	Animal behaviour (essential), with an interest in animal welfare (desirable)
(practising researcher)	Quantitate Genetics/genomics
	Veterinary epidemiology
	Computational biologist/bioinformatics
Output assessors	 Infectious disease modelling (joint with UOA 2)
Impact assessors	 Agricultural industry / third sector groups relating to the implications of agriculture on the natural environment Food industry
	Clinical veterinary practice
	Agricultural or animal / crop disease policy

The sub-panel particularly welcomes nominations of candidates from the following under-represented groups: people from BME backgrounds.

Main Panel B

Sub-panel 7: Earth Systems and Environmental Sciences

Panel role	Expertise required
Sub-panel members	Atmospheric Physics
(practising researcher)	 Climate Modelling/climate change/atmospherics (joint with UOA 14)

All sub-panels welcome nominations of candidates from a diverse range of backgrounds, institution types and geographical region, and particularly welcome nominations of candidates from under-represented groups, including people from black and minority ethnic (BME) backgrounds. In addition to this, where sub-panels have identified further, specific areas where increased representation is sought, this information is included below. Sub-panel 8: Chemistry

Panel role	Expertise required
Impact assessors	 To contribute to assessment of impact case studies anticipated in areas spanning impacts on: commerce and the economy, production, health and well- being (in large, medium and small companies, and spin-outs) and public policy, law and services.

The sub-panel particularly welcomes nominations of candidates from under-represented groups.

Sub-panel 9: Physics

Panel role	Expertise required
Sub-panel members	Extragalactic astronomy and astrophysics
(practising researcher)	
Impact assessors	 Expertise in spin out, SME and growth companies

All sub-panels welcome nominations of candidates from a diverse range of backgrounds, institution types and geographical region, and particularly welcome nominations of candidates from under-represented groups, including people from black and minority ethnic (BME) backgrounds. In addition to this, where sub-panels have identified further, specific areas where increased representation is sought, this information is included below. Sub-panel 10: Mathematical Sciences

Panel role	Expertise required
Sub-panel members (practising researcher)	 Mathematical Physics (string theory and applications in physics and mathematics) Numerical Analysis, especially partial differential and integral equations, and approximation theory
Output assessors	 Differential Geometry Ergodic theory and dynamical systems
Impact assessors	 Individuals with experience of using research in UOA 10's remit from the following sectors: Healthcare/ Medicine/ Pharma Public understanding Industrial applications Environment Finance/ risk

Sub-panel 11: Computer Sciences and Informatics

Panel role	Expertise required
Sub-panel members	Individuals with expertise in one or more of the following areas:
(practising researcher) /	Hardware
output assessors	Software organization and properties
	 Models of computation and formal languages
	 Computational complexity and cryptography
	Logic
	 Design and analysis of algorithms
	 Theory and algorithms for application domains
	Discrete mathematics
	Collaborative and social computing
	Visualisation
	Symbolic and algebraic manipulation
	Natural language processing
	Computer vision
	Machine learning
	Computer graphics
	 Distributed and concurrent computing
	 Applied computing – business and enterprise
	 Applied computing – physical sciences and engineering
	 Applied computing – life and medical sciences
Sub-panel members	 Individuals with experience of transforming research covered by UOA 11 into
(research user) / impact	impact across the range of areas as described in the REF 2021 guidance.
assessors	

The sub-panel particularly welcomes nominations of candidates from the following under-represented groups: women; people from BME backgrounds; institutions/organisations in Scotland or Northern Ireland.

All sub-panels welcome nominations of candidates from a diverse range of backgrounds, institution types and geographical region, and particularly welcome nominations of candidates from under-represented groups, including people from black and minority ethnic (BME) backgrounds. In addition to this, where sub-panels have identified further, specific areas where increased representation is sought, this information is included below.

Sub-panel 12: Engineering

Panel role	Expertise required
Output assessors	Music technology
	Transport, railway engineering
Impact assessors	 Experience of using research in the areas within UOA 12's remit

Main Panel C

Sub-panel 13: Architecture, Built Environment and Planning

Panel role	Expertise required
Sub-panel members (practising researcher)	 Environmental issues (ecosystem services, well-being, resilience, natural resources management) Urban and regional planning (incl policy and practice, economic development, environment, spatial analysis) Construction management/ Construction engineering
Output assessors	 Real Estate Economics and Finance Construction management/ Construction engineering Building technology
Sub-panel members (research user)	 Construction management/ Building technology
Impact assessors	Environmental impactConstruction management/ Building technology

Sub-panel 14: Geography and Environmental Studies

Panel role	Expertise required
Sub-panel members (practising researcher)	 Cultural geography Environmental geography, socio-environmental specialism Biogeography, ecology, (potentially higher latitude specialisms) Environmental process modelling including potentially big data and terrestrial focus Climate modelling, atmospheric sciences (joint with UOA 7) Urban geography, with possible links to/intersections with research on urban
	political economies
Impact assessors	 Urban policy and practice Development Welfare and health Cultural policy and practice

All sub-panels welcome nominations of candidates from a diverse range of backgrounds, institution types and geographical region, and particularly welcome nominations of candidates from under-represented groups, including people from black and minority ethnic (BME) backgrounds. In addition to this, where sub-panels have identified further, specific areas where increased representation is sought, this information is included below.

Sub-panel 15: Archaeology

Panel role	Expertise required
Sub-panel members (research user)	 Policy/cultural heritage/heritage interpretation/education/cultural resource management/planning expertise and experience in user community (national or regional heritage organisation)
Specialist advisers	 Languages and textual sources for the Ancient Near East (Akkadian, Babylonian etc) – shared with UOA 29 Languages and textual sources for Ancient (Pharaonic) Egypt – shared with UOA 29

The sub-panel particularly welcomes nominations of candidates from the following under-represented groups: institutions / organisations in Scotland or Northern Ireland.

Sub-panel 16: Economics and Econometrics

Panel role	Expertise required
Sub-panel members (practising researcher)	 Macroeconomics Econometrics Political economy/public economics Applied microeconomics Development economics Economic theory Industrial economics
Sub-panel members (research user) / impact assessors	 Economics: joint sub-panel member with UOA 17 Experience in the areas within UOA 16's remit, including a wide range of organisations who are users of economic research (e.g. government departments, local government and authorities, CBI, TUC, chambers of commerce, charities, consultancies, practitioners and others)

The sub-panel particularly welcomes nominations of candidates from the following under-represented groups: diversity of HEI type, including post-1992 HE institutions.

All sub-panels welcome nominations of candidates from a diverse range of backgrounds, institution types and geographical region, and particularly welcome nominations of candidates from under-represented groups, including people from black and minority ethnic (BME) backgrounds. In addition to this, where sub-panels have identified further, specific areas where increased representation is sought, this information is included below. Sub-panel 17: Business and Management Studies

Panel role	Expertise required
Sub-panel members	Finance, banking and risk management
(practising researcher)	Accountancy
	Marketing and consumer behaviour
	HRM & employment relations
	Organisational studies
	 Operations Management / supply chain management
	 Information systems management
	Organisational psychology/ leadership
	Management education
	 Interdisciplinary member with public policy
	Economics: joint with UOA 16
	 Sports & hospitality management: joint with UOA 24
Impact assessors	 Individuals with experience in the wider use of business and management
	research from the public, private and third sectors

The sub-panel particularly welcomes nominations of candidates from the following under-represented groups: people from BME backgrounds; diversity of regions and HEI type.

Sub-panel 18: Law

Panel role	Expertise required
Sub-panel members (practising researcher)	 Public International Law and Human Rights
Output assessors	 Property, equity and trusts Banking and finance law Competition law and public procurement Philosophy of law and legal theory Intellectual property law and information technology regulation Private international and commercial law, International trade and investment law Family and child law Private law, particularly tort International criminal law, counter-terrorism, and transitional justice studies Labour and employment law Global and transnational law and governance Legal researcher with quantitative methodology expertise Criminal Justice (including evidence law) Criminology
Sub-panel members (research user)	Legal practice / legal services
Impact assessors	 All areas of law but particularly fields of public policy, law reform and legal services

The sub-panel particularly welcomes nominations of candidates from the following under-represented groups: people from BME backgrounds; institutions/organisations in Wales or Northern Ireland.

All sub-panels welcome nominations of candidates from a diverse range of backgrounds, institution types and geographical region, and particularly welcome nominations of candidates from under-represented groups, including people from black and minority ethnic (BME) backgrounds. In addition to this, where sub-panels have identified further, specific areas where increased representation is sought, this information is included below.

Sub-panel 19: Politics and International Studies

Panel role	Expertise required
Sub-panel members (practising researcher)	 International relations, with substantive experience in foreign policy and security studies, and methodological range including qualitative, quantitative and formal methods Political theory, including analytical post-Rawlsian political theory, with methodological range including non-ideal as well as ideal theory
Impact assessors	 Security and foreign policy International development Gender UK public policy (including constitutional issues) International politics (including EU) Elections and parties

The sub-panel particularly welcomes nominations of candidates from the following under-represented groups: women; people from BME backgrounds.

Sub-panel 20: Social Work and Social Policy

Panel role	Expertise required
Sub-panel members	Children and families/child protection
(practising researcher)	Cross-cultural understanding, marginalised groups, including mental health
	Young people/migration/child welfare
	Domestic violence, sexual violence, hate crime, racism
Impact assessors	Health/social care
	Criminal justice/drugs
	 Research commissioner - 'overview' including migration, modern slavery and welfare issues
	Workforce participation, regulation and professional training/education

The sub-panel particularly welcomes nominations of candidates from the following under-represented groups: people from BME backgrounds; people at post-1992 HE institutions.

All sub-panels welcome nominations of candidates from a diverse range of backgrounds, institution types and geographical region, and particularly welcome nominations of candidates from under-represented groups, including people from black and minority ethnic (BME) backgrounds. In addition to this, where sub-panels have identified further, specific areas where increased representation is sought, this information is included below.

Sub-panel 21: Sociology

Panel role	Expertise required
Sub-panel members (practising researcher)	 Science and technology studies (STS) including environmental issues Criminology (including one shared member with UOAs 18 and 20) Health
Sub-panel members (research user)	Experience of using research in the areas within UOA 21's remit.

The sub-panel welcomes nominations for under-represented groups, including by protected characteristics, types of higher education institution, and region.

Sub-panel 22: Anthropology and Development Studies

Panel role	Expertise required
Sub-panel members (research user) / impact assessors	 Anthropology in use (e.g. museum director/curator, anthropologist working in public/policy, etc.)

The sub-panel particularly welcomes nominations of candidates from the following under-represented groups: organisations in Wales or Northern Ireland.

Sub-panel 23: Education

Panel role	Expertise required
Output assessors	Communities and education
	Lifelong Learning
	Alternative & Outdoor education
	Sport and Physical education
Impact assessors	 Educational research impact in the voluntary/charitable sectors, and with communities
	Educational research impact in educational workplaces and on Continuing
	Professional Development activity
	 Educational research impact in organisations that fund research and
	themselves seek to influence policy
	Educational research impact on government policy

All sub-panels welcome nominations of candidates from a diverse range of backgrounds, institution types and geographical region, and particularly welcome nominations of candidates from under-represented groups, including people from black and minority ethnic (BME) backgrounds. In addition to this, where sub-panels have identified further, specific areas where increased representation is sought, this information is included below.

Sub-panel 24: Sport and Exercise Sciences, Leisure and Tourism

Panel role	Expertise required
Sub-panel members (practising researcher)	 Sociology of Sport (with, if possible, expertise in either Sports Ethics/Philosophy or Sports Policy) Sport and Exercise Biomechanics Motor control Strength and conditioning Sports injury and rehabilitation Sports & hospitality management: joint with UOA17
Impact assessors	 Tourism / event management Public health Sports policy

The sub-panel particularly welcomes nominations of candidates from the following under-represented groups: women; people from BME backgrounds; people with a disability; diversity of regions.

Main Panel D

Sub-panel 25: Area Studies

Panel role	Expertise required
Output assessors	 Latin American Studies (ability to speak Spanish and Portuguese is essential, with a knowledge of political economy and international development needed)
Impact assessors	 Impact in non-European parts of the world, with a knowledge of research use (ability to review outputs desirable).

Sub-panel 26: Modern Languages and Linguistics

Panel role	Expertise required
Output assessors	British Sign Language / Deaf Studies
Impact assessors	 Heritage sector Publishing Language policy Language education Professional use/users of language

All sub-panels welcome nominations of candidates from a diverse range of backgrounds, institution types and geographical region, and particularly welcome nominations of candidates from under-represented groups, including people from black and minority ethnic (BME) backgrounds. In addition to this, where sub-panels have identified further, specific areas where increased representation is sought, this information is included below.

Sub-panel 27: English Language and Literature

Panel role	Expertise required
Sub-panel members	Linguistics (general)
(practising researcher)	Post-colonial studies
	American literature
Impact assessors	Publishing
	Archives and libraries
	Literary organisations and charities
	Museums and galleries
	Heritage sector

Sub-panel 28: History

Panel role	Expertise required
Sub-panel members (practising researcher)	 Early Modern British, but with the expertise to assess work with a wider geo- political reach
Output assessors	 German history, with the additional ability to assess work in military history and potentially serve as an additional IDR member Digital history/humanities, with the potential to serve as an additional IDR member East Asian history, with the ability to assess work in transnational history and potentially serve as an additional IDR member Middle Eastern history, with the potential to serve as an additional IDR member Latin American history, with the potential to serve as an additional IDR member
Sub-panel members (research user) Impact assessors	 Experience in assessing the impact of research in subject areas covered by UOA 28, in particular: television and entertainment; education and pedagogy; third-sector organisations; policy and government; and business/industry. Experience in assessing the impact of research in subject areas covered by
	UOA 28, in particular: television and entertainment; education and pedagogy; third-sector organisations; policy and government; and business/industry.

All sub-panels welcome nominations of candidates from a diverse range of backgrounds, institution types and geographical region, and particularly welcome nominations of candidates from under-represented groups, including people from black and minority ethnic (BME) backgrounds. In addition to this, where sub-panels have identified further, specific areas where increased representation is sought, this information is included below.

Sub-panel 29: Classics

Panel role	Expertise required
Sub-panel members (practising researcher)	 Ancient Philosophy Language, Linguistics and Literature (with particular expertise in the early Aegean)
Impact assessors	Heritage sector (Classical Antiquity)Museums (Classical Antiquity)
Specialist advisers	 Ancient Near East: language & textual sources – shared with UOA 15 Ancient (Pharaonic) Egypt: language & textual sources – shared with UOA 15 Modern Greek: history and culture

Sub-panel 30: Philosophy

Panel role	Expertise required
Sub-panel members (practising researcher)	Philosophy of Language
Output assessors	Political PhilosophyEpistemologyLogic
Impact assessors	Cultural and public engagementEducation and/or public policy

Sub-panel 31: Theology and Religious Studies

Panel role	Expertise required
Sub-panel members (practising researcher)	 Philosophy of religion, but also able to contribute to the grading of work in theology and ethics Jewish Studies (preferably in Rabbinic literature/Jewish textual studies), but also able to contribute to the grading of work in theology, ethics and/or continental philosophy
Impact assessors	• Experience relevant to public engagement with research in subject areas covered by UOA31, including religion and public policy, religion and education, public understanding of religion and/or religion and the creative arts.

All sub-panels welcome nominations of candidates from a diverse range of backgrounds, institution types and geographical region, and particularly welcome nominations of candidates from under-represented groups, including people from black and minority ethnic (BME) backgrounds. In addition to this, where sub-panels have identified further, specific areas where increased representation is sought, this information is included below. Sub-panel 32: Art and Design: History, Practice and Theory

Panel role	Expertise required
Sub-panel members (practising researcher / research user)	 Arts & Design Public Funders (Arts, Crafts and Design Councils Professional Bodies) Photography History, Practice and Theory Fine Art Practice & Performance, Curation Immersive and Digital Arts & Design Fashion History (Practice and Theory in particular)
Impact assessors	 Museum (education and strategy) Museums sector (curation) Publishing Arts and cultural management Gallery (public, private, national) and exhibitions Arts agencies for the promotion of arts Arts & Design Public Funders (Arts, Crafts and Design Councils Professional Bodies)

The sub-panel particularly welcomes nominations of candidates from the following under-represented groups: people from BME backgrounds; institutions/organisations in Wales.

Panel role	Expertise required
Sub-panel members (practising researcher)	 Film and Television Studies with an ability to cover two or more of the following: television studies, practice research, documentary/non-fiction filmmaking; start studies; representations of gender Scenography, virtual realities, art/science interdisciplinary practices; the digital in performance (an ability to cover Dance and/or gaming would also be advantageous) Acoustic Composition (encompassing a wide range of genres and styles; fully or partly notated, or non-notated) Music Performance (encompassing performance of notated scores across a wide range of historical periods and genres, improvisation-based performance, non-notated performance practices) and Music Performance Studies (encompassing a range of practices and methodologies)
Impact assessors	 Expertise in cultural programming, broadcasting, and/or audiences, or arts in education across one or more of the subpanel's disciplinary areas Expertise in arts and health; complementary expertise in arts and education would be beneficial
Specialist advisers	 Musical sources written in medieval Latin and medieval French Musical sources written in early forms of music notation (pre-1400) Compositional and music-analytical software written with specialist code Competence with programming languages used for computational modelling for music cognition

The sub-panel particularly welcomes nominations of candidates from the following under-represented groups: women; minority genders; people from BME backgrounds; institutions/organisations in Wales or Northern Ireland; post-1992 HE institutions.

All sub-panels welcome nominations of candidates from a diverse range of backgrounds, institution types and geographical region, and particularly welcome nominations of candidates from under-represented groups, including people from black and minority ethnic (BME) backgrounds. In addition to this, where sub-panels have identified further, specific areas where increased representation is sought, this information is included below.

Sub-panel 34: Communication, Cultural and Media Studies, Library and Information Management

Panel role	Expertise required
Sub-panel members	Practice-based research in film, TV and creative industries
(practising researcher)	Race, ethnicity, diaspora and postcolonial studies
	Film, screen and TV studies
	Popular music and popular culture
	 Cultural studies, creative industries including games studies
Impact assessors	 Impacts on creativity, culture and society and on creative and professional practice